The Logical Framework Approach

Guidelines

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The material contained in these Guidelines has been developed over a number of years during the conduct of short-course training in the Logframe, and includes (most recently) material prepared as part of AusAID's project management Guidelines.

February 1999

Logical Framework Guidelines

The Logical Framework Approach

1. Introduction

The Logical Framework Approach is an 'aid to thinking', not a substitute for creative analysis. Testing of innovative new ways in which to use the analytical framework provided by LFA is encouraged.

The preparation of a Logframe matrix is required by many aid donors as part of their project design procedures. These Guidelines on the Logical Framework Approach are therefore provided as a reference for officers and consultants involved in project preparation, with the aim of supporting informed (and more consistent) application of this useful analytical and presentational tool.

2. Overview

2.1 What is the Logical Framework Approach?

LFA is an analytical, presentational and management tool which can help planners and managers:

- analyse the existing situation during project preparation;
- establish a logical hierarchy of means by which objectives will be reached;
- identify potential risks;
- establish how outputs and outcomes might best be monitored and evaluated; and
- present a summary of the project in a standard format.

A distinction is usefully made between what is known as the Logical Framework Approach (LFA) and the Logical Framework Matrix. The **approach** involves problem analysis, stakeholder analysis, developing a hierarchy of objectives and selecting a preferred implementation strategy. The product of this analytical approach is the **matrix** (the Logframe), which summarises what the project intends to do and how, what the key assumptions are, and how outputs and outcomes will be monitored and evaluated**.**

The matrix structure is shown in Figure 1, together with a brief description of the information that the matrix contains.

2.2 The history of LFA

LFA was first formally adopted as a planning tool for overseas development activities by USAID in the early 1970s. Its origins can be traced back to private sector management theory, such as the 'management by objectives' approach which initially became popular in the 1960s.

LFA has since been adopted, and adapted, as a planning and management tool by a large number of agencies involved in providing development assistance. These include the British DFID, Canada's CIDA, the OECD Expert Group on Aid

Evaluation, the International Service for National Agricultural Research (ISNAR), Australia's AusAID and Germany's GTZ. AusAID has been using LFA as a formal part of its activity cycle management procedures since the mid-1980s.

While it is not without its critics, LFA has proved popular and its use continues to expand into new agencies. It helps to provide a standardised summary of the project and its logic which can be used across the agency.

Figure 1 – Logframe Matrix structure

Project Description	Indicators	Means of Verification	Assumptions
Goal: The broader (national, sectoral of program level) development impact to which the project contributes	Measures of the extent to which a contribution to the goal has been made (used during evaluation)	Sources of information and methods used to collect and report it	
Purpose: The development outcome expected at the end of the project to which all components will contribute	Conditions at the end of the project indicating that the Purpose has been achieved (used for project completion and evaluation)	Sources of information and methods used to collect and report it	Assumptions concerning the purpose/goal linkage
Component Objectives: The specific outcome of each project component, achieved as the result of delivering specific outputs	Measures of the extent to which component objectives have been achieved (used during review & evaluation)	Sources of information and methods used to collect and report it	Assumptions concerning the component objective/purpose linkage
Outputs: The direct measurable results (goods and services) of the project which are largely under project management's control	Measures of the quantity and quality of outputs and the timing of their delivery (used during monitoring and review)	Sources of information and methods used to collect and report it	Assumptions concerning the output/component objective linkage
Activities: The tasks carried out to implement the project and deliver the identified outputs	Implementation/work program targets (used during monitoring)	Sources of information and methods used to collect and report it	Assumptions concerning the activity/output linkage

2.3 When should LFA be used?

LFA can be used throughout the activity management cycle in:

- **identifying** and assessing development proposals;
- **preparing** the project design in a systematic and logical way;
- **appraising** project designs;
- **implementing** approved projects; and

- **monitoring and evaluating** project progress and performance.

LFA is best started early in the activity cycle, but the same analytical tools can nevertheless be used to help review and restructure ongoing projects which have not previously been designed using LFA principles. It is an 'aid to thinking' which has widespread and flexible application.

2.4 Who should be involved?

Project planning and management should always be approached as a team task. This requires that adequate opportunity be given to colleagues and key stakeholders to provide input to the process and product of LFA. This can be supported by:

- taking time to explain the principles of LFA and clarifying the terminology used;
- integrating effective team work and adult learning methods into meetings with stakeholder groups; and
- ensuring that stakeholder groups are involved in the initial situation/problem analysis.

LFA is not, however, a tool that all community members should necessarily be required to understand or use. While 'logical' in concept, its effective application poses many challenges, even to the experienced user.

3. Analysing the situation

Prior to beginning work on project design and the construction of a Logframe matrix there is a need to undertake a structured analysis of the existing situation. LFA incorporates four main steps to help ***guide*** this process, namely:

- Problem analysis;
- Stakeholder analysis;
- Objectives analysis; and
- Selection of a preferred implementation strategy.

Each step is described further below.

3.1 Problem analysis and the problem tree

3.1.1 Overview

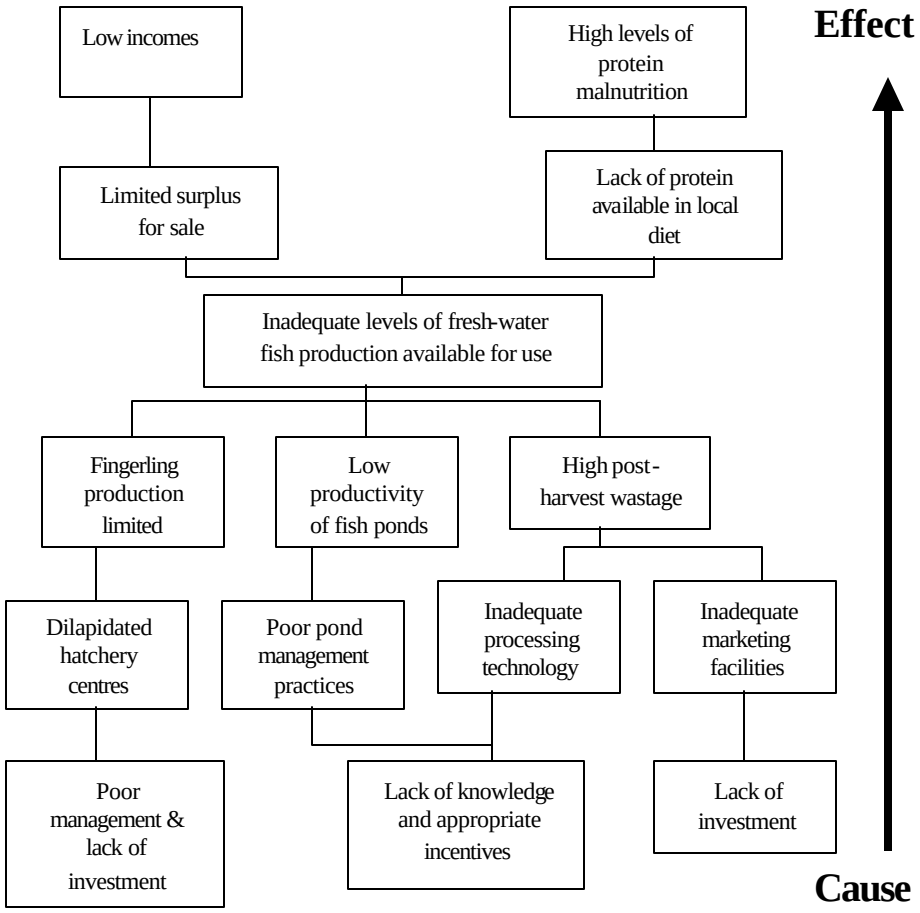
Development projects are usually proposed as a response to addressing and overcoming identified development problems. Problem analysis involves the identification of what the main problems are and establishment of the cause and effect relationships between these problems. The key purpose of this analysis is to try and ensure that 'root causes' are identified and subsequently addressed in the project design, not just the symptoms of the problem(s).

A useful medical analogy can be used to emphasise this point. If you go to the doctor with a bad headache, and the doctor prescribes a pain killer without any further detailed diagnosis, the doctor is treating the ***effect*** and not the ***cause*** of

your problem. Without finding out what is causing the headache in the first place, it is likely that pain will persist as soon as the medication wears off. Projects which only address the effects of problems, and not underlying causes, are therefore unlikely to bring about sustainable benefits.

One main tool used in problem analysis is the 'problem tree', a simplified example of which is shown in Figure 2 for an acquaculture project.

Figure 2: Problem tree structure



Important points to note about using this tool are:

- it should be undertaken as a group activity involving stakeholders who can contribute relevant technical and local knowledge;
- it may be appropriate to undertake a number of separate problem analysis exercises with different stakeholder groups, to help determine different perspectives and how priorities vary;
- the process is as important as the product. The exercise should be presented as a learning experience for all those involved, and as an opportunity for different views and interests to be presented and discussed. However, one

should not necessarily expect full consensus among stakeholders on what the priority problems are; and

- it is important to recognise that the product (the problem tree diagram) should provide a simplified, but nevertheless robust, version of reality. If it is too complicated, it is likely to be less useful in providing direction to subsequent steps in the analysis.

3.1.2 Preparatory steps

Before starting work on preparing a problem tree:

Clarify the scope of the investigation/analysis. If you are participating in a project preparation mission, others will have already identified (at least to some extent) the main development problems they are concerned with, or opportunities they have seen. Understanding this will help you focus and structure the direction of the analysis. You will not want, or be able, to deal with a limitless range of problems.

Inform yourself further. Collect and review existing background information on the main issue(s) of concern and on the geographic area(s) you will be working in. Are you clear what the main issues are, or are likely to be?

Identify the group(s). Who do you need to bring together to ensure the group is well informed and can help to analyse and discuss the main issues that the analysis will focus on? For example, if you are looking at a health and sanitation problem which may require a water supply as part of the solution, make sure that you have (among others) a water supply engineer and an environmental health officer to join you. Also be sure to involve community representatives that you believe would be willing and able to contribute to this kind of exercise. A representative and technically competent group is required to help fully identify, analyse and organise ideas.

Participants need to be informed to be useful and productive. They should know why they are doing the analysis, what the process involves and what information they are expected to contribute.

Conduct the analysis. The specific steps required in conducting a problem analysis and preparing a problem tree are described below. Cards, marker pens, wall space for display and some means of sticking and moving cards on the display area are essential to undertake this exercise successfully.

3.1.3 Main steps in preparing the problem tree

Identifying and listing the main problems

- Explain the purpose of the exercise and the context within which it is taking place (e.g. preparation of a primary health care project). Explain the problem tree method and the input expected from the participants. Provide some examples of the cause and effect relationship before starting, emphasising the importance of identifying root causes.
- Using contributions from the group, list all the negative statements about the situation you are analysing. This can be undertaken as a brainstorming session.

- Print each problem statement in clear language on a card and display this on some suitable wall space.

Identifying core problems

- Through discussions, identify a consensus core problem - the one(s) which appear to be linked to most negative statements.
- Print a precise definition of the core problem on a card (if the existing statement requires further clarification).
- Display the card on a wall (or on the floor) so that the whole group can clearly see it.

Identifying cause and effect

- Begin to distribute the negative statement cards according to whether they are "causes" (i.e. leading to the core problem) or "effects" (i.e. resulting from the core problem) until all causes are below the core problem and all effects are above the core problem. At any stage in the exercise, those statements that are considered to be unclear should either be more clearly specified or discarded. Problems that are clear but very general in nature and which affect not only this issue but would apply to almost any development problem can be treated as 'overall constraints' and moved to the side of the main problem tree. This helps keep the core problem tree focused and manageable. You can be guided in this by considering whether or not the problem is likely to be one which can be addressed by a project based solution. If not, it is a constraint.
- Then the guiding questioning for further structuring the statements into a problem tree becomes "What leads to that?" Choose any negative statement printed as a problem on the cards and ask "What leads to that?". Then select from the cards the most likely cause of the problem, and place it below the chosen statement.
- If there are two or more causes combining to produce an effect, place them side by side below the resulting effect.
- After you have placed the card or cards for each relationship, pause to review. Then ask the group if there are more causes leading to that problem.
- Similarly you must ask if there are any more effects resulting from that problem.
- If there are multiple effects resulting from a cause, place them side by side and above the cause(s).

Checking the logic

- At each stage you should invite participants to move the cards - that is to suggest or hypothesise other relationships.
- When you have placed all cards, review the structure to ensure that related streams of cause and effect are close to each other on the problem diagram.
- Choose one of the cards at the top line of your Problem Tree, then work back through the diagram according to the guiding question "What leads to, or

causes, that?" in order to check the logic or completeness of your cause-effect structure.

Drafting the problem tree diagram

- Then draw in vertical links to show cause-effect relationships, and horizontal links to show joint causes and combined effects.
- Copy your diagram onto a sheet of paper and distribute it for further comment and variations within an appropriate time period.

Dealing with overall constraints

Overarching development problems that are identified during the analysis, but which cannot be addressed directly by a project based intervention (e.g. institutional corruption, lack of government revenue, high population pressure) should be taken out of the main problem tree diagram and considered as overall constraints. These overall constraints must then be considered as part of the risk analysis undertaken later in the project preparation process.

An example of a problem tree diagram that was prepared as a group activity for a training project in Fiji is shown in Figure 3.

Once the group is generally happy with the main elements of the problem tree, move on to investigating and documenting possible project solutions through using stakeholder analysis, the objective tree, alternatives analysis and finally the Logical Framework Matrix itself.

3.2 Stakeholder analysis

Having identified the main problems and the cause and effect relationship between them, it is then important to give further consideration to ***who*** these problems actually impact on most, and what the roles and interests of different stakeholders might be in addressing the problems and reaching solutions.

The main purposes of stakeholder analysis are:

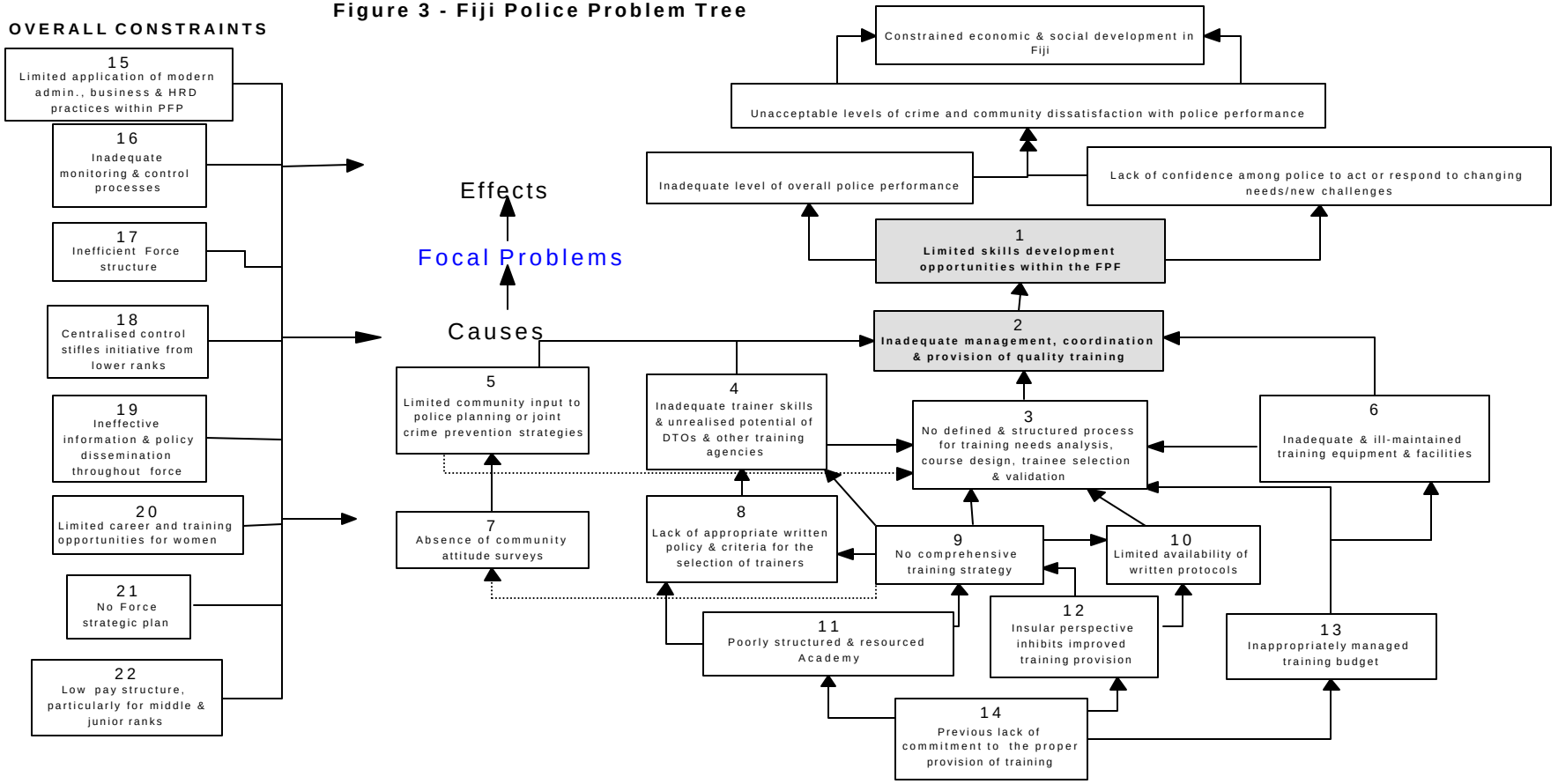
- To better address distributional and social impacts of projects, programs and policies; and
- To identify existing or potential conflicts, and factor appropriate mitigation strategies into activity design.

Stakeholder analysis is thus about asking the questions "Whose problem" and, if a project intervention strategy is proposed, "Who will benefit".

The main steps in stakeholder analysis include:

- Identifying the principal stakeholders (these can be various levels: eg, local, regional, national);
- Investigating their roles, interests, relative power and capacity to participate;
- Identifying the extent of cooperation or conflict in the relationship between stakeholders; and
- Interpreting the findings of the analysis and defining how this should be incorporated into project design.

Figure 3 - Fiji Police Problem Tree



When looking at who the stakeholders are, it is useful to distinguish between the 'target group' and the broader group of stakeholders (the target group being one of the principal stakeholders).

3.2.1 Target group

The target group are those who are directly affected by the problems in question and who might be beneficiaries of any proposed project solution.

Within any geographic area and within any 'community' there will always be considerable differences in people's access to resources and development opportunities. Some individuals and groups will be benefiting from the existing social, political or economic relationships and some will not. It is therefore important to gain some understanding about how different groups within 'the community' are affected by specific development problems.

Similarly, once we choose a particular project intervention, there will usually be some groups within the local community who will benefit more than others. It is important to understand this (among other things) so that the risks of pursuing the project strategy can be assessed in regard to the likely social and political support and opposition to the planned project. Strategies can then be devised to counter opposition, and/or strengthen support.

The groups who might be specifically considered in any such analysis would depend on the nature of the problems, but could include:

- Men/women (Gender analysis)
- Rich/poor
- Young/old
- Small scale/large scale farmers
- Rural/urban dwellers
- Landowners/landless
- Farmers/traders

Target groups (once identified and selected) need to be clearly defined so that there is little ambiguity as to who we are trying to assist/reach. This is important for guiding both implementation and monitoring and evaluation activities.

3.2.2 Stakeholders

Stakeholders include both the target group and other government or private agencies (or groups) who have an interest in, or a responsibility for, addressing the identified development problems. Stakeholders might include individuals, communities, institutions, commercial groups or policy makers.

For most bilateral aid projects the partner government's implementing line agencies will be primary stakeholders. Adequate analysis of their roles, interests and capacity to participate should thus be factored into project preparation

An example of two matrix formats that can be used to help structure a stakeholder analysis are shown in Figure 4. The first can be used to provide a summary

profile of how different stakeholders are affected by the main problem(s), and the second summarises how a proposed project intervention might affect different groups. The second matrix would therefore not be completed until after potential project objectives had been identified.

Figure 4: Stakeholder analysis matrix – How affected by the problem(s)

Stakeholder	How affected by the problem(s)?	Capacity/motivation to participate in addressing the problem(s)	Relationship with other stakeholders (e.g. partnership or conflict)

Stakeholder analysis matrix – Expected impacts of proposed intervention/solution

Stakeholder	Stakeholder's main objectives	Positive impacts/benefits	Negative impacts/costs	Net impact

Both of these matrix formats can be adapted to include different or additional information about the main stakeholder groups depending on the scope and focus of the issues being addressed.

It is important to see stakeholder analysis as part of the iterative process of project planning. As both problems and potential project objectives are analysed in more detail, the stakeholder analysis should be reviewed and updated to account for the new information which comes to light.

3.3 Analysis of objectives

Objective trees should be prepared after the problem tree has been completed and an initial stakeholder analysis has been undertaken.

In its simplest form, the objective tree uses exactly the same structure as the problem tree, but with the problem statements (negatives) turned into objective statements (positives). However, the results of the stakeholder analysis may have helped to give better focus to priority problems and not all of the original problem statements may therefore need to be translated into objective statements.

While the problem tree shows the ***cause and effect*** relationship between problems, the objective tree shows the ***means - end*** relationship between objectives. This leads directly into developing the project's narrative description in the Logical Framework Matrix.

Once the negative statements from the problem tree have been re-worded to positive statements, you should then check:

- the statements are clear and unambiguous;
- that the links between each statement are logical and reasonable (will the achievement of one help support the attainment of another that is above it in the hierarchy?);
- is there a need to add any other positive actions/statements? More detail may be required;
- are the positive actions at one level sufficient to lead to the result above?;
- the overall structure for simplicity and clarity. Simplify if possible/necessary.

Once these main points have been checked, the proposed objective tree structure can be circulated for further comment and feedback.

An example of an objective tree (developed from the problem tree shown in Figure 3) is shown in Figure 5.

3.4 Analysis of alternative strategies

During the process of analysing the problems, stakeholder issues and developing a draft objective tree, views on the potential merits or difficulties associated with different possible project interventions are likely to have been developed and discussed by the design team. These ideas/options then need to be further scrutinised to help firm up the likely scope of the project before more detailed design takes place.

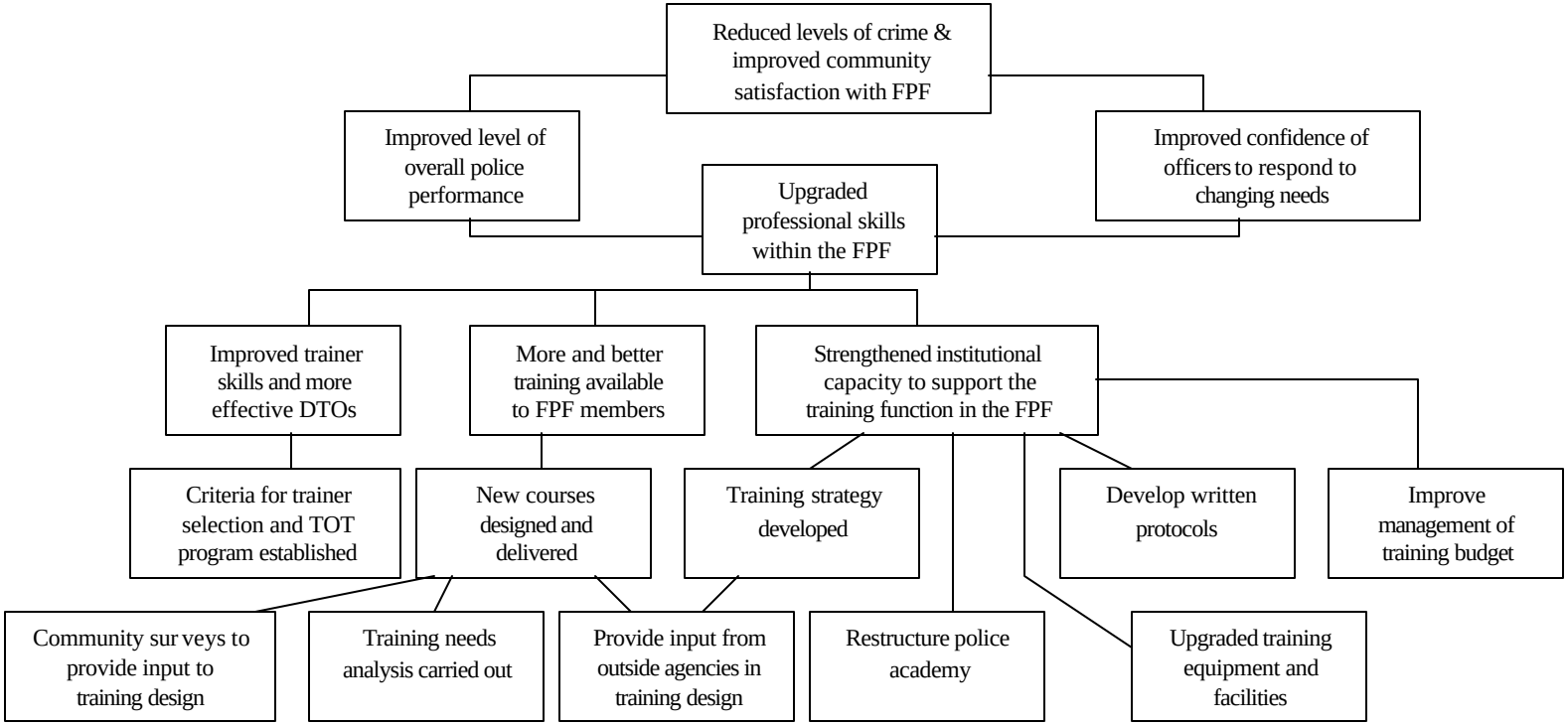
The type of questions that might need to be asked (and answered) could include:-

- should all of the identified problems/objectives be tackled, or a selected few?
- what is the combination of interventions that are most likely to bring about the desired results and promote sustainability of benefits?
- what are the likely capital and recurrent cost implications of different possible interventions, and what can be realistically afforded?
- which strategy will best support participation by both women and men?
- which strategy will most effectively support institutional strengthening objectives? and
- how can negative environmental impacts be best mitigated?

To assess alternative interventions it is useful to identify and agree on a number of assessment criteria against which alternative interventions can be ranked/scored. Criteria that may be used to help make a broad assessment of different intervention options could include the expected:

- benefits to target groups - equity and participation;
- total cost and recurrent cost implications;
- financial and economic viability;
- technical feasibility;
- ability to repair and maintain assets;
- sustainability;

Figure 5: Objective tree example – *(derived from the problem tree in Figure 3)*



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- contribution to institutional strengthening and management capacity building;
- environmental impact; and
- compatibility of project with sector/program priorities.

A project design document should demonstrate to those who wish to support/fund the project that the main alternative options have been assessed and considered. There is always more than one way to address a problem and reach a solution. The aim is to find the best way, subject to meeting specified criteria.

However, it is important to emphasise again that project planning is not a linear process. One does not move mechanistically from one step to the next, always in a forward direction, and arrive automatically at the best solution. Planning is an iterative and creative process, and selection of a design option often involves significant leaps in thinking which cannot be neatly slotted into a 'stage' in the planning process.

3.5 Link to the Logframe Matrix

Figure 6 shows how the objective tree can be used to start framing the objectives hierarchy in the first column of the Logframe matrix. Objectives at the top of the tree should help frame goal and purpose statements, while further down the tree component objective and output statements can be identified. However, it should not be expected that the objective tree can be transposed ***directly***, without further adjustment, into the hierarchy of the project description in the matrix. Further adjustment and refinement of statements is usually required and checking of the means-ends logic should be ongoing as the matrix is developed.

The Fiji Police Training Project logframe matrix is provided as an example at Annex 2.

4. The Logframe matrix

4.1 Format

The result of the logical framework analysis is presented in a matrix. The matrix should provide a ***summary*** of the project design and, when detailed down to output level, should generally be no more than five pages long.

The Logframe matrix has four columns and usually four or five rows, depending on the number of levels of objectives used to explain the means-ends relationship of the project.

The ***vertical logic*** identifies what the project intends to do, clarifies the causal relationships, and specifies the important assumptions and uncertainties beyond the project manager's control (columns 1 and 4).

The ***horizontal logic*** defines how project objectives specified in the Project Description will be measured, and the means by which the measurement will be verified (columns 2 and 3). This provides the framework for project monitoring and evaluation.

Figure 6

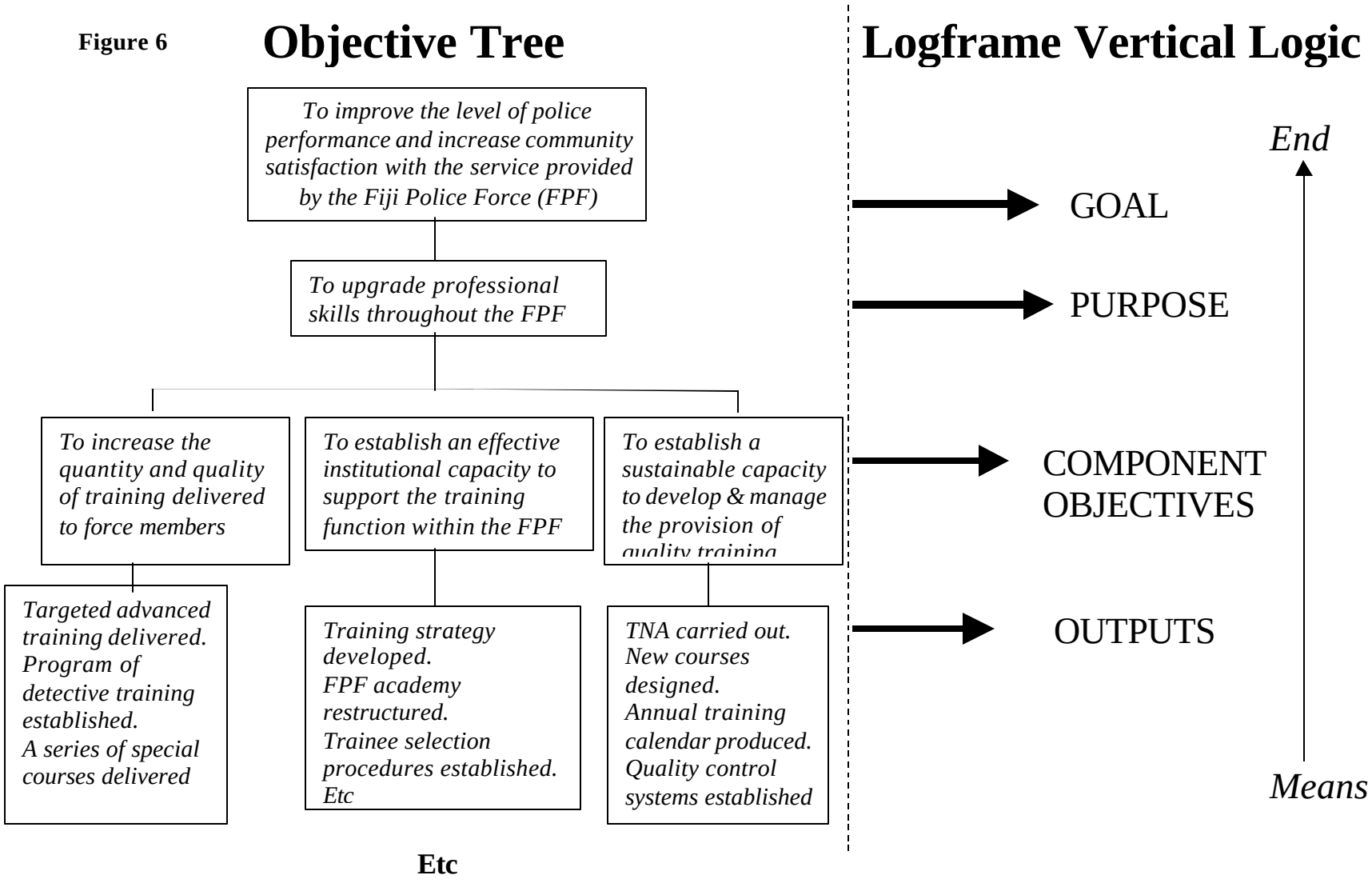

Objective Tree
Logframe Vertical Logic
To improve the level of police performance and increase community satisfaction with the service provided by the Fiji Police Force (FPF)
To upgrade professional skills throughout the FPF
To increase the quantity and quality of training delivered to force members
To establish an effective institutional capacity to support the training function within the FPF
To establish a sustainable capacity to develop & manage the provision of quality training
Targeted advanced training delivered.
Program of detective training established.
A series of special courses delivered
Training strategy developed.
FPF academy restructured.
Trainee selection procedures established.
Etc
TNA carried out.
New courses designed.
Annual training calendar produced.
Quality control systems established
Etc
End
GOAL
PURPOSE
COMPONENT OBJECTIVES
OUTPUTS
Means

Figure 7 shows the structure of the matrix and indicates the general sequence for completing its component parts. The Project Description is completed first, then the assumptions, then Indicators and finally the Means of Verification. However, completing the matrix must be approached as an iterative learning process. As one part of the matrix is completed, there is a need to look back at what has been said in previous parts to review and test whether or not the logic still holds. This process will often require the modification of previous descriptions.

Figure 7 – Logframe Matrix structure and sequence for completion

Project Description	Indicators	Means Of Verification (MOVs)	Assumptions/
1. Goal	10. Indicators	11. MOVs	
2. Purpose	12. Indicators	13. MOVs	9. Assumptions
3. Component Objectives	14. Indicators	15. MOVs	8. Assumptions
4. Outputs	16. Indicators	17. MOVs	7. Assumptions
5. Activities	Milestones specified in activity schedules and scope of services	Management reports on physical and financial progress	6. Assumptions

The option of whether or not to include both an overall project purpose and component objectives should be left open to the project designers, depending on the scope and complexity of the project. For example, in some cases it may be sufficient to have a goal and component objectives, and to leave out the purpose.

It is also recommended that in most cases the matrix itself should ***not*** include a listing of the activities required to produce project outputs. The main reason for this is to keep the matrix as a concise summary of ***what*** the project aims to deliver, rather than specifying in too much detail ***how*** it will be delivered. This is also consistent with AusAID's focus on using output contracts. Where required, activities should be separately detailed in an activity schedule format, using reference numbers to link each group of activities to a specific output.

It is important to keep firmly in mind that the Logframe matrix produced during design is essentially a draft (it provides a snapshot in time). It will need to be reassessed, refined and updated on an ongoing basis once project imple mentation starts. There is thus a careful balance to achieve between providing enough detail in the design matrix to provide a clear and logical plan of action (which can be costed and contracted), while not being too prescriptive and establishing too rigid a structure that is more likely to constrain than facilitate project implementation.

4.2 Terminology

A brief description of the terminology is given below:-

Project Description provides a narrative summary of what the project intends to achieve and how. It describes the means by which desired ends are to be achieved (the vertical logic).

Goal refers to the sectoral or national objectives to which the project is designed to contribute (e.g increased incomes, improved nutritional status, reduced crime). It can also be referred to as describing the expected impact of the project. The Goal is thus a statement of intention.

Purpose refers to what the project is expected to achieve in terms of development outcome. Examples might include: increased agricultural production, higher immunisation coverage, cleaner water, or improved local management systems and capacity. There should generally be only one purpose statement

Component Objectives. Where the project or program is relatively large and has a number of components (output/activity areas) it is useful to give each component an objective statement. These statements should provide a logical link between the outputs of that component and the project purpose.

Outputs refer to the specific results and tangible products (goods and services) produced by undertaking a series of tasks or activities. Examples might include: irrigation systems or water supplies constructed, areas planted/developed, children immunised, buildings or other infrastructure built, policy guidelines produced, and staff trained. Each component should have at least one contributing output, and will often have up to four or five. The delivery of project outputs should be largely under project management's control.

Activities refer to the specific tasks undertaken to achieve the required outputs Examples for a new community water supply might include: further design, establishment of water users committee and maintenance procedures, site preparation, collection of local materials, tank construction and pipe laying, digging soak pits, and commissioning. However, the Logframe matrix should not include too much detail on activities otherwise it becomes too lengthy and potentially prescriptive. If detailed activity specification is required, this should be presented separately in an activity schedule/Gantt chart format and not in the matrix itself.

Inputs refer to the resources required to undertake the activities and produce the outputs (such as personnel, equipment, and materials). Inputs should not, however, be included in the matrix format.

Assumptions. Assumptions refer to conditions which could affect the progress or success of the project, but over which the project manager has no direct control (e.g price changes, rainfall, land reform policies, non-enforcement of supporting legislation). An assumption is a ***positive*** statement of a condition that must be met in order for project objectives to achieved, whereas a risk is a ***negative*** statement of what might prevent objectives being achieved.

Indicators . Indicators refer to the information we need to help us determine progress towards meeting project objectives. An indicator should provide, where possible, a clearly defined unit of measurement and a target detailing the quantity, quality and timing of expected results.

Means of Verification (MOVs). Means of verification should clearly specify the expected source of the information we need to collect. We need to consider how the information will be collected (method), who will be responsible, and the frequency with which the information should be provided.

4.3 Vertical Logic

4.3.1 If-then causality

Constructing the Project Description of the matrix involves a detailed breakdown of the chain of causality in the project design. This can be expressed in terms of:

IF inputs are provided, THEN activities can be undertaken;

IF activities are undertaken, THEN outputs will be produced;

IF outputs are produced, THEN component objectives will be achieved;

IF component objectives are achieved, THEN the project purpose will be supported;

IF the project purpose is supported, this should then contribute towards the overall goal.

Each level thus provides the rationale for the next level down: the goal helps define the purpose, the purpose the component objectives, and so on down the hierarchy.

4.3.2 Management influence

The Logframe helps to indicate the degree of control managers have over the project. Managers should have considerable direct ***control*** over inputs, activities and outputs, but can only be expected to exert ***influence*** over the achievement of project purposes through the way in which outputs are managed. Project managers usually have no direct influence over achieving the goal, and can only be expected to monitor the broader policy and program environment to help ensure the project continues to be contextually relevant.

The ***necessary*** and ***sufficient*** conditions within the vertical logic are another way of viewing this issue. These indicate that:

- Achieving the purpose is ***necessary but not sufficient*** to attain the goal. This is because the project is but one of a number of projects or initiatives that contribute to the goal.
- Producing the project outputs is ***necessary but may not be sufficient*** to achieve the component objectives. Other factors beyond the project's control are again likely to have an influence on achievement of component objectives.
- Carrying out project activities should be ***necessary and sufficient*** to produce the required outputs (although some risks will always remain).

In defining project outputs it is also necessary to recognise that there may be no single agency or manager who has complete control over their delivery. In the case of donor funded projects, many project outputs will be the result of the endeavours of both a local implementing agency(s) and team of expatriate or local advisors. In terms of contracting a project, a distinction then needs to be made between a ***project*** output and a ***contractible*** output (outputs or milestones that the donor/funding agency can contract a consultancy firm to deliver). This issue is discussed further under section 4.3.6 below.

4.3.3 Project components

A project component consists of a sub-set of inputs, activities and outputs that serve a single purpose. Components may be identified on the basis of their sectoral, functional or institutional focus. Thus, for example, an agricultural training project might include components which focus on (i) training program design and delivery, (ii) facilities upgrading, (iii) student loans scheme, and (iv) project management. Each of these components has a different technical focus, is likely to be managed by different groups within the targeted institution(s), and therefore merit being designed as separate project components.

4.3.4 Reference numbers and flow charts

Using reference numbers is a useful device to help the logframe user negotiate around the logic of the matrix, particularly when the matrix is presented on more than one page. This helps the reader understand which activities, outputs and purposes are linked and also provides a clear reference point when preparing activity, resource and cost schedules linked to the logframe matrix.

Use of a flow chart format to present a summary of outputs, component objectives, purpose and the goal is also a useful device. Such a format structure is shown below in Figure 8.

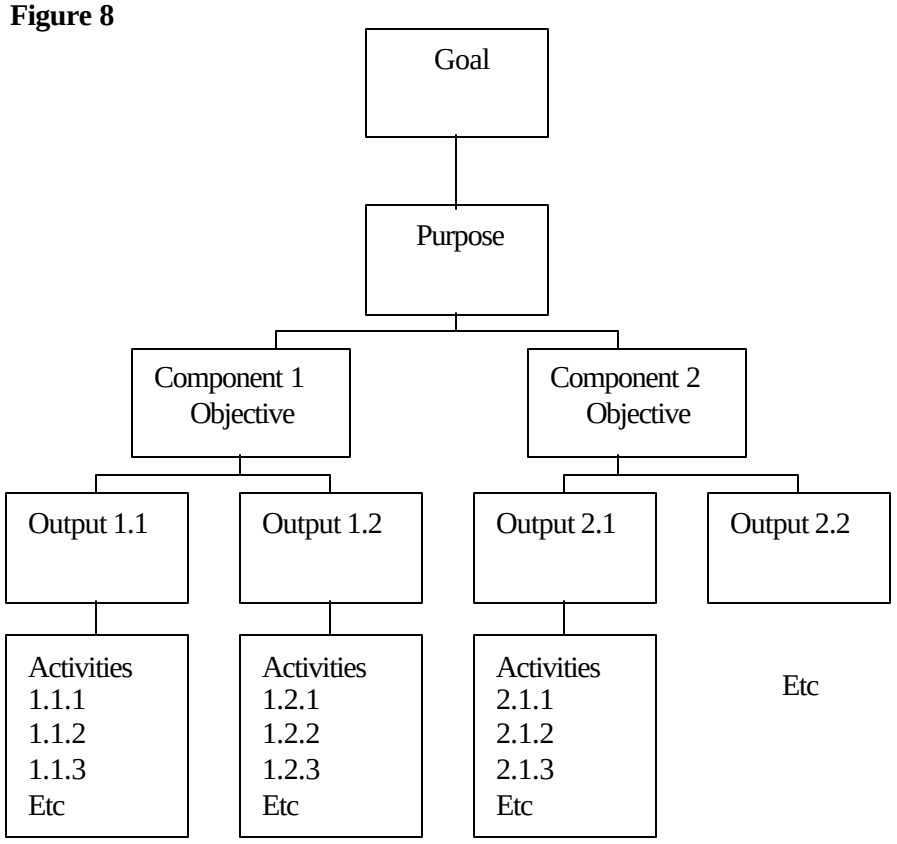
4.3.5 Writing clear objective statements

It is useful to standardise the way in which the hierarchy of project objectives are described in the matrix. This helps the reader recognise more easily what is a purpose, an output or activity statement. A convention should therefore be used whereby a goal, purpose and component objective statement is always written in the infinitive ('to do something'), an output is described in the future perfect ('something will have been produced'), and an activity is described in the present tense ('do something'). An example of what is meant is provided below:

Goal	To contribute to improved community health on a sustainable basis
Purpose or Objective	To provide a clean, reliable and sustainable supply of water adequate for community needs
Output	A reticulated water supply will have been established/Village water supply maintenance technicians will have been trained, etc
Activity	Conduct site survey, build header tank, prepare training materials, design user pays system, etc

A common problem with poorly constructed Logframes is that the different levels of the project description tend to simply reword statements at other levels. Care should be taken to avoid this happening.

Figure 8



4.4 Assumptions and risks

Projects are always subject to influence by outside factors beyond the direct control of project managers. This is particularly so of rural and institutional development type projects which require the cooperation of a number of different stakeholder groups, are often implemented in poorly resourced and unstable environments, and require behavioural change on the part of participants. The project 'box' is never isolated from external events.

The fourth column of the matrix is thus used to highlight the external conditions (assumptions) that need to be fulfilled if the vertical logic of the project description is to hold true. This relationship between assumptions and the project description is shown in Figure 9.

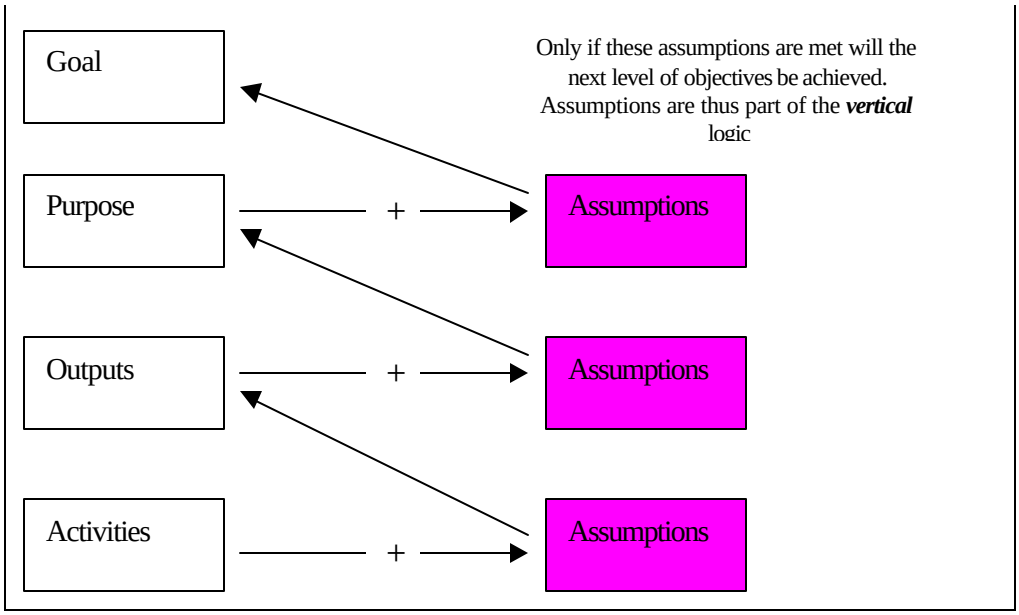
Understanding and assessing the nature of these assumptions is an essential part of good design. Failure to realistically identify and address assumptions is a common source of project failure.

Some Logframe users prefer to talk about 'risks' in this fourth column. The distinction being that risks are ***negative*** statements about what might go wrong, whereas assumptions are ***positive*** statements about the conditions that need to be met if the project is to stay on track. Whether assumptions or risks are used, the

purpose is the same, namely to assess and address external impacts on the project and improve, where possible, the robustness of the design.

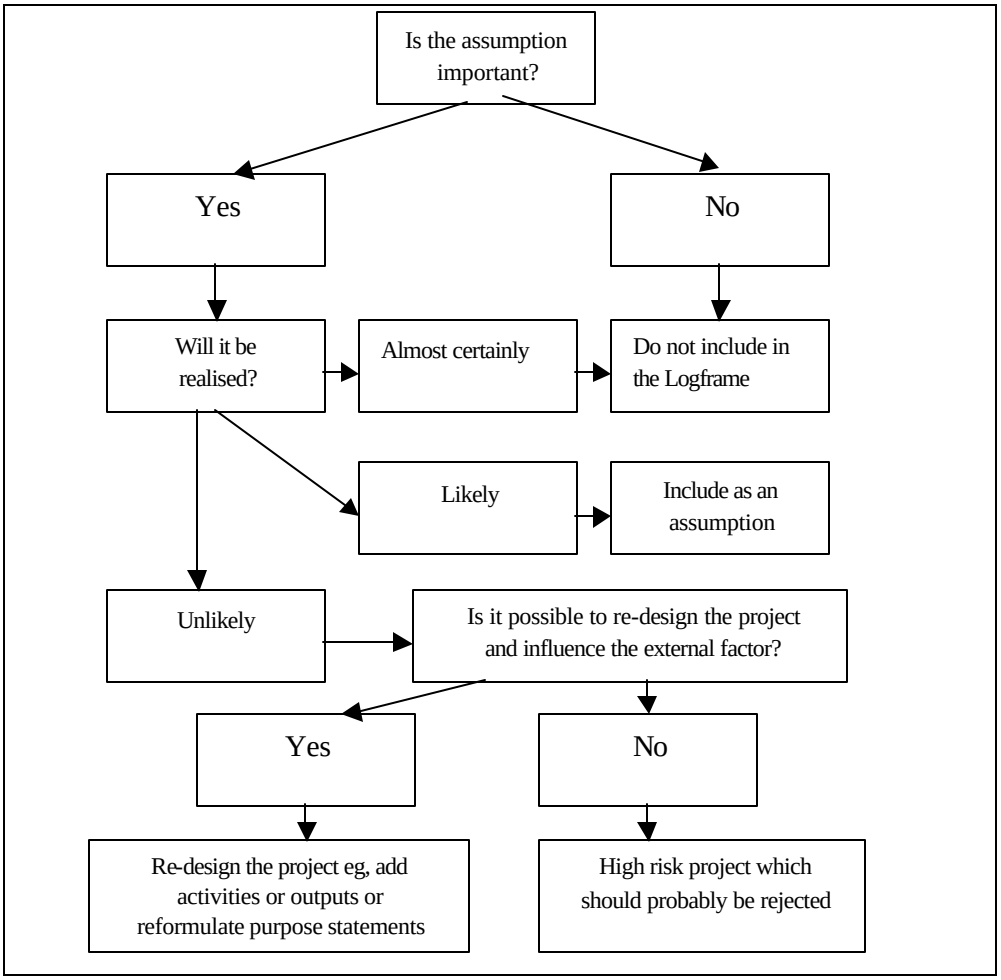
The Logframe provides a starting point for further risk analysis work and the preparation of a risk management plan.

Figure 9: Relationship between assumptions and objectives



A decision tree to help analyse the importance of potential risks, and decide what should be done about them, is shown in Figure 10.

Figure 10: Assumptions Decision Tree



4.5 Horizontal logic

4.5.1 Link to monitoring and evaluation

The horizontal logic of the matrix helps establish the basis for monitoring and evaluating the project. The link between the logframe and monitoring, review and evaluation is illustrated in Figure 11.

This is of course a simplified framework, and needs to be applied and interpreted in a suitably flexible manner. For example, ex-post evaluation will include some element of assessing whether or not the purpose, component objectives and outputs have been achieved, and review will also assess performance in output delivery.

Figure 11 – The Logframe and M&E

Logframe hierarchy	Type of M&E activity	Level of information
Goal	Ex-post evaluation	Outcomes/impact
Purpose Component Objectives	Review	Outcomes/effectiveness
Outputs Activities Inputs	Monitoring	Input/Outputs

4.5.2 Testing the project description

Once the project description and assumptions have been drafted (columns 1 and 4 of the matrix), the next task is to identify the indicators that might be used to measure and report on the achievement of objectives (column 2), and the source of that information (column 4). Because one reads ***across*** the matrix when analysing indicators and means of verification, this is referred to as the 'horizontal logic'.

In considering how the achievement of objectives might be measured/verified, one is required to reflect on the clarity of objective statements, how feasible they will be to achieve, and how they might be more specifically defined. This is part of the iterative nature of the analysis – each part of the framework may need to be revisited as new tests of logic are applied.

4.5.3 The level of detail

In most cases, the specification of indicators and means of verification should focus on the output, component objective and purpose levels of the hierarchy. It is usually not appropriate to specify indicators for every activity (if activities are included in the logframe), as this tends to clutter the matrix with too much detail. Activity and input monitoring systems are often better defined and established during implementation by the management team. If the goal is a broad statement of development intention at the sectoral or national level, and the project itself is providing only a small contribution, it may not be useful to include indicators and means of verification for the goal.

At the design stage, the level of detail that can be realistically expected in both the indicators and MOV columns will depend on, *inter alia*, the type of project, the information available at the time of design, whether or not the team includes a member with M&E design skills, and how much time the design team has to do the work. For example, a three person design team which is in the field for three weeks to prepare a complex institutional strengthening project, should not necessarily be expected to prescribe the project monitoring and evaluation arrangements in great detail. The horizontal logic of the matrix should rather be used as a means by which to:

- test the clarity of objective statements;
- indicate the type of information required and how it could be collected;

- provide a framework within which project implementers can design the detailed elements of the monitoring and evaluation system once implementation commences; and
- help determine the scope and scale of resources that will be required to establish and maintain an effective monitoring and evaluation function, and then include these resources in the project design and budget.

4.5.4 Indicators

Indicators specify how the achievement of project objectives will be measured and verified. They provide the basis for monitoring project progress (completion of activities and the delivery of outputs) and evaluating the achievement of outcomes (component objectives and purpose).

Indicators are established in response to the question: 'How do I know whether or not what has been planned is actually happening or has happened?' We look for indications or signs to help us. For example: 'How do we know that more teachers have been trained this year? What would tell us that the training had had an impact on classroom performance? How do we measure progress towards the objective of strengthening community management capacity?'

There are no absolute principles about what makes a good indicator of physical achievement, however the **SMART** characteristics listed below (Specific, Measurable, Attainable, Relevant, Timely) are useful.

Specific Key indicators need to be specific and to relate to the conditions the project seeks to change. Cement delivered to a site is not a good indicator of the number of houses constructed. Likewise seedlings distributed from a nursery may not be a valid indicator of plants established. The horizontal logic of the Logframe matrix helps to test this criteria.

Measurable Quantifiable indicators are preferred because they are precise, can be aggregated and allow further statistical analysis of the data. However, development process indicators may be difficult to quantify, and qualitative indicators should also be used.

Attainable The indicator (or information) must be attainable at reasonable cost using an appropriate collection method. Accurate and reliable information on such things as household incomes and crop production from small-scale dryland farming are, for example, notoriously difficult and expensive to actually collect.

Relevant Indicators should be relevant to the management information needs of the people who will use the data. Field staff may need particular indicators that are of no relevance to senior managers, and vice-versa. Information must be sorted, screened, aggregated and summarised in different ways to meet different managers' needs. *(However, the Logframe matrix itself should not attempt to contain all this detail).*

Timely An indicator needs to be collected and reported at the right time to influence many management decisions. Information about agricultural based activities, for example, must often come within specific time periods if it is to be

used to influence events in the whole cropping and processing cycle. There is also no point choosing indicators that can only tell you at the end of a project whether you succeeded or failed in meeting certain objectives. They may be lessons learned but the information comes too late for project personnel to act on.

Where possible, indicators should incorporate elements of quantity, quality and time. This is about setting targets for project implementers to work towards and against which progress can then be measured. As the saying goes, "what gets measured gets managed".

Caution should nevertheless be exercised when specifying quantified targets in the logframe (rather than just the indicator/unit of measurement), particularly for projects which focus on process/capacity development outcomes. Two issues arise:

- the Logframe should provide a summary of the project framework and not contain more detail than is necessary. Details of the proposed management information system should be documented separately, using the Logframe as a guiding framework; and
- targets may be indicated during design, but the detailed assessment of what is really feasible needs to be undertaken and agreed upon by the implementing agencies once the project starts. Setting targets is an important part of good planning, but the quality and usefulness of such targets depends very much on when and by whom they are set. Design teams will often not have adequate information to confidently propose specific targets, particularly for process oriented projects implemented in partnership with local agencies.

Two specific limitations associated with specifying indicators using the Logframe structure also need to be recognised, namely:

- the indicators selected may be relevant to some, but not all, stakeholders. It cannot necessarily be assumed that all stakeholders have common interests and information needs; and
- even within one agency, information needs will vary between levels of the institutional hierarchy. As the level of management changes, so does the level of detail required and the nature of indicators.

The indicators selected for inclusion in the Logframe are thus usually focused on meeting the information needs of selected stakeholders and at specific management levels (e.g. project managers/aid agencies). The point of view reflected in the hierarchy of objectives summarised in the project Logframe therefore needs to be broken down into sub-sets of objectives, indicators and targets for each level of management once project implementation starts.

4.5.5 Means of Verification

The different means (and costs) of collecting information must also be considered when choosing appropriate indicators. Some indicators may give the information you would ideally like to have, but when the means of getting this is carefully considered it might become impractical (e.g. too complex or expensive). Again the Logframe matrix provides a useful analytical and presentational structure for systematically identifying and assessing appropriate 'Means of Verification' for each indicator that is chosen.

Once it is clear what information managers might require (the key indicators) it is then necessary to consider how this might be obtained.

The following questions should be asked and answered:-

- how to collect the information (e.g. sample surveys, administrative records, national statistics (e.g. census), workshops/focus groups, observation, PRA or RRA techniques, etc)?
- what source is most appropriate (e.g. who should be interviewed, does the Bureau of Statistics already collect the required information, is the source reliable?)
- who should do it (e.g. extension staff, supervisors, an independent team)
- when and how often the information should be collected, analysed and reported (e.g. monthly, annually, according to seasonal cropping cycles)
- what formats are required to record the data being collected[1].

When developing answers to these questions, one of the main issues to keep in mind is the resource/capacity constraints that will be faced by those responsible for collecting the information. There is no point in designing procedures which are too complex or costly as this will merely lead to frustration and disappointment in the outcomes. A balance must therefore be struck between what would be desirable in an ideal world and what is feasible in practice.

Project staff will almost certainly need to collect some primary information specific to their project's work, but should first look to using existing sources where these are available. For the 'big picture' the Bureau of Statistics, research studies, donor and business reports may be useful sources (these are often available but not accessible to those who might use them to support field level management and monitoring). At the local level - community, government and other service agency records may provide relevant planning and management information for project implementers. The main point is to build on existing systems and sources (where possible and appropriate) before establishing new ones. Check what's already there before assuming it isn't.

4.5.6 Indicators of process

Development is not only about the delivery of better services, and cannot be judged alone by indicators which measure quantifiable changes in such things as the income, health or educational level of targeted groups. Many development projects (particularly those focusing on process and capacity building objectives) place equal emphasis on bringing about changes in the way that groups of people (particularly disadvantaged groups) view themselves and are able to act in their own interests.

An example of possible indicators and MOVs for one process based objective is shown in Figure 12 below:

[1] In the process of working these matters out, it might well become apparent that some specific information requirements as originally specified may not be feasible to collect due to constraints of cost or complexity. Indicators or statements of objective may then need to be re-considered and revised to be made more realistic/practical

Figure 12 – Example of indicators of development process

Objective	Possible indicators	Means of Verification
To increase awareness of, and community capacity to address, the local causes of environmental pollution	- Levels of awareness among different groups within the community (men, women, children) about specific environmental health and pollution issues	- Sample survey at schools, of women's groups and of male household heads conducted at the beginning of the project and after two years. Conducted by environmental health officers using questionnaire to rank levels of awareness of specific issues
	- Establishment of community based environmental health & management committee. Membership, meetings and number & type of activities initiated	- Records of elected committee members, regularity of meetings and minutes of decisions made. Analysed and scored against established criteria every six months by management committee members - Observation of how meetings are conducted and levels of participation. Undertaken by Env. health officers in line with planned schedule of meetings

4.6 Some strengths and weaknesses of LFA

For all its potential advantages when clearly understood and professionally applied, LFA provides no magic solution to identifying or designing good programs or projects.

To help avoid the common problems and possible dangers, those using the Logframe should:

- emphasise the importance of the LFA ***process*** as much as the matrix ***product;***
- ensure stakeholders participate in the analytical process;
- avoid using the matrix as a blueprint through which to try and exert control over the project;
- treat the matrix as a presentational summary – keep it clear and concise;
- be prepared to refine and revise the matrix as new information comes to light;
- expect the first Logframe to be a draft which will require reworking; and
- do not place too much emphasis on detailed target specification within the matrix during the planning stages.

When LFA is used in a flexible manner and a consultative approach is taken, it is a powerful analytical tool to support project planning and implementation.

Figure 13 below provides a summary of some of the strengths and weaknesses of LFA[2].

Figure 13 – Strengths and weaknesses of LFA

Issue	Potential strengths	Common problems	Possible dangers
Vertical Logic	Provides logical link	Getting consensus on	Oversimplification of

[2] Adapted from Des Gasper, "Logical Framework : A Critical Assessment", Institute of Social Studies

	between means and ends. Places activity within broader development environment. Encourages examination of risks.	objectives. Reducing objectives to a simple linear chain. Inappropriate level of detail (too much or too little).	objective. Objectives become to rigid (blueprint). Ignoring unintended effects. Hides disagreements.
Horizontal Logic	Requires analysis of whether objectives are measurable. Helps establish monitoring and evaluation framework.	Finding measurable indicators for higher level objectives and 'social' projects. Establishing unrealistic targets too early.	Downgrading of less quantified objectives. Rigid targets. Information overload.
Format and application	Links problem analysis to objective setting. Visually accessible and relatively easy to understand. Can be applied in a participatory way.	Prepared too late and mechanistically. Problem analysis & objective setting not always linked. Risks marginalised. High demands for training and judgement.	The same fixed format applied in all cases. Used for top-down control. Can alienate staff. Becomes a fetish rather than a help.

A selection of logframe matrix examples, which include indicators and means of verification for component, purpose and goal level objectives (as well as outputs), are provided at Annex 2.

5. Implementation, resource and cost schedules

Once the Logframe matrix is considered sound, the structure can then be used as a framework for preparing implementation, resource and cost schedules.

Activities leading to outputs can be specified in more detail and scheduled on a Gannt chart format. The inputs required for each set of activities/output can then be specified and also scheduled over time. And finally, the cost of inputs can then be determined and a project budget estimate and cash flow calculated.

Attachment 1
Logframe Matrix examples

A selection of logframe matrix examples are provided on the following pages.

Community Forestry Project - Vietnam

	Project Description	Key indicators	Means of Verification	Assumptions/Risks
	Goal To increase wood supply and farmer incomes, & to help arrest the process of soil degradation in the project area on a sustainable basis	Volume of wood harvested Family income from tree products Soil structure & fertility	Annual sample survey of farmers conducted by DFOs Soil sample survey in years 1 & 4 by FRI	
1	**Component Purpose 1** To establish improved community based forest management practices among members of the Ben Da Farmers Association (BFA)	No.of 'active' BFA members % of farmers 're-adopting' recommended practices in subsequent years & their understanding of key husbandry/management practices	Association membership & meeting attendance records kept by BFA Annual sample survey of farmers conducted by DFOs	Market liberalisation policies are maintained Market prices for commercial tree products exceed production costs
1.1 1.2 1.3 1.4	**Outputs** Land distribution will have been completed for garden forest & woodlots for 1,600 families 40 village extension workers will have been identified, trained & resourced Farmer field days will have been conducted, supported by appropriate extension & awareness materials BFA executives and staff will have been trained in management, accounting and administrative skills	Area distributed & no.of beneficiaries No. of VEWs trained , average no. of days training conducted & VEW kits distributed No. of farmer field days conducted, topics, location & attendance No. of people trained by topic and self assessed quality of the training provided	Land register kept by District People's Committee VEW training register kept by DFOs & Forestry Adviser, reported quarterly. Kit procurement records Field day records kept by VEWs and reported quarterly Training reports prepared by contracted trainers and training evaluation reports completed by trainees. Ex-post assessment 6 months after training	At least 40 farmers are willing & able to become VEWs District People's Committee provides payment in rice for VEWs working with the project, and these farmers continue to work with the project after training Extension
2	**Component Purpose 2** To expand, diversify and improve the tree planting and forest management program in the project area	Ha. planted by species, survival rates, growth rates % of targeted farmers adopting recommended practices	Annual sample survey of farmers conducted by DFOs & Forestry Adviser	Farmers find the trees and technology on offer relevant to their needs & have the time & resources to participate
2.1 2.2 2.3 2.4 2.5	**Outputs** 4 nurseries & input supply stores will have been established Garden forest will have been established for 1600 families Woodlots will have been established for 400 families Protection/economic forest will have been established in selected areas of 'bare' hills for community use Agroforestry species trials will have been established	No. of nurseries established , stock & distrib records Ha. planted by species & no. of families Ha. planted by species & no. of families Ha. planted No. of trials by species & location	Nursery inventory & distribution records kept by nursery & input supply managers, reported quarterly VEW field journal planting records, reported quarterly " " FRI trial reports kept by field officer, annually	Farmers are able to transport seedlings from the central nurseries to their gardens An adequate supply of quality seeds can be obtained
3	**Component Purpose 3** To strengthen the technical and extension skills of the district forestry service officers working with farmers in the project area	Client satisfaction with the knowledge & approach of DFOs in the project area	Annual sample survey of farmers conducted by BFA (Forestry Adviser)	The District Forestry Service does not prematurely transfer trained officers from the project area DFS continues to actively support project objectives
	Outputs DFOs will have been trained in extension & technical skills DFOs will have been trained in project management, monitoring & reporting skills	No. of days training conducted per DFO by topic "	DFO training records kept by Forestry Adviser & reported quarterly "	The DFS maintains its commitment to a new approach to extension based on a partnership with farmers Management reporting systems are accepted as relevant & useful by DFOs

Protected Areas System Project - Maldives

Project Description	Indicators	Means of Verification	Assumptions
GOAL To contribute to the protection of biological resources in the Maldives and thereby support long-term sustainable development	Species numbers and diversity within protected areas. Reduction in coral mining. Area protected by classification.	Longitudinal marine surveys conducted by Marine Research Section with support from other stakeholders. Protected areas database managed by Environment Unit.	
COMPONENT 1: INSTITUTIONAL STRENGTHENING **Purpose** To develop government capacity to design and manage a system of protected areas	Actual achievement of component 1 and 2 outputs against plan Qualitative assessment through interviews and focus groups	Project progress reports. Yr. 3 evaluation of project progress and initial impact	Government uses enhanced capacity to support effective community participation in the planning and management of protected areas (PAs).
Output 1.1 Additional GOM staff recruited, a local Project Director and Project Manager appointed and operational resources provided through the GOM budget	No. of staff (M/F) working on PAS programs. Level and adequacy of GOM budget appropriations and expenditure.	GOM staffing records. Interviews with agency management. GOM budget documents and expenditure records.	Adequate financial resources are appropriated by GOM and released in a timely manner. Appropriately skilled and motivated staff are available and recruited.
Output 1.2 Training needs of selected government staff identified and appropriate training activities designed and delivered	Training Needs Analysis completed. No. of staff trained (M/F) by topic and type of training. % of trainees assessing training as useful against agreed rating scale.	TNA report. Training completion reports. Training evaluation reports.	Trained staff continue to work with the project for a reasonable period after training. Training is relevant and focused on key competencies. Places are available at Australian institutions for relevant post -graduate courses
Output 1.3 Legislative amendment requirements identified and new draft regulations prepared	Draft regulations prepared and endorsed by PCC and NCPE	Legal expert's final report and PCC minutes.	Recommended regulations are acceptable and endorsed in a timely manner.
Output 1.4 Operational Guidelines for Protected Area Systems management prepared	PAS guidelines approved by PCC, printed and distributed.	Guidelines on file, distribution record, and PCC minutes.	There is institutional and management support for using and following the Guidelines
Output 1.5 Biodiversity, socio-economic and cultural surveys carried out in identified priority areas and an appropriate data base established	No. of areas identified, area, type, popn. No. of surveys conducted by type. Data entered and accessible from database.	Survey reports. Database printouts, accessibility, quality.	Consensus can be reached on priority areas. The inventory and database can be locally managed and sustained after initial set -up and training.
Output 1.6 A financing framework for protected area management prepared	Financing framework prepared and endorsed by PCC.	Framework document on file and PCC minutes.	A workable financing framework is endorsed and established with stakeholder support.

Project Description	Indicators	Means of Verification	Assumptions
COMPONEN T 2: PROTECTED AREA ESTABLISHMENT **Purpose** To establish 3 pilot protected areas which have broad based community support	3 pilot areas established in law. Management plans, regulations and local management structures in place. No. of active conflicts over resource use and recorded violations of regulations	Government gazette. PA monitoring reports (see 2.6). PA monitoring reports	The regime established in pilot areas provides adequate benefits to community and private sector stakeholders to ensure their sustained support.
Output 2.1 A culturally appropriate framework and program for stakeholder consultations and participation devised and carried out	Participation program and method documented and endorsed by PCC. No. of consultations, type, purpose, attendance (M/F)	Project files and PCC minutes. Aggregated field report records.	These consultations result in a genuine partnership approach to PA management based on mutual interest and trust
Output 2.2 Three pilot protected areas identified in consultation with community members and private sector stakeholders	Signed MOU between stakeholders endorsed by PCC.	Project files and PCC minutes. Stakeholder interviews.	Stakeholders can effectively negotiate a consensus position on resource management issues.
Output 2.3 Community training/information needs identified and a program of appropriate activities carries out	Training/information needs assessment report produced and approved by PCC. No. of training activities, type, attendance (M/F) % of trainees assessing training as useful against agreed rating scale	Project files and PCC minutes. Project Training completion reports. Training evaluation reports files	The information provided leads to better understanding and informed participation among community stakeholders. Training effectively supports improved understanding, skills development and behavioural change.
Output 2.4 An analysis of the biological and socio-economic costs and benefits of implementing alternative management regimes within pilot areas carried out	Cost benefit assessment completed & documented, identifying impact on different stakeholder groups. Awareness of options among stakeholders effectively raised.	Project files Awareness survey	The information is effectively accessed by stakeholders and provides useful management information to support PA design
Output 2.5 Management plans for three pilot protected areas jointly prepared, endorsed by all key stakeholders and implemented	Quality of public participation process. Memoranda of Agreement signed by stakeholders and endorsed by PCC. Gazettal of protected areas.	AMC, PCC and TAG assessments Project files Stakeholder interviews.	Management plans are implemented and provisions effectively enforced.
Output 2.6 Community based monitoring systems established	Availability of appropriate information at the community level to support protected areas management	Ranger reports Focus group meetings with stakeholders	Information is effectively disseminated to stakeholders and used to address PA management problems.

Protected Areas System Project - Maldives

Project Description	Indicators	Means of Verification	Assumptions
COMPONENT 3: EDUCATION & AWARENESS **Purpose** To increase community awareness and understanding of the benefits and costs of environmental conservation and to promote their input to establishing protected areas	Change in knowledge, attitudes and practices.	Longitudinal KAP surveys in targeted areas. Designed and supervised by CRMS	Increased awareness results in changed attitudes and behaviour.
Output 3.1 Informational materials and guidelines on the establishment of protected areas prepared for public and community use	Type, No. and quality of materials provided. Audience response.	Education development centre records. Focus groups or other qualitative data collection techniques	Materials are effective and accessible to target groups
Output 3.2 Radio and television programmes on protected areas issues prepared and broadcast **COMPONENT 4: PLANNING AND MANAGEMENT SUPPORT** **Purpose** To effectively manage and report on Australian contributions to the project and coordinate activities with GOM stakeholders	No. and quality of programs produced and total airtime. Audience response. No. of inception workshops, duration, location, attendance (M/F). Planned/actual achievement of outputs. Planned/actual expenditure. Satisfaction of GOM and AusAID with contractor performance.	Education development centre and Voice of Maldives records. Inception workshop reports. Project progress reports. Project financial reports. Contractor performance assessment reports.	Programs are watched/listened to by the public and provide relevant and useful information An effective working relationship is established with GOM counterparts.
Output 4.1 A project office and management/monitoring systems established and equipment procured	No. of staff in place (M/F). Quality of service. Equipment procured and maintained.	Project staffing records. PCC and AusAID assessment reports. Equipment register.	Appropriately skilled and motivated Australian tong-term TA is recruited. Equipment is adequately maintained. AusAID & MC provide adequate resources
Output 4.2 A Technical Assistance and training schedule designed and implemented	Schedules produced & approved by PCC. Mandays TA provided (M/F), purpose, location.	Project TA and training records.	Training and short-term TA is appropriately designed and delivered and impacts positively on work performance
Output 4.3 Regular Project Coordinating Committee meetings held and minutes produced	No. of PCC meetings & attendance (M/F) Timeliness and quality of PCC minutes.	PCC agendas and minutes.	Meetings are professionally managed, attendance is adequate and decisions are effectively acted upon.
Output 4.4 An inception report, annual plans, regular progress reports and a completion report prepared and submitted to AusAID and the GOM	Reports completed on time, meeting established quality criteria and endorsed by the PCC.	GOM, Managing Contractor and AusAID files.	Reports meet required quality criteria, provide clear and useful management information and are acted upon, as appropriate, by PCC members.