Unit Three: Project Identification, Formulation and Design

UNIT INFORMATION

Unit Overview

This unit focuses upon the identification, formulation, and design stages of the project cycle. It provides guidance regarding setting project objectives and reviewing alternative approaches to solve a given development problem. It emphasises the involvement of stakeholders from the outset of project identification. A logical framework ('Logframe') is introduced as a tool for project formulation, appraisal and management. Other tools are introduced for assessment of sustainability and for planning implementation.

Unit Aims

- To provide background information and tools to guide project identification and formulation.

- To emphasise the importance of sound selection of alternative means at the early stages of the cycle.

- To explain how sound choice can be guided by using tools such as Logframe analysis.

- To demonstrate how project elements can be clearly specified and risks assessed and reduced.

- To set out how to link logical project design to work planning and budgeting.

Unit Learning Outcomes

By the end of this unit, students should be able to:

- grasp the main issues and questions in project identification, formulation, and design

- understand the processes to follow in formulating projects to identify problems for primary stakeholders and set appropriate project objectives

- ensure that both alternative approaches and alternative means of implementation are fully considered and appropriate choices made in selecting the best means of achieving given objectives

- know how to formulate logically consistent projects and to specify the key project elements in a clear and precise way

- identify, assess, and reduce project risks

- translate a project design in to implementation tools, particularly work plans

Unit Interdependencies

This unit makes use of concepts and terms introduced in Unit 2. In turn it introduces the concepts of Logframe analysis which are also used in Unit 10. Otherwise, this unit can be studied largely independently of the rest of the module.

KEY READINGS

❖ Belli P, Anderson JR, Barnum HN, Dixon JA, Tan J (2001) An overview of economic analysis. In: *Economic Analysis of Investment Operations: Analytical Tools and Practical Applications.* The World Bank, Washington DC, pp. 1–7.

This short chapter provides an overview of project analysis and considers some of the questions that need to be answered during project identification, including questions relating to sustainability, who benefits, and the importance of considering alternatives. It is of relevance to the whole of this unit.

❖ Dearden P, Kowalski B (2003) Programme and project cycle management (PPCM): lessons from south and north. *Development in Practice* **13**(5) 501–514.

This provides a critique of logical frameworks and highlights the importance of thinking beyond the framework. It stresses the importance of a broader knowledge of programme and project cycle management by stakeholders involved. It also emphasises the value of treating the Logframe as a 'living document'.

❖ DFID (2003) Logical frameworks. In: *Tools for Development: a Handbook for those Engaged in Development Activity.* UK Department for International Development (DFID), pp. 5.1–5.9.

Available from:

http://www.unssc.org/home/sites/unssc.org/files/publications/tools_for_development_-_a_handbook_for_those_engaged_in_development_activities.pdf

This provides more detail about how to develop Logframes, their advantages and limitations. It outlines key steps in developing a Logframe including the key components of goal, purpose, outputs and activities, how to define indicators and analysing risks and assumptions.

❖ Potts D (2002) Project identification and formulation. In: Potts D *Project Planning and Analysis for Development.* Lynne Reinner Publishers, London. pp. 23–46.

This chapter provides further background into project identification, formulation, and screening. It also succinctly explains with examples the tools described in this section — stakeholder analysis, objectives analysis, alternatives analysis, and the project framework, and it presents a useful diagram of a problem tree.

FURTHER READINGS

DFID (2003) Stakeholder analysis. In: *Tools for Development: a Handbook for those Engaged in Development Activity*. UK Department for International Development (DFID), pp. 2.1–2.11.

DFID (2003) Problem and situational analysis. In: *Tools for Development: a Handbook for those Engaged in Development Activity*. UK Department for International Development (DFID), pp. 3.1–3.9.

Available from:
http://www.unssc.org/home/sites/unssc.org/files/publications/tools_for_development_-_a_handbook_for_those_engaged_in_development_activities.pdf

World Bank (2005) *The Logframe Handbook: a Logical Framework Approach to Project Cycle Management*. The World Bank, Washington DC.

Available from: http://www-wds.worldbank.org/servlet/main?print=Y&menuPK=64187510&pagePK=64193027&piPK=64187937&theSitePK=523679&entityID=000160016_20050607122225

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DFID (2003) Logical frameworks. In: *Tools for Development: a Handbook for those Engaged in Development Activity*. UK Department for International Development (DFID), pp. 5.1–5.9.

World Bank (2005) *The Logframe Handbook: a Logical Framework Approach to Project Cycle Management*. The World Bank, Washington DC.

1.O PROJECT IDENTIFICATION TOOLS

Section Overview

This section introduces project identification and the importance of setting appropriate objectives. It provides guidance and tools concerning stakeholder analysis, problem analysis, and objectives setting.

Section Learning Outcome

By the end of this section, students should be able to:

* know the processes to follow in formulating projects to identify problems for primary stakeholders and set appropriate project objectives

1.1   Project identification

The five major stages of the project cycle are **identification, preparation, appraisal, implementation and evaluation**. The first two stages are largely the responsibility of government, which may intend to finance a project from its own resources or to seek external assistance, though donor agencies may play an influential role.

Viewed as a technical process identification involves, in the following sequence

* Preliminary stakeholder analysis

* Problem analysis

* Setting of objectives

* Analysis of alternatives

* Accountability analysis

* Logical framework thinking

* Analysis of assumptions and associated risks

* Progress indicator definition

* Stakeholder review

It can be powerfully argued that this is the most critical stage of the cycle. If the potential of the most viable concepts are overlooked at identification there is little prospect that they will be retrieved at a later stage, when the emphasis shifts from examining options to filling in the details of a specific proposal. It can be costly and difficult to abort or radically revise the preparation of a project once underway.

Economists often think in terms of **resources, opportunities,** and **constraints**, and this provides an analytical framework with which to generate project ideas. 1.1.1, below, illustrates this and the wide range of possible sources for project concepts.

1.1.1 Project identification

In practice, project ideas often result from the identification of

– a discrete set of activities identified as important within programme-based activities, a country's poverty reduction strategy and/or sector-wide approach

– problems or constraints in the development process caused by shortages of essential facilities, services, and material or human resources and by institutional or other obstacles

– unused or underused material or human resources and opportunities for their conversion to more productive purposes; or, conversely, overused natural resources that need to be conserved or restored

– unsatisfied demands or needs and possible means to meet them including opportunities arising from new technology or technological development, for example, the internet and mobile telephony

– the need to complement other investments (such as providing railway and port links for a mining project, transport, packing and marketing facilities for an agricultural development project, or access roads for a sugar factory and bio-ethanol plant)

Project ideas may also emanate from

– initiatives by local private or public entrepreneurs who wish to take advantage of opportunities they perceive or who are responding to government incentives

– community initiatives (often supported by national or international NGOs)

– a government response to local political or social pressures originating, for example, from economic, social, or regional inequalities

– a need for advocacy aimed at government in a weak policy environment

– the pursuit of national objectives such as food security

– the occurrence of natural events (drought, floods, earthquakes) and the short-term responses to crisis

– as a response to long-term trends such as migration, environmental degradation, and climate change

– a desire to create a permanent local capability to carry out development activities by building up local institutions

Finally, project ideas originate not only from within a country but also from abroad as a result of

– investment proposals of multinational firms

– programming activities of bilateral and multilateral aid agencies and their ongoing projects in the country

– influence of investment strategies adopted by other developing countries as well as opportunities created by international agreements (for example, on the use of offshore resources)

– prevailing professional opinion or public consensus within the international community in such fields as population, environment, and the alleviation of poverty

Source: unit author

It should also be noted that the idea of project identification as transparent, purely technocratic and objective does not always hold true. Project identification can be highly political, involving powerful groups which conflict and bargain in their attempts to manipulate the agenda for public action.

1.2   Stakeholder analysis

As a first stage it is important to carry out a preliminary stakeholder analysis. This enables identification of the primary stakeholders, as well as partners and their roles. Greater understanding of interest groups and their interest should result in a better quality project.

Stakeholders are individuals, groups or organisations who have an interest or stake in a project. They may be direct or indirect interests, and positive or negative. Their stake in the project may be in terms of their rights or duties or they may be affected by the outcome.

Different roles for stakeholders can be identified at this stage, and these can be developed as the project progresses. Different organisations can play different roles such as sub-contractors, delivery agency, enabling agency etc. Furthermore, it is also possible to identify if any interest groups present threats to the success of the projects, and plans can be put in place to respond to any such events.

There is increasingly a focus on the identification of agriculture and rural development initiatives using a 'bottom-up' learning approach which emphasises the importance of primary stakeholders informed and participating in the identification stage. For process projects which encourage learning from experience, and listening to participants, engaging with stakeholders from the outset is particularly important.

The outcome of the stakeholder analysis at this stage is that the primary stakeholder is identified before the objectives of the project are finalised. This ensures that the problem analysis relates specifically to the primary stakeholders.

Stakeholder tables are often constructed which provide a structured format for assessing the interest of each group.

Stakeholder group	Interest	Potential impact	Potential influence	Possible role
Primary…				
Secondary…				
External				

Stakeholder tables can be developed in different formats, for example, 1.2.1 shows the different stakeholders, their interest in the project, and whether their interest is positive or negative.

1.2.1 Example stakeholder table

Stakeholder	Interest in project	–ve/+ve
Small farmers	• Higher output and incomes	+
Food traders	• More sales	+
Labourers	• More jobs	+
Moneylenders	• Empowered clients • Less business	– –
Government officials	• Success of project • Possible loss of rent if farmers become empowered	+ –

Source: DFID (2002) p. 2.3.

1.2.2 Limitations of stakeholder analysis

Stakeholder analysis is an effective and commonly used tool, but its use does not guarantee success. There are a number of risks and practical problems that should be avoided in its use. These include:

– that the jargon can be threatening to many

– the analysis can only be as good as the information collected and used

– use of matrices for analysis and presentation can oversimplify complex situations

– the judgements used in placing stakeholders in a matrix or table are often subjective. Ideally, several opinions from different sources will be used to confirm or deny the judgement

– team working can be damaged if the differences between groups in an activity, rather than their common ground, are over-emphasised

– trying to describe winners and losers, as well as predicting hidden conflicts and interests, can alienate powerful groups

– the analysis may lead to the re-emergence of conflicts that had lain dormant

Source: DFID (2002) p. 2.4.

1.3   Problem analysis

Projects aim to address a problem or constraint. It is vital to understand the causes of the problem or constraint, how they affect stakeholders, and how to focus on tackling them.

A helpful tool for systematically understanding the causes of a problem is the problem tree method. This involves the identification of a core problem (at the centre) which is based on the best understanding and sources of information available. It is important to reach agreement amongst the participants of the key core problem.

The causes of the problem are then traced back as the 'roots' of the problem and provide the causal chain.

The effects of the problem are then traced forward as the branches and main effects of a problem on stakeholders.

Diagnosis is a crucial stage in project identification and there are many examples of mistaken diagnosis in project design. Some commonly recognised examples are cited in 1.3.1. Can you add to this list?

1.3.1 Typical examples of mistaken diagnosis in project design

(1) Failure to understand the motivation of the intended beneficiaries, or the existence of factors which would restrict their participation in, or response to, a project: eg credit to women farmers.

(2) Failure to understand the limits to improvements in institutional performance.

(3) Inadequate market analysis of demand and price forecasts for commodities for which production is to be increased.

(4) Non-recognition of the degree of dependence of a form of development on subsidies which a government may not be able to sustain or is committed to remove under macroeconomic reforms.

(5) Non-recognition of the unattractiveness to entrepreneurs of the services which a government seeks to privatise. Simply they are not profitable.

(6) Proposals for provision of services by government agencies which could be supplied more efficiently and effectively by the private sector.

(7) Failure to properly determine and understand the physical locations and causes of water losses within an irrigation scheme and also to take account of competing plans for water use in urban areas.

(8) Underestimation of the difficulty in the humid tropics of maintaining soil fertility and structure, for sustainable annual cropping.

(9) Incomprehension of the political and social factors which may militate against decentralisation or meaningful peoples' participation in project design and execution.

(10) Poor assessment of the adequacy of essential infrastructure.

Source: unit author

 Think about one of the following core problems in a development context with which you are familiar and develop a problem tree around it, tracing out the key causes and effects of one of these problems.

(1) There is limited access to markets for produce

(2) Drought has reduced crop yields this year

(3) The nearest health clinic is 15 miles away by foot

(4) One of the devastating results of HIV/AIDS has been reduced labour in the village

1.4 Objectives

When there is agreement and understanding about the core problem and the causes and effects, the project objectives can be specified.

The project purpose is developed by restating the core problem in positive terms. The project goal is created by articulating the effects of the problem in positive terms.

Although setting project objectives appears to be straightforward, the process may provide insights which could require revisiting the core problem. Overall the approach may need to be an iterative one. Initial consideration of objectives may prompt further investigation and data collection, and/or consultation with stakeholders.

Trade-offs must be assessed that arise between multiple and conflicting objectives. For example, the objective of raising production of cash crops for export may have to be weighed against the objective of increasing domestic employment or of improving equity. The objective of an agricultural sector project could be functional (to provide a national service), regional (to develop a particular area), or subsectoral (to expand the production of a crop) – but can probably not be all of these at once.

Selection of a clear and simple objective, such as strengthening a national agricultural extension service, may enhance the prospects of success. It may also, however, limit the project's overall contribution to development unless other complementary investments (such as in agricultural research or credit) are also undertaken.

Section Summary

- This section has introduced you to project identification and the process to follow in formulating projects.

- It has equipped you with tools for ascertaining who the primary and secondary stakeholders are (stakeholder analysis); the problem a project aims to address (problem analysis) and formulating key objectives.

Section 1 Self Assessment Questions

Question 1

True or false?

(a) Project identification is not an important part of the project cycle.

(b) Stakeholder analysis should be carried out when the project objective has been decided.

(c) Core problems should be agreed upon by the project team only.

(d) Objectives can be set by considering the core problem in a positive light.

Question 2

Using the following Problem Tree and Objectives Analysis, fill in the blanks.

(a) Problem tree analysis

Define the focal problem, its immediate and direct causes and effects
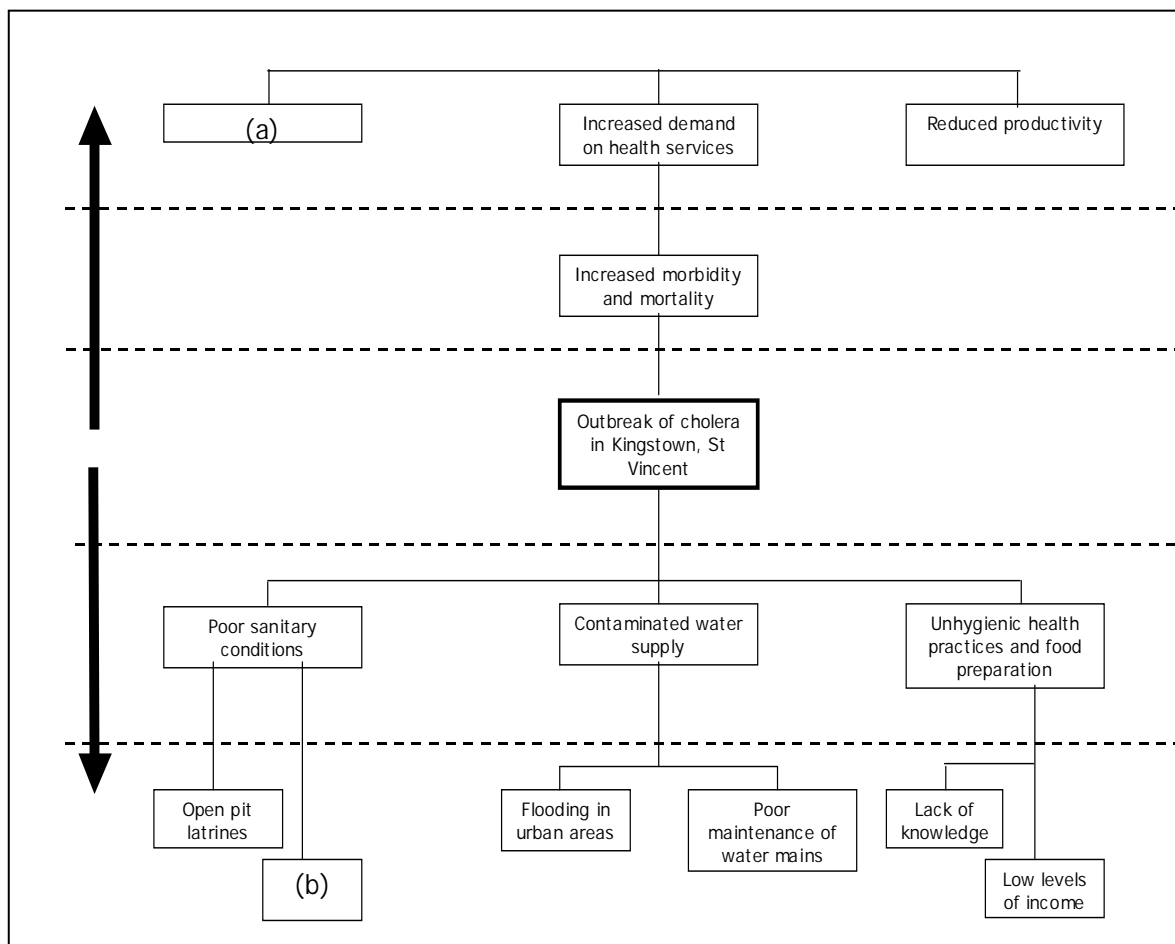
Source: DFID (2002) p. 3.4.

(b) Objectives tree analysis

Transform each problem statement into an objective

Source: DFID (2002) p. 3.5.

2.0 CONCEIVING ALTERNATIVE SOLUTIONS

Section Overview

In this section we consider why it is vitally important to 'open up the alternatives' before settling on a diagnosis of a development problem and a single concept and design for a project. This is a difficult issue, but some general approaches and tools to use are suggested.

Section Learning Outcome

By the end of this section, students should be able to:

*   thoroughly understand how to explore alternative strategies to meet the same project objective

2.1 Opening up the alternatives

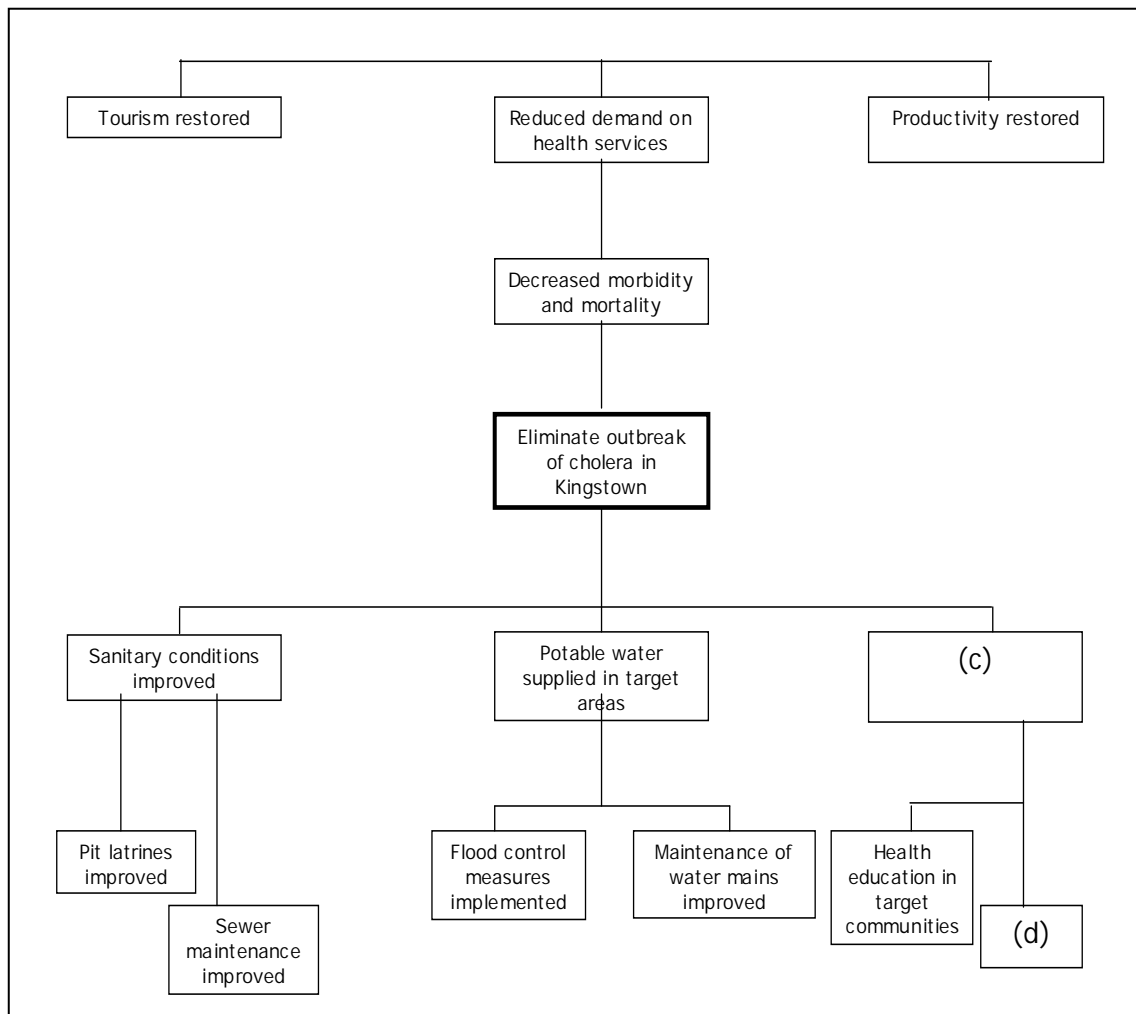Examination and refining of alternative strategies must not be neglected, though there will always be pressures to move rapidly on to detailed project design and appraisal. These pressures may include political interference, the fixing of lending programme targets, limitations in time and resources allocated to project identification and formulation, and professional bias (see 2.1.1). If the project identification team is pressurised into accepting what appears at first sight to be a viable proposal without looking much further, then subsequent preparation is reduced to simply making the best case for that proposal. Decisions made at this stage can have far reaching consequences: some are likely to be irreversible no matter how thorough the subsequent preparation and appraisal, while others may largely determine the quality of the project and its impact on development. There is no substitute for being right in the first place.

2.1.1 Professional bias in project identification

Given a national development objective such as improved food security irrigation engineers may tend to see irrigation as the preferred way to attain that goal. Within the engineering profession there are sub-groups. Mechanical engineers will look to pump options and civil engineers to dams and canals; agricultural engineers will stress field engineering and land levelling. On the other hand a national grain storage agency may claim that expansion of its own infrastructure is the only valid approach to achieving the same goal. If the real problem is a lack of price incentives for cereal growers, then neither agency's proposed solution is conceptually valid. Such things need checking at the identification stage.

In project identification it is important to get to the real cause of the problem and not to produce a project that deals with symptoms. Consider the following light-hearted tale about the medical profession.

A man goes to the Doctor with a bad back. The Doctor admits her profession is not good with backs but suggests the patient stands in the rain for three hours each day. The patient catches severe influenza and returns to the Doctor, now with two ailments, but the Doctor brightens because she knows how to treat influenza. She is now dealing with something she is good at handling.

Professionals must not twist the problems of rural people to suit their professional angles and skills.

Source: unit author

Conceiving of alternative solutions is where project planners need to be at their most creative and imaginative, and where an inter-disciplinary approach and consultation with the widest practicable constituency are the most important. 'Open up the alternatives', should be the byword of all project formulators.

Very few problems have only one possible solution. There are no demonstrably 'right' or 'wrong' answers in the design of agricultural and rural development projects: only varying degrees of plausibility and risk. Too often in the past project concepts have been processed through appraisal without adequate consideration of alternative, and possible cheaper or more effective, ways of achieving the same objectives. Whether the result of vested interest, of political pressure or simply lack of information on feasible alternatives, the consequences are the same: opportunities lost or foregone, which can seldom be recaptured.

The project identification and preparation process will initially involve choice between alternative forms of intervention or project strategy.

For example:

- the objective of a project may be to strengthen the marketing systems for a specified crop in a given region. This could be achieved through a project designed to strengthen and stimulate private traders, or through public sector intervention (eg a parastatal, or marketing board), or through promotion of farmer co-operatives.

- the objective of increasing output of a specific crop might be achieved through improvements in research, extension, input supply, access to credit, marketing facilities and market information; or a combination of these. An alternative crop might be a substitute.

Remember that such choices are not necessarily mutually exclusive. Combinations of measures may be most appropriate. In general back what works and repeat success.

In opening up the alternatives it is useful to consider as many different routes as possible, some will be discarded almost immediately, but others may introduce new ideas and insights which may contribute positively to the final project design.

The following process is suggested for this.

(1) Listing as many likely alternatives as can be thought of.

The range of options is likely to broaden if ideas are drawn together from a wide range of sources. Chances for brainstorming within the project planning team, with government agencies, non-governmental contacts and with intended beneficiaries should be cultivated.

(2) Consideration of each alternative with a view to eliminating some and combining others. At this stage consideration of each alternative will strengthen the justification for and scope of the one which is eventually selected. For ranking options, precedent – local or foreign – is likely to be a powerful guide. Have similar solutions in the project area or analogous settings worked in the past?

– Is a pilot exercise or experimental work elsewhere giving promising results?

– What are the most successful farmers doing?

– Which initiatives have not worked, or have been proven to be unsustainable?

(3) Selection of promising alternatives for preliminary formulation.

The alternatives listed in step 1 may arise from an analysis of existing constraints. The following example considers this in more detail.

Take the project objective to be increased output of beef in a particular region. The present low levels of output may be the result of

(a) cattle diseases or parasites, or a combination of both

(b) low quality of the breeding stock

(c) lack of water during the dry season

(d) inadequate feeding (overall, seasonal, and/or a particular nutritional or mineral deficiency)

(e) other unknown cause

If any of these constraints were removed, some increase in the output of meat would be expected. If two or more constraints were removed simultaneously, then a notably greater increase in output might be obtained, although the project intervention would be more costly, complex and difficult to manage.

Alternatives may also be joint or complementary in terms of the approach required. Options (a) and (d) above are both susceptible to alleviation through extension activities and it may not be worth doing (a) without (d) or vice versa. In fact projects to address (a), (b) and (d) will all require extension but (b) will also require a breeding programme. Once production has moved to a higher plane (a new production function) as a result of one intervention, other more costly projects may become economic propositions.

The project designers must therefore consider in some detail the feasibility and costs associated with overcoming each of these constraints, independently, in combination or in sequence. Suppose that a widespread and regular programme of inoculation of cattle would alleviate the first constraint (a). The overall cost of doing this, in terms of inputs and personnel must be estimated as well as the likely effectiveness and impact on the output and quality of meat. Obviously the more widespread and regular the programme is, the higher the costs will be, and at each level these need to be set against the probable benefits. Careful examination of similar projects elsewhere and all relevant documentation, an awareness of the local environment, and reliable information as to the availability of vaccine and appropriately skilled technicians will all help the technical expert in this evaluation.

It should be borne in mind that costs and benefits are unlikely to rise uniformly with the scale of operations. The analyst has to ascertain as far as is possible the relationship between costs (resources, inputs, commitment of personnel) and benefits (probable effect on output of meat) for different scales of projects designed to reduce or eradicate cattle disease. This is so as to be able to compare this approach with alternatives.

An alternative project might be construction of boreholes (tubewells), which would provide water during the dry season for the herds and thus overcome constraint (c) (assuming that this in isolation it would not exacerbate constraint (d)).

One essential choice to consider is whether an intervention in the form of a project is in fact necessary or desirable. Alternatives are to do nothing, to provide only improved access to credit or to enhance the capability of existing projects or programmes.

Section Summary

- This section has emphasised the importance of selecting alternative means for undertaking a project at the early stages of the project cycle.

- It has also provided you with the techniques for exploring alternative strategies.

Section 2 Self Assessment Question

Question 3

True or false?

(a) There is only one way of approaching a project.

(b) There is a risk of development specialists being biased by their own specialist knowledge in seeking solutions to project problems and objectives.

(c) The process of seeking alternative solutions should ideally be carried out by a multidisciplinary team.

Section 2 Self Assessment Question

3.0 LOGICAL FRAMEWORK ANALYSIS

Section Overview

This section provides an introduction and guide to the use of logical framework analysis. This is a powerful and widely used tool for project planning and management. You should gain an understanding of the use of this tool and be able to critically assess how it is used in practice.

Section Learning Outcome

By the end of this section, students should be able to:

- formulate logically consistent projects and to specify the key project elements in a clear and precise way

3.1 Introduction

Use of the Logical Framework or 'Logframe' is primarily concerned with the improved formulation and appraisal of development projects. It can however also bring about improvements in project implementation and management, and facilitate improved project monitoring and evaluation.

Project logic and the Logframe is applied by many development agencies and is incorporated in their project formulation approach. Most well-known are Logical Framework Analysis used by USAID and the UK Department for International Development, and ZOPP (Zielorientierte Projektplanung) used by the German agency for technical co-operation, Gesellschaft für Technische Zusammenarbeit (GTZ).

In this section no particular system is explained and emphasised. Rather principles are set out for a systematic, yet simple approach, the application of which can be modified to best suit the circumstances of a given project. The approach is used to establish a project's logic, in other words to formulate logically consistent project proposals.

The Logframe approach simply provides a structure for specifying the components of a project and the logical linkages between a set of means and a set of ends. It also places a project in its larger framework of national development objectives and sector goals set by plans and programmes. It is a systematic way of defining and presenting the objectives of a project, indicating how those objectives will be achieved and identifying the main factors external to the project that may introduce a risk of poor performance. It involves definition of the project inputs, activities, and outputs that lead to the achievement of objectives. Thus it is an aid to project design, preparation of work plans, appraisal of proposals and project monitoring and evaluation.

The Logframe is presented as a matrix of 4 columns and 5 rows as explained below. The figure in 3.1.1, below, shows the matrix and indicates the contents of each cell.

3.1.1 Contents of the logical framework matrix

Narrative summary	Indicators of achievement	Means of verification	Assumptions
Goal What is the reason for the project, the broader development objective towards which the efforts of the project are directed? (Why is the project undertaken? Who are the intended beneficiaries? What **impact** is being sought?)	What are the quantitative measures or qualitative judgements, to assess whether the goals has been achieved?	What sources of information will be used to show that the goal has been achieved?	For sustainability: What conditions external to the project are necessary for the delivery of the intended benefits or impact to continue for an extended period?
Project purpose What specific effect is the project to achieve as a direct result of the project outputs? If the project is completed successfully, what improvements or changes could be expected in the group, organisation or area towards which the project is immediately directed?	What are the quantitative measures or qualitative judgements, to assess whether the project purpose has been achieved?	What sources of information will be used to show that the project purpose has been achieved?	Purpose to goal: What conditions external to the project are necessary for achievement of purpose to contribute to the goal? What risks need to be monitored during implementation?
Outputs What outputs (type, quality and number) will need to be produced (by activities undertaken with inputs provided) in order for the project purpose to be achieved?	The type, quality and number of outputs to be produced by certain dates	The sources of information that will be used to verify that outputs have been achieved	Outputs to purpose: What factors outside the control of project management are necessary for progress from outputs to purpose? What risks?
Activities What activities need to be undertaken by the project in order to produce the desired outputs?	The specific activities to be undertaken by certain dates	The sources of information that will be used to verify that outputs have been achieved	Activities to outputs: What external factors are necessary for activities to generate planned outputs? What risks?
Inputs What inputs are required to carry out the activities	Measures of quantity and quality (eg equipment and job specifications).	The sources of information that will be used to verify that the right inputs have been procured and utilised. In practice, mainly project management records.	Prior conditions What conditions are necessary for inputs to be acquired and used?

Source: unit author

It is not easy at first to grasp the finer points of this approach from a written description. It is far better to take an actual example. The table in 3.1.1, above, shows a complete matrix for a project to provide secondary health care in a rural development context by the World Bank. It uses some different terminology than that presented above (eg 'performance indicators' rather than 'means of verification') which is demonstrative of the different approaches and language which organisations may use, though the essential components are the same. Note how the goal relates to the World Bank's Country Assistance Strategy (CAS).

In constructing the matrix, it is usual practice to show the goal at the top of the page and work down to inputs. It is, though, immaterial which way the matrix is drawn, so long as the logical sequence of thinking is always from inputs through activities to outputs, from outputs to purpose and from purpose to goal. It is this which comprises the means–ends relationship, and sets out the project logic. It is usually best to start preparing the Logframe by working vertically down the first column until this is complete, and then entering prior-conditions and assumptions from the bottom up. A series of iterations will then be needed to reach a final result.

3.1.2 A sample Logframe for the case of 'secondary health care'

Health: Secondary Health Care

Narrative summary	Performance indicators	Monitoring and evaluation	Assumptions/risk
CAS Goals (1) Improved health status of rural population	(1) Reduced incidence of endemic diseases by 5% annually for '93 to '99 (2) Mortality rate reduced to 120/1 000 by 2000 (3) Morbidity rate reduced to 100/1 000 by 2000	1.1.1 World Health Organisation Reports 1.2.1 World Health Organisation Reports 1.3.1 World Health Organisation Reports	**CAS Goal to Bank Mission** (1) Improved health increases workers productivity (2) Other social infrastructure projects achieve their CAS Goals
Project Development Objective The rural population uses improved secondary health care	1.1 Number of patients served by local hospitals increased by 20% 1.2 65% of the children in service areas are inoculated 1.3 70% of population in need of services use these services	1.1.1 Independent National Study 1.2.1 Independent National Study:MOH	**DO to CAS Goal** (1) Improved health increases workers productivity (2) Current level of food security is maintained

Outputs			Output to DO
(1) The quality of the health care infrastructure is improved	1.1 % of secondary health care centers with adequate qualified staff (doctors, nurses) to meet all shift needs	1.1.1 MOH check on health care centers	(1) Served population can pay minimum services' fees
	1.2 % of health care centers with laboratories and pharmacies to international standards	1.2.1 Review of labs and pharmacies in health care centers	
(2) The needs of the community in the area of health care services are reflected in the provision of services	2.1 % of health care needs met by skilled doctors, centers, and /or availability of relevant drugs	3.1.1 Review of needs against services offered	
	2.2 % of community involved in the process of determining the needs of the community	3.1.2 Review of participation in needs definition	
(3) The use of new skills in provision of health care is increased	4.1 % of health care workers receiving training who apply the skills on the job	4.1.1 Sampling of the system	
	% of the population using the centers who are satisfied with the quality of the care provided	4.1.2 Survey of users – sampling	
(5) The project is efficiently implemented	5.1 Supervision and financial requirements are met by the PMU in 100% of its duties	5.1.1 Supervision reports	
	5.2 90% of implementation milestones are achieved	5.2.1 Supervision reports	
	5.3 80% of performance indicators are tracked and provided to decision makers	5.2.2 Supervision reports	

Component activities			
INFRASTRUCTURE			
1.1 Determine the current state of the health care facilities	INFRASTRUCTURE $$$	Project Records	
1.2 Develop a plan to improve facilities along the lines of beds, pharmacy, labs, staff	COMMUNITY NEEDS $$$	Project Management Plans	
1.3 Update labs	SERVICE PROV. $$$$		
1.4 Build additional bedding and/or centers	PROJECT MNG $$$		
COMMUNITY NEEDS			
1.1 Develop a system for community participation			
1.2 Conduct a needs assessment in each region			
1.3 Integrate the community needs into the infrastructure plans			
SERVICE PROVISION			
1.1 Determine the level of skills needed for effective health care and a training plan			
1.2 Implement the training plan for nurses, doctors, and support staff			
1.3 Develop administrative procedures to determine the quality of care			
PROJECT MANAGEMENT			
4.1 Determine the skills of the PMU and identify weaknesses			
4.2 Provide training or support to fill knowledge gaps			
4.3 Provide necessary tools for staff in the areas of financial management, procurement, project management, and M&E			

Source: World Bank (2005) pp. 94–95.

In project formulation clarity of purpose is essential, project objectives must be clearly stated in a form that will allow specific targets to be defined if possible. Progress towards these targets should be objectively measurable. This will facilitate monitoring during implementation and both on-going and subsequent evaluation.

For a well formulated project the objectives will be immediately relevant to an expressed priority development need (often sectoral or sub-sectoral) and will be realistic and achievable given planned inputs and the proposed time scale. Problem Trees and Objectives Analysis can be used to develop the objective. The activities and outputs of the project will be only those that contribute directly to the achievement of the objectives. The project will have clearly defined limits. Its organisational structure, institutional setting and geographical boundaries will be clearly specified.

Clearly establishing a project's logic in this way has several advantages. The first is that it forces the project planner to tease out the inter-locking components of a project in a logical manner right from the start. In particular it shifts the emphasis from the inputs and outputs end of the logical sequence towards the objectives end. Too frequently it may be assumed that a tangible asset such as a computer facility will be self-evidently useful and need not be justified. But in means–ends analysis the facility itself is just an output, and one has to ask, 'why is this facility needed'? Then, not be content with the obvious answer 'to process data', but to go on to ask, 'what are the wider objectives that this computer facility is intended to serve'? These may be administrative, financial or political objectives that will contribute to broader social or economic development objectives.

The process that is described by the logical hierarchy of means and ends is made explicit, and hence the technical relationships that underlie it also become apparent and their feasibility can be checked. Basic errors in the technical specification of the project should thus be avoided. Clearly defined objectives are also essential for the process of project formulation, if the most cost-effective and appropriate technological choices are to be made.

Preparation of the Logframe also forces the project designers to identify systematically the risks inherent in the whole enterprise. The very act of doing this focuses the mind on those aspects of the project that lie outside the control of the project manager. This in turn leads naturally to consideration of whether there are any ways in which risks due to external influences can be minimised, and hence to improved project design. For example, other less risky methods to carry out certain activities could be chosen. Alternatively if certain actions are required by Government or another agency these can be made a prior-condition for the implementation of the project.

The record of these risks and prior-conditions is also an invaluable reminder of factors that need to be carefully monitored as the project proceeds.

Performance measures or 'objectively verifiable indicators' are a key part of the Logframe and should be identified and designed for each stage of the hierarchy. Targets should be set in terms of quality, quantity and time. They should be either quantifiable or qualitative and capable of being assessed. Performance measures are placed in the second column, whilst the means of, or sources of data, for verification are in the third column.

The Logframe can be an excellent communication device and can be used to build consensus amongst all parties, from policy-makers to beneficiaries, who are interested in the project. Initial preparation through workshops and brainstorming sessions can prove very creative and valuable.

If it is to work properly project logic needs to become an integral part of the project designer's habitual way of thinking - her or his 'intellectual baggage'. The planner has to start thinking in terms of the logical hierarchy from the moment when the project begins to take shape, and it is no use leaving it to the end of the project preparation process. Logical consistency is a characteristic of all good projects.

When applied properly the Logframe can bring out into the open those 'hidden' aspects of a project that are all too easily ignored or overlooked, because they raise awkward issues, or because they might prejudice the project's chances of being funded. The technique does call for intellectual honesty, some hard work and considerable imagination. Dedicated computer software is available to support this planning process and the subsequent preparation of matrices and reports but most planners prefer the accessibility, familiarity and commonality of widely used spreadsheet or word processing software.

A final word of caution is that the Logframe should be dynamic. It needs to be kept continually under review, and may have to be re-drawn many times during the lifetime of a project. If this is not done it could have the perverse effect of reducing that element of flexibility and responsiveness to changing needs that is the hallmark of good project management. This is especially true given the uncertainty inherent in rural development projects which depend on both people and local institutions.

3.2   Project design: details of the Logframe approach

The essential elements of a project are:

- objectives (goal and purpose)
- outputs
- activities
- inputs

Defining objectives

An objective is the aim or goal of a project, and describes the desired state which the project is expected to achieve/contribute to. It provides the reason for undertaking the project. A project will have at least two levels of objectives: a development goal or higher-level objective; and an immediate purpose or objective.

The goal will usually be at the sectoral or sub-sectoral level and should provide a clear development objective towards which the project is striving. For example, it may be a country's sectoral or sub-sectoral targets from its poverty reduction strategy paper, or emerge from a funder's country strategy paper. **The project will be expected to make a significant contribution to this objective, although not normally to achieve it entirely. The project purpose provides the specific objective that the management of the project will be expected to achieve.**

Be wary of the temptation to overstate the development objective in terms of sectoral or national goals (eg increase national agricultural productivity; eradicate rural poverty) or to be vague (eg protect the environment).

In defining a **goal**, make sure that:

- it provides adequate justification for the project

- its progress can be verified either quantitatively or qualitatively

- it is single-purpose, or has multiple purposes which are compatible

The project purpose should specify the changes or improvements that could be expected in the target group, organisation or region if the project is completed successfully and on time. The purpose should also state the magnitude of such changes and the time span in which they will be brought about. It is the formulation of the purpose that is of **most importance** to the project designers and subsequently to the managers.

In defining **project purpose**, make sure that:

- it states clearly the desired change and where this will take place

- it specifies the magnitude of the change to be achieved

- it indicates the timescale for the change

- its progress can be verified quantitatively

- if it conflicts with another purpose, priorities are indicated

The way in which the **purpose** contributes to the **goal objective** must be obvious. It may be helpful to introduce an **intermediate purpose** or **objective** in order to clarify the logical progress and connection.

The following example illustrates the use of such an intermediate objective in a three year research project.

Goal: Rice production increased by 10% in Alpha province by year 10 from a base line of X 000 tons in year 0.

Intermediate objective: Research results applied by 400 contact farmers in Alpha province by year 4.

Purpose: Research results incorporated by the Alphan extension service into an extension package by the end of year 3 (to be achieved at project completion or soon after).

It is conceivable that two levels of intermediate objective might be useful for some projects. Note that the number of levels is not critical, but it is the logical sequence that must be correct. Objectives at each level must be clearly capable of contributing to the achievement of the objectives at the next highest level.

Read the examples of objectives in 3.2.1, below.

3.2.1 Examples of objectives

Goals or development objectives.

− The income from apple-growing of 1000 farmers in X region, increased by 25% by year 2015, compared with their 2007 income of US $Y per year from the same source.

− A fully operational system for food security surveillance established by December 2012.

− A biogas network fully established by 2015 with active biogas research and training programmes in each of eight network countries.

Purpose or immediate objectives.

− The government capability to construct and bring to full operation annually, 200 aquaculture ponds of one hectare each, established by 2011.

− The capability of the Central Agricultural Research Institute to conduct at least at the present level of activity, applied research on maize, sorghum and wheat, independent of external assistance, attained by 2015.

Source: unit author

A **project purpose** should thus be a very specific statement, the achievement of which can be verified. Note that specification of the magnitude of change and the timescale establishes a **target** for achievement.

A **target** is a quantitative statement of results and a planned performance standard by which actual performance may be subsequently compared and measured. The specification of targets in project formulation is useful because it forces the project designers to think in terms of physical quantities, time spans and costs. It enables an assessment to be made of how possible the project is and how realistic the proposals of project achievements are in terms of the resources requested. It also assists in the identification of **indicators** used to measure progress towards targets in the monitoring and evaluation of a project. A good project design should even stipulate the rate of achievement or progress over time, for example, by specifying annual targets.

When there is a trade-off between two competing objectives, it should be clearly identified and an order of priority established.

Identification of the target group

The target group or primary stakeholders will have been agreed upon within the initial stakeholder analysis. This needs to be carefully articulated within the Logframe. The nature of the target beneficiary group will influence the physical requirements for the project, the choice of technology and the organisational and institutional arrangements that will be most appropriate. Failure to take sufficient account of this is a reason why many projects under-achieve.

Precise articulation of the primary stakeholders requires more than a broad descriptive term such as the 'rural poor', the 'disadvantaged' or 'small farmers'. The target group should be identified by reference to the following characteristics, specified for a particular geographical area, for example, a region or district:

- **status**, for example, in terms of income, wellbeing, level of nutrition, level of education, or land tenure. (Indicators of status should be selected which are easy to use and appropriate. For example, while income or nutrition levels are very appropriate they are not readily usable, and land and livestock holdings may be easier).

- **occupation**, for example, landowners with less than X hectares, landless labourers, farmers engaged in special crop or livestock activities, fishermen with boats of less than x capacity.

- **access to services**, for example, farmers with no access to institutional credit, input supply or extension advice.

- **gender**

- **class or caste**

- **ethnic status**

For example:

Male- and female-headed, landless households, who supply labour to irrigated farms in the rice growing zones of Sindh province; not, the landless poor in Pakistan.

Project outputs

Outputs are the result of activities completed by the project with the use of inputs. They are a pre-condition for the subsequent achievement of purposes and goals. Production of outputs should be managed by the project and less influenced by external factors that the project management cannot directly control. As most projects have more than one output, their sequential ordering is essential, because the output of one activity is likely to be required for the production of another output.

The outputs of a project need to be stated in such a way that:

- their realisation can be identified, in terms of quantity, quality, time and place

- as for objectives, a target is specified for the magnitude of output to be produced and the timescale for this

- it is clear if a certain output is a prerequisite for other outputs

- all outputs necessary for achieving the project purpose are listed and all outputs clearly relate to the purpose

- they are feasible within the resources available

By definition outputs are separate from objectives. Unfortunately confusion between them is a common design error. Outputs are also commonly confused with activities. Remember that an output is the result of an action or activity.

For example,

- the **output** of a training activity is trained people

- the **output** of a research activity is the research results

- research conducted on inter-cropping is an **activity**

- research findings on inter-cropping are an **output**

Activities

An activity is the action necessary to transform given inputs into planned outputs over a specified period of time. Each activity should have at least one output, which may contribute to a larger output.

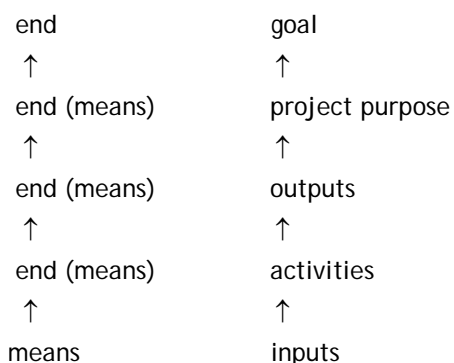Activities need to be stated in such a way that:

- their implementation can be verified in terms of quantity, time and place

- they are stated in terms of actions being undertaken rather than as completed outputs

- all key activities necessary for achieving the outputs are listed

- there are no activities listed whose outcome cannot be traced upwards to the output level

- it is clear who is responsible for carrying out the activity

A row for activities is not always included in the logical framework matrix, some organisations and planners preferring to use a matrix of just four rows and four columns. However, consideration of activities is inherent in assessing the logical progression from inputs to outputs, and making these explicit in the matrix will usually be helpful.

3.3 The vertical logic: means-ends relationships

There is a logical hierarchy of **means–ends** relationships between the various project elements; progress at each level is a precondition for moving to the higher level. The Box below illustrates the causal relationships which provide the conceptual linkages between the project elements. Establishing clearly the means and ends, helps to design a sound and logical project.

3.3.1 Means—end chain equals logical project design

end	goal
↑	↑
end (means)	project purpose
↑	↑
end (means)	outputs
↑	↑
end (means)	activities
↑	↑
means	inputs

Thus:

IF inputs are provided, THEN activities can take place.

IF activities are successfully completed, THEN planned outputs should result.

IF outputs are used as intended, THEN the purpose (effect) should be realised.

IF the immediate objective is achieved, THEN it should contribute to the realisation of the goal (impact).

Source: unit author

To conclude this explanation another real project example is given. The Logframe for an extension training project is shown in the figure in 3.3.2.

Notice that:

- for each objective, there is a statement of the desired state, a physical target and a timescale

- each lower level describes the MEANS to the next level which is its ENDS, and its justification

- only outputs, activities and inputs are within the 'manageable interest' of the project, ie under the direct control of the project manager

- if the outputs are produced, the purpose will be achieved at or soon after project completion

- the Logframe as shown here takes no account of external factors or conditions

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3.3.2 Narrative summary: an extension training project

Goal

Extension messages reaching and being implemented by 250 000 farmers in region A by 2015.

Purpose

Extension service for region A strengthened by 450 trained nationals by 2015 (increased from 143 employed by the Ministry of Agriculture as at December 2007).

Outputs

500 high school graduates trained by 2015 through five agricultural certificate courses of one year each.

Activities

Develop and test curriculum, 2009—2015.

Train 100 high school graduates in agricultural extension and crop production techniques in 2008, 2009, 2010, 2011, in 4 short residential courses of ten weeks each.

Inputs

A team of two teachers and one administrator

Stationery for courses

Venues in rural locations in region A

Vehicle/transport for team

Source: unit author

3.4 The horizontal logic

The horizontal logic of the Logframe is the measurement of the results of a project through objectively verifiable indicators (OVIs) and means of verification or sources of data. The expected results to be obtained at each level of the vertical logical are specified within the objectively verifiable indicators, for example:

3.4.1 Indicators

	Objectively verifiable indicators/performance indicators
Goal	Long-term indicators, rarely collected by the project
Purpose	End of project indicators showing change/benefits to target population
Output	Deliverables
Activities	Measures performance against schedule and budget

Source: unit author

All indicators should be:

- measurable ie specify quantities, qualities, and timing

- sensitive to change

- easy to collect

- achievable

Means of verification

The means of verification (MoV) sets out the sources of data that will be used to provide the OVIs. They establish in advance how the criteria for success will be verified. There should be one MoV per OVI.

They can comprise types of data (eg farmer surveys, independent impact assessment), sources of information (eg national, local statistics) and data collection techniques (eg participatory rural appraisal, geographical information systems).

A few examples:

Goal:

OVI – Average household income in X province is 10% higher in 2012 than baseline in 2007

MoV – National statistics

Purpose Level:

OVI – Average crop yields in X province are 20% higher in 2010 than in baseline 2006

MoV - survey of project area

Output Level:

OVI – At least X farmer groups show sufficient skills for management of X crops

MoV – sample farmer assessment

Activity Level:

OVI – Capacity-building workshops held for 50 farmers in X province

MoV – workshop reports

3.5 Assumptions and risks: the external project environment

The 'IF… THEN …' logic of the project hierarchy also depends on external events or conditions. There is a basic premise here that the achievements and conditions specified for each level in the means–ends chain ought to be not only **necessary**, but also **sufficient** to cause the higher level to be attained. Each causal linkage (between inputs, activities, outputs, etc) must be planned so as to ensure that at any given level, the necessary conditions not only exist, but are enough to achieve the next level. Usually the linkage is not strong enough (ie the sufficiency or completeness does not occur) unless the external environment also influences the project in the desired direction and risks are avoided.

Development actions in the agricultural sector have a multi-disciplinary character with inter-actions among many key variables, and linkages with activities in other sectors of the economy. This is particularly true of rural development projects with multiple objectives. As it is rarely feasible to tackle all the key variables in a single project, no such project, not even a multi-disciplinary or integrated rural development project can be treated in isolation.

For example, the trained extensionists in the project above (3.3.2) will not be able to produce an impact at the farm level unless other essential inputs and services (seeds, fertilisers, pesticides, credit, storage, processing, markets, etc) are available to farmers to adopt improved farming practices and thus their yields. It is neither possible, nor essential, that all these inputs and services be specifically included in the training project, but project success (impact) depends on them being made simultaneously available. Some projects fail, because the designers failed to check details about the project environment and underestimated the risks of particular development approaches. In some cases prior conditions for project success were not identified during formulation or checked on during implementation.

The linkages underlying the logic of a project are subject to a variety of risks due to the inaccuracy of information, the uncertainty of the project environment, and/or the unpredicted reactions of the target group. The level of uncertainty involved increases, the higher the level in the hierarchy.

The project designers should make every effort to obtain the information necessary to design a project and be confident of its implementability and success. Inevitably, however, the collection of information is constrained by the time and resources available, and in the absence of definitive data the project designers will have to make certain assumptions. Each time an assumption is made a risk that the assumption will not hold is introduced, and hence a risk that the performance of the project will be compromised.

In the formulation of a project there will be four main sets of risks and it is important to distinguish these.

(1) **Inherent risks:** it is assumed that inputs and activities will lead to outputs, and that outputs will lead to achievement of purpose which will contribute to the goal. These assumptions constitute the project hypothesis or project logic and there should be no need to state them explicitly as the causal relationships between means and ends should be apparent. If there is any risk or uncertainty about any of the links in the chain then further investigation is required to verify the technical relationship involved, probably through consultation with relevant experts.

Certain risks will remain, for example, the risk that it is not possible for a research programme to breed a certain disease resistant variety within a specified time span given available inputs.

This type of risk will always remain to some extent. We can never be certain that the research programme will produce the desired results, but with relevant expertise informed judgements can be made. Risks of this type are not normally specified in the Logframe.

(2) **Universal risks:** for example, the risk of war, rare extreme climatic events or other natural disasters. It is unlikely that such risks (or assumptions of non-occurrence) need be entered in the Logframe. This does not mean that such possibilities should be ignored. The reverse is true. They must be taken account of in project design and may mean the rejection of the project, or at least its postponement until the situation improves.

(3) **Internal risks:** there are also risks relating to the inputs and activities under the control of management. Examples include:

– delays in the supply of equipment

– delays in the assignment of project staff

– project staff are not suitably qualified, or motivated

– delay in the completion of an activity, for example, completion of survey work because of use of key staff for other tasks

In these cases, management is clearly responsible for ensuring that materials are ordered with reasonable allowance for shipment delays, that adequately qualified project staff are recruited on time, that the staff are well motivated and that competing tasks are properly scheduled. The project management should be able to exert some influence so as to reduce these risks. Provision should be made in the project design to ensure that management can perform its functions satisfactorily without such risks, and they are thus not normally specified in the Logframe. As with 'inherent risks' relevant technical expertise is needed to assess the design of the project and whether the project logic is sound and achievable given the resources provided and the management capacity that exists.

(4) **External risks:** factors upon which the success of the project depends, but which are largely outside the control of project management. **This is the important group of risks for which assumptions shown in the Logframe may be necessary.**

For example, most agricultural development projects aimed at increasing farm incomes may depend on assumptions about the construction of roads,

prevailing price levels, markets, credit facilities, farm inputs, etc. The project designers could verify that roads do or do not exist, what price levels prevail, that markets currently exist, that credit and inputs are available, etc, and no risk would then be involved. These factors become risks when agencies external to project management are responsible for them, and it must be assumed that they will satisfactorily fulfil that responsibility.

For example, when legislation has been promised to remove price controls or perhaps introduce price guarantees, or claims have been made that following economic liberalisation the private sector can provide marketing services in a remote area, or that a viable rural credit institution has been established.

In each case there is a risk of non-fulfilment and hence need for an assumption that should be made explicit in the Logframe.

Introduction of such risk identification in the earliest stages of project identification and formulation will rapidly screen out infeasible project concepts.

For example, a project that requires a rural credit institution that the government has no intention of setting up can be rejected out of hand, unless resources are available to make the credit institution an activity of the project itself.

Project design should be an iterative process that seeks to determine the optimal form for a particular project given resource constraints. In particular, the identification of risks may force the designers to rethink all or part of an original design or concept in order to remove the risk or reduce it to an acceptable level.

The Assumptions/Risks column in the Logframe matrix is of value for two reasons:

- to prompt iterative improvement of the project design

- to ensure that any remaining risks are carefully monitored

Thus having identified a risk during preparation of the Logframe, the response will be to:

- reject the project, because the risk is sufficient to call into question the viability of the project and cannot be realistically removed or reduced through re-design

- lower or eliminate the risk through re-design or by adopting a completely different approach

- or for risks that are acceptable at the time of project preparation, to state them as an assumption in the Logframe and subsequent project documents and to monitor them through the project's life

It is important to note that in practice final Logframes and project documents should specify **few** risks. Risks may have been listed during the formulation process but most, if not all of these, should have been eliminated in the final design. A project subject to a large number of highly probable and significant risks is doomed from inception and requires no further consideration.

In summary, risks occur when:

- key events, actions or decisions, upon which project success depends, are subject to delay or do not materialise.

They should be identified during the project formulation process and their articulation:

- leads to rejection of non-viable projects or redesign of the project to eliminate the risk

- makes risks explicit and ensures they are monitored during implementation, and that complementary action by other agencies is forthcoming

- facilitates the assessment of risk, helping judgement of the project's chances of success during final appraisal

Section Summary

- This section has set out the importance of developing a logically consistent project.

- It explained the logical framework analysis and described to the various steps in developing one, defining objectives, outputs, activities and inputs. It has also described the core monitoring and evaluation elements of the Logframe. The risks and assumptions of projects were discussed in terms of the four main risks that can affect a project.

Section 3 Self Assessment Questions

Question 4

What are some of the advantages of using the Logframe?

Question 5

What are some of the challenges of using the Logframe?

Question 6

Look at the examples of activities from three different projects below. Enter in the space what their resulting outputs would be.

(a) The construction of 10 village tubewells in Y region in project year 2.

Output: _____.

(b) Research conducted over three years on a disease resistant variety of chickpeas.

Output: _____.

(c) A participatory training course for 30 extension workers drawn from the crops department in Z region.

Output: _____.

4.0　ANALYSIS OF FACTORS AFFECTING SUSTAINABILITY

Section Overview

This section reviews the use of SWOT analysis as a tool to assess the internal and external factors that potentially affect a proposed project and hence its performance and sustainability.

Section Learning Outcome

By the end of this section, students should be able to:

- have a tool which can be used to assess the internal and external factors which may affect the sustainability of a project

4.1　SWOT analysis and project sustainability

For inclusion in logical framework analysis or more generally as part of project identification and formulation factors affecting project sustainability should be identified. A project can be said to be sustainable when it continues to deliver benefits to the project beneficiaries for an extended period after the main part of the external assistance has been completed.

One tool which can be used to help assess the internal and external factors directly affecting the project and which ultimately determine its sustainability is SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis.

SWOT analysis

SWOT stands for Strengths, Weaknesses, Opportunities and Threats, which are the themes under which factors are catalogued using this analytical tool. SWOT analysis involves brainstorming sessions with concerned participants and can be applied equally well to a project proposal or to the ultimate implementation of the project. It is a widely used technique in business and marketing.

Participants are required to list quickly on display boards all their ideas (no matter how idiosyncratic) concerning the proposal being reviewed, under each of the four themes above. All ideas are then reviewed and consensus reached on which are critical to the success of the project. The resultant lists help clarify thoughts on strategies for development or for improved management.

The results are best displayed on a whiteboard or flipchart divided into a grid of four squares, to represent the SWOT headings. The group should not be too large for discussion, and the members should be given time to think through their own contributions, either individually or in small groups of two or three people. Given the need to consult widely for many development projects, it may be appropriate to conduct more than one SWOT, with groups representing different stakeholders.

Staff implementing a pilot project in Pakistan that aims to form Water User Associations that can take over management of an irrigation canal, produced the following SWOT for these Associations.

4.1.1 SWOT analysis for irrigation water user associations in Pakistan

STRENGTHS	WEAKNESSES
− some ability to act in unison to negotiate with government and to resolve disputes	− poor condition of the infrastructure with costly repair needs
− some mutual trust as a basis for collective action	− continuing dependence on government for major works
− intimate knowledge of the irrigation system	− lack of data on system performance
− ability to mobilise labour and capital	− limited engineering knowledge or access to technical guidance
− ability to monitor all water users	− highly politicised and unequal social structure
− strong incentives to improve the performance of the system	− disruptive competition for Association leadership
	− lack of self-confidence and local models of success to follow
	− legal status not yet defined and protected
OPPORTUNITIES	THREATS
− 'window of opportunity' for reform exists in the political and economic environment	− perceptions among members that water charges will rise to unaffordable levels
− for associations to become multi-functional, bringing wider benefits and sources of revenue	− non-cooperation or even adverse intervention by 'feudal' landlords
− existence of supportive pilot project	− resistance to change in the irrigation department
− availability of some donor support	− continued corruption and need for payment of bribes to ensure supply
− wider policy reforms improving producer prices and hence incentives	

Source: unit author

Section Summary

• This section has set out the importance of assessing the sustainability of a project from the outset.

• It has described SWOT analysis as a tool to use to analyse the various factors (strengths, weaknesses, opportunities, and threats) which may affect the sustainability of a project.

Section 4 Self Assessment Questions

Question 7

True or false?

SWOT analysis can only be used to assess internal factors that affect a project.

Question 8

In the acronym for SWOT analysis the letters stand for (tick on the correct option):

Strengths	Strategies
Worries	Weaknesses
Opportunities	Operations
Tactics	Threats

5.0 IMPLEMENTATION PLANNING — WORK PLANS

Section Overview

An important but sometimes neglected part of project design and planning is the planning of implementation itself. This section briefly reviews key issues and approaches for the planning of work plans or implementation schedules.

Section Learning Outcome

By the end of this section, students should be able to:

- create a realistic work plan for a project

5.1 Preparing work plans

Work plans enable the project designers to see if, with the planned resources, it is possible to complete all the project activities and produce the outputs in the time allocated. A work plan will draw attention to any problems with scheduling, for example:

- too many activities taking place at one time competing for resources such as labour, equipment, and management time

- lack of co-ordination of activities with for example the cropping season or policy processes

- delays in procurement of inputs or non-production of outputs in time for subsequent activities that require them

- over-optimistic assumptions about possible achievement rates

Work planning is also an integral part of project preparation, not just a final scheduling exercise. Emergence of the problems listed above should lead to modification of the project design. Preparation is an iterative process and frequent revisions of both the project design and work plan may be necessary before the final complete design is reached. The work plan also provides a basis on which to monitor the overall progress of the project and eventually to evaluate it.

Sources of error in preparing work plans tend to result in underestimates of duration, ie there are virtually no compensating errors.

These biases include the following.

- Total omission of essential tasks.

- Failure to allow for interdependence of tasks ie correct sequencing. For example, you cannot start training until training materials are largely completed.

- Failure to allow for resource competition between tasks. For example, specialist skilled workers or vehicles may be required for more than one operation in the same period.

- Failure to allow for seasonal constraints (agricultural production).

- Failure to identify and allow for risks and external factors that may cause delay.

- Over-optimism by planners, especially in the delivery of inputs and failure to allow adequate time for project start-up.

- Pressures to assume early achievement of benefits in order to show results and project high economic and financial internal rates of return.

At the design stage, a work plan should include a schedule showing for each significant activity and its output

- the target starting and completion dates, ie the planned time frame

- who will be responsible for the activity

- who will carry out the activity and what the key inputs required are

- any preconditions for activities including the production of another output

This schedule may be best presented in the form of a time-scaled bar chart. Bar charts have a number of advantages for the presentation of project schedules. Most important is that, for planning, scheduling and, after implementation starts, for the progress made, information is graphically recorded on a single sheet of paper. It is a very simple and effective tool for showing the component activities of the project and its schedule to all levels of management concerned, and can focus attention on potential problem areas. A simplified example is shown in 5.1.1, below.

It will not always be desirable to set out a detailed work plan for the whole project at the design stage. Detailed annual work plans may only be established on the basis of yearly inputs made available to the project and the degree of progress achieved in the previous year. The realities of project work preclude precise scheduling any more ambitious than this. However, regarding project start up, work plans should be precise. Several lessons can be drawn, for example, from experience with project implementation in the agricultural sector.

- Specialist consultants should not be brought in before counterpart and supporting services are available; similarly, equipment should not be delivered before buildings and/or stores are ready.

- The development of technological packages must precede effective extension work; training packages precede training; survey and review of existing situation precede research, etc.

- Plans should be co-ordinated with seasons. For example, those that require a local labour commitment should not be scheduled at harvest time.

- Impact evaluations should not be scheduled before some manifestations of impact can be measured.

- Adequate time must be allowed for project start-up.

5.1.1 Example format for a work plan presented as a time-scaled bar chart

Project X Work plan   Period _____

Activities and (responsibility)	Timescale	Comments and milestones
	Year 1 **Year 2** J F M A M J J A S O N D J F M A M J J A S O N D	
Survey design and pilot testing **(M&E Officer)**	X	
Survey of drinking water in District Y **(Survey Unit)**	X X X X X X[1]	[1]Survey must end by June 30, before rains
Data entry and cleaning **(Survey Unit)**	X X X X X[2]	[2]Work completed on September 30
Preparation of data analysis plan **(M&E Officer)**	X	
Data analysis and report writing **(M&E Officer)**	X X X[3]	[3]Submission of report before next phase of implementation by December 23
Resource allocation		
Vehicle	************************* *	Survey of child literacy in District X must be completed first so that vehicle and enumerators are available.
Enumerator team (4 persons)	************************* *	
Data entry team (2 persons)	*** ***********	
Supervisor	*******************************	
M&E Officer	* ** ** *****	

Source: unit author

✍ Can you add similar examples to this list from your own experience?

✍ As a further optional exercise, try preparing a work plan for a small project or set of tasks with which you are to be involved in your job. If you do not have a suitable example at present, try it for a familiar task, such as preparing for an outdoor barbecue or tidying up the house and garden.

Note that the preparation of work plans and then budgets can be integrated with the use of logical framework analysis. Once the Logframe is complete the activities from the narrative summary column can be copied into the work plan format. The duration of each activity must be estimated, and their logical sequence determined. This must take into account any interdependencies between activities and results.

With the work plan prepared, the timing of inputs and hence costs can be specified. The format in which inputs and costs (style of budgets) should be presented and summarised will depend on the procedures of the organisation for whom it is being prepared – eg donor or partner country, but it can be seen that an integrated approach flowing from problem analysis, through the Logframe to preparation of detailed work plans and budgets will bring a more integrated and systematic approach to planning and implementation of the project cycle.

Section Summary

- This section has focused upon project planning, in particular the creation of work plans.

- It has explained how to create a realistic work plan for a project taking account the resources available. It has also highlighted some of the common errors in developing work plans.

Section 5 Self Assessment Questions

Q uestion 9

At the design stage, what four pieces of key information should a work plan include?

Q uestion 10

Work plans that are prepared during project preparation and prior to implementation can highlight potential design problems. List four possible examples.

UNIT SUMMARY

This unit has provided an overview of the identification, design and preparation of the project cycle. These processes are iterative, so that the project concept can continually be refined and improved.

- Ideas for projects may arise from many sources. It is useful to ensure that projects are linked in order to identify needs such as those that arise from a country's poverty reduction strategy paper. It is important to think in terms of the resources and opportunities which are available, and identify constraints which need to be removed.

- Project identification must be based on a good understanding of local stakeholders, their priorities and the context and situation in which they are living. For grassroots projects, participation is vital and all of the project identification/planning tools discussed in this unit can be used in a participatory way.

- There is a logical flow and process to project formulation and design, and various tools to help at each step of the process from understanding who the stakeholders or clients are and the main problem which an intervention aims to address, to setting objectives, analysing alternatives, and creating a logically consistent project. The inclusion of appropriate stakeholders at each of these steps adds to the 'ownership' and 'buy-in' of stakeholders to the project.

- Project preparation involves designing the project in more detail, which often requires further information gathering and feasibility studies. Planning may be more or less detailed, depending on the type of project. Many project planners now recognise that there is little point in preparing extremely detailed plans in advance if projects are experimental and many known or unanticipated factors are likely to emerge during implementation. Even when projects are not experimental, they need to be adapted to changes in the external environment eg the market prices of crops. There should be a certain amount of flexibility in project design.

UNIT SELF ASSESSMENT QUESTIONS

Q uestion 1

How do stakeholder analysis, problem trees, and objectives analysis relate to Logframes?

Q uestion 2

What is the vertical logic or means–ends logic of the Logframe?

Question 3

Four of the squares are in the wrong place – can you spot which ones they are?

Narrative summary	Indicators of achievement	Means of verification	Assumptions
Goal What is the reason for the project, the broader development objective towards which the efforts of the project are directed? (Why is the project undertaken? Who are the intended beneficiaries? What impact is being sought?)	What are the quantitative measures or qualitative judgments, to assess whether the goal has been achieved?	What sources of information will be used to show that the goal has been achieved?	**For sustainability**: What conditions external to the project are necessary for the delivery of the intended benefits or impact to continue for an extended period?
Outputs/results What outputs (type, quality and number) will need to be produced (by activities undertaken with inputs provided) in order for the project purpose to be achieved?	What are the quantitative measures or qualitative judgements, to assess whether the project purpose has been achieved?	What sources of information will be used to show that the project purpose has been achieved?	**Purpose to goal**: What conditions external to the project are necessary for achievement of purpose to contribute to the goal? What risks need to be monitored during implementation?
Project purpose What specific effect is the project to achieve as a direct result of the project outputs? If the project is completed successfully, what improvements or changes could be expected in the group, organisation or area towards which the project is immediately directed?	The type, quality and number of outputs to be produced by certain dates	The sources of information that will be used to verify that outputs have been achieved	**Activities to outputs**: What external factors are necessary for activities to generate planned outputs? What risks?
Activities What activities need to be undertaken by the project in order to produce the desired outputs?	The specific activities to be undertaken by certain dates	The sources of information that will be used to verify that outputs have been achieved	**Outputs to purpose:** What factors outside the control of project management are necessary for progress from outputs to purpose? What risks?

Question 4

Choose one of the two exercises that follow depending on whether you have a better technical knowledge of agricultural or forest production. You may, of course, attempt both if you wish.

(a) Alternatives for maize production

Identify and list alternative project approaches that could increase maize production by 20% in a typical semi-arid region of a developing country.

Assume yields per acre are currently about two-thirds of the average achieved in semi-arid sub-Saharan African countries. Although the region has some surplus unskilled labour there is a shortage of labour and draft power for land preparation. Timeliness for the planting for the commencement of rains is critical, but many farmers plant too late because of the land preparation constraints. The price of maize is controlled by Government and is only sufficient to cover the farmer's costs and provide a low income. Prices are normally set with the urban markets willingness to pay very much in mind. Reform of this pricing system in the near future is likely in response to fiscal and macroeconomic pressures. Farmers do not always find it easy to sell maize and receive a low proportion of the final retail price. Co-operatives, marketing projects, improved storage facilities and roads may be appropriate developments. Though little research relevant to the problems of the region is currently being conducted within the country, technological improvements developed for similar areas abroad may be appropriate. Rights to cultivate land are based on traditional communal systems of land tenure, though such systems are threatened by the pressures of a rapidly increasing population density and rural-urban migration, particularly by young men. Some instances of 'land grabbing' by large landowners and merchants have taken place.

The target area for the first phase of any project is a small river valley in the foothills of an upland region. It has approximately 5000 hectares of maize cultivation and approximately 8000 farm households. Pressure on land is increasing but there is little other land available which is suitable for cultivation. Some farmers are planting maize on the slopes of the foothills but this is leading to rapid and serious soil erosion.

You may complete this exercise simply by identifying and considering possible alternative means, or through the use of problem and objective trees.

Note that maize production is a function of both yields per hectare and area planted, and that approaches to increase production could be disaggregated by considering the group of factors that contribute to, or constrain each of these. (There is, however, limited potential to increase area cultivated.) These factors include the price of maize and inputs compared with other crops, the availability of inputs including labour and machinery, the technical knowledge of farmers, the existence of improved production technology, and climatic and other natural factors. The focal development problem to be addressed is 'the low level of production in the project area'?

(b) Alternatives for alleviating fuel wood scarcity

Identify and list alternative project approaches that could alleviate increasing scarcity of fuel wood.

Description of the problem area

The forests of the country are increasingly under pressure from the combined effects of rising human and livestock populations. This has led over the years to a shrinking forest resource base at an estimated deforestation and forest degradation rate of roughly 2% per annum. Heavy over-cutting, frequent fires and overgrazing are recognised as severe factors causing this process. It is now reaching the point where serious difficulties are encountered in meeting the basic needs of people for goods and services from the forests.

The region of concern consists of fertile plains making up 17% of the total land area of the country, but inhabited by 44% of the total population. The population growth rate is as high as 4.1% per year. Despite a high population density the area is geographically remote and served by a very poor level of infrastructure. Only 10% of the land area of these plains remains forested.

The pressure on forest resources is expected to intensify as human and livestock populations continue to increase. Over 85% of the total wood consumed is for domestic energy. According to recent estimates the fuel wood deficit of the region will grow from 1.8 million tonnes in 1990 to 2.9 million tonnes by the year 2000. Similarly the timber deficit will grow from the present 0.25 million cubic metres to 1.1 million cubic metres by the year 2000. There are already fodder deficits in the area where more than 80% of the nation's livestock are raised.

The population of the plains is approximately 5 million people. To this must be added an almost equal number of largely free-ranging livestock. Demand for fuel wood and for fodder and litter requirements have to be met from some half million hectares of natural forests and a limited number of trees on private and farmlands.

Due to fuel wood shortages, agricultural residues and cow dung which would otherwise have gone to increase soil fertility (and agricultural yields) are increasingly used for burning, thereby adversely affecting livelihoods. Energy inefficient cooking stoves are widely used.

There is good awareness amongst the local population for community forestry and excellent potential for tree growth in the fertile plains, but a lack of an overall land-use management plan and related strategy for community and private forestry development. There is poor or inadequate forest and tree resource management in terms of quality and quantity to meet basic needs, though there is good potential for any saleable surplus. Organised and trained forestry user-groups are few, with limited participatory approaches and as yet no benefit-sharing mechanisms are in place. There is a lack of trained staff in government agencies to undertake training and extension activities.

Given the focal problem of 'an increasing deficit between the demand for and supply of fuel wood in the plains area' identify alternative means of addressing this problem.

KEY TERMS AND CONCEPTS

Logframe   the matrix completed for logical framework analysis

stakeholder   individuals, groups or organisations who have an interest or stake in a
                project

SWOT   SWOT stands for Strengths, Weaknesses, Opportunities and Threats,
analysis   which are the themes under which factors are catalogued using this
                analytical tool