TECHNICAL NOTE

The Logical Framework

This document describes the rationale, theory, and essential elements of the LogFrame as it relates to USAID's Program Cycle

Technical Notes are published by the Bureau for Policy, Planning and Learning and provide key concepts and approaches to USAID staff and partners related to the Program Cycle.

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INTRODUCTION

The Logical Framework, or LogFrame, is one of the principal tools used by the international development community to help design projects to achieve measurable results. It was pioneered for USAID in the 1970s and has since been widely adopted by multilateral and bilateral agencies, NGOs, governments and implementers. The LogFrame is useful to both managers and evaluators at every stage of the project cycle. It is a vehicle for organizing a large amount of information in a coherent and concise manner, assisting with the design, implementation and evaluation of projects. The process used to develop the LogFrame supports USAID principles of selectivity and focus, evaluation and learning, and adaptation and flexibility. In sum, the LogFrame:

- Fosters a clearly stated, explicit and measurable description of what will happen if a project is successful, along with the project hypotheses underlying the design.

- Clarifies what the Mission and project team should be responsible for accomplishing and why, in unambiguous terms.

- Displays the key elements of a project, and their relationship to each other, in a way that facilitates analysis, decision making, and measurable impact.

BACKGROUND

In 1969, to "discover where they were going and how they were going to get there", USAID commissioned a study of its project evaluation system. The LogFrame was originally developed in response to the issues uncovered in that study. It remains relevant today, as international development agencies and programs are mandated to justify program expenditures based on results, particularly in an era of budget austerity. The LogFrame continues to be a critical tool that the international development community uses to help design projects to achieve measurable results. This includes AusAid, DFID, World Bank, Sida, UNDP, and many others.

KEY CONCEPTS

A project is a set of interventions or activities with a defined budget and timeline intended to achieve a result by solving an associated problem. The LogFrame is the tool that must be used as the basis for designing projects. The LogFrame complements the Results Framework (RF) in a Country Development Cooperation Strategy (CDCS) by carrying the development hypothesis through from the overall program to the supporting projects and their associated activities, in the form of the project hierarchy (sometimes referred to as the project hypothesis). Its methodology is based on rigorous identification and analysis of the underlying problem. It assumes that a development project is an instrument of change, and that it was selected from among alternatives as the most potentially cost□effective approach to achieving a desired and most beneficial result..

Narrative Summary	Indicators	Data Sources	Assumptions
Goal			
Purpose			
Sub-Purposes			
Outputs			
Inputs			

Figure 1 The Basic LogFrame Matrix

The key elements of the LogFrame Matrix include the narrative summary, the indicators and their data sources, and the assumptions. The narrative summary identifies the hierarchy of results in the project hypothesis, from lowest level result to highest level result, as well as the activities and other resources applied to achieve them. **Inputs,** which include the project activities, are the resources the project expends in order to produce outputs—for example, supplies, equipment, office space, or technical assistance. **Outputs** are what are produced as result of inputs. They are the tangible, immediate, and intended products or consequences of an activity within USAID's control or influence - the deliverables. All outputs that are necessary to achieve the purpose should be identified. The **Purpose** is the key result to be achieved by the project.   The Mission project team is accountable for achieving the project Purpose. It is also possible to add levels of results depending on the scope and complexity of the project, which would be included as **Sub-Purposes**, contributing to achievement of the Purpose. The **Goal** is a higher-level result to which the project, along with others, will contribute. It is the strategic rationale for the project, and is also most often the Development Objective (DO) of a Mission's CDCS. The Outputs, Sub-Purposes, Purpose and Goal must be stated as results. **Indicators** measure a particular dimension or characteristic of a result in the LogFrame and are the basis for observing progress toward that result. **Data sources** specify exactly where the indicator data will come from, and when it will be collected. The project's hypothesis statement is reflected in the narrative summary. It is supported by **Assumptions**, which are the most critical factors that could affect achievement of the project's planned results and have implications for the project's hypothesis.

HIERARCHY AND LOGIC

Narrative Summary	Indicators	Data Sources	Assumptions
Goal	Then Goal		
Purpose	If Purpose Then Purpose		And Assumptions
Sub-Purpose	If Sub-Purposes Then Sub-Purposes		And Assumptions
Outputs	If Outputs Then Outputs		And Assumptions
Inputs	If Inputs		And Assumptions

The Narrative Summary of the LogFrame describes "how" a developmental change will be achieved (top-to-bottom) as well as "why" or "so what" (bottom-to-top). Note that the LogFrame describes causality. It does not describe the sequencing of activities and results that may be required to achieve developmental changes. "Causal thinking" should not be confused with "sequential thinking". Sequential thinking would say, "First we plant seeds, second we train farmers, third crops will grow." Using causal logic, one should say "IF we plant seeds AND we train farmers to cultivate them, THEN crops will grow." However the LogFrame serves many purposes, and can be used to guide appropriate sequencing of project activities to inform a critical path analysis, Gantt chart, or work plan, etc. A LogFrame is not static and must be linked to learning and adaptation. The causal logic underlying a project's LogFrame should be routinely tested, refined and adapted based on monitoring results achievement, learning based on that monitoring and other information gathered during implementation especially tracking the evolution of assumptions and changing contexts.

When developing a LogFrame, the project design team most often starts from the top and works down.

- Beginning with the Goal usually defined by the identified DO from the Mission strategy (CDCS), the team will then select the Intermediate Result (IR) that is the starting point for the Purpose of the project. There is flexibility to set the Purpose and Goal at higher or lower levels of the RF (for example, setting the Goal at an IR, and the Purpose at a Sub-IR.

- The team will conduct a problem analysis (e.g. Fishbone Analysis or a Problem Tree) in order to focus the Purpose statement.

- From that process the team will identify and select the full set of Outputs, or lower level results, that must be both necessary and when taken together sufficient to achieve the Purpose, given the assumptions.

- Note that in large or complex projects it is likely that an additional level of "Sub-Purposes" will be necessary, when the causal "leap" from Outputs to Purpose may be too great.

- At the lowest level of the LogFrame matrix are Inputs. These are the activities as well as resources invested in the project, for example funds, equipment, training, etc. to achieve the Outputs.

- Throughout this process the LogFrame is informed by mandatory Gender, Environmental and Sustainability analyses as well as any supplemental analytical work that the Mission deems necessary.

The hierarchy between levels can be tested by asking the questions "how" when moving down the causal chain, "why or "so what" when moving up the causal chain, and "what else" at each level, verifying that the necessary and sufficient results are identified at each level. Working from the top-level result to the bottom ensures that the project design is consistent with the Mission strategy. Working from the bottom up, including assumptions, verifies the logic and increases likelihood of success.

LINKAGE BETWEEN A CDCS RESULTS FRAMEWORK AND A PROJECT LOGFRAME

The Results Framework (RF) is a strategic planning tool which helps Missions identify the development hypothesis and think through what results lead to other results. The LogFrame allows the Mission to define exactly what resources need to be allocated to achieve the results. As shown in Figure 2, a project Goal corresponds most often to a Development Objective, while the project Purpose most often constitutes USAID's support for achieving an Intermediate Result (IR). If the Mission decides to include all results needed to achieve the IR in the project design, then the LogFrame will need to include all Outputs necessary and sufficient to achieve the project Purpose, including those provided by other donors and partners.

A project is not a stand-alone effort. The project is one of the necessary interventions for achieving the DO, but will often not be sufficient by itself to achieve it. The project together with other Mission projects (corresponding to other IRs), as well as other identified partner programs, should be both necessary and sufficient to achieve the DO. Other partner programs that are within the manageable interest of the project should be reflected as Outputs in the LogFrame (partner Inputs are not included). This means those that the Mission will take steps to influence through donor coordination or joint funding in order to achieve the Purpose. Manageable interest at the project level is not a synonym for "direct control". It defines not just those results the Mission actually funds and otherwise achieves through direct Mission action, e.g. policy dialogue, but also those things the Mission influences through its partners. In other words manageable interest at the project level includes not just Outputs and Sub-Purposes, but achievement of the Purpose as well, reflecting a confidence that the assumptions are valid or can be influenced.

Other partner programs that are also considered necessary to achieve the Goal should be identified in the Mission Results Framework, but are not included in the Project LogFrame.
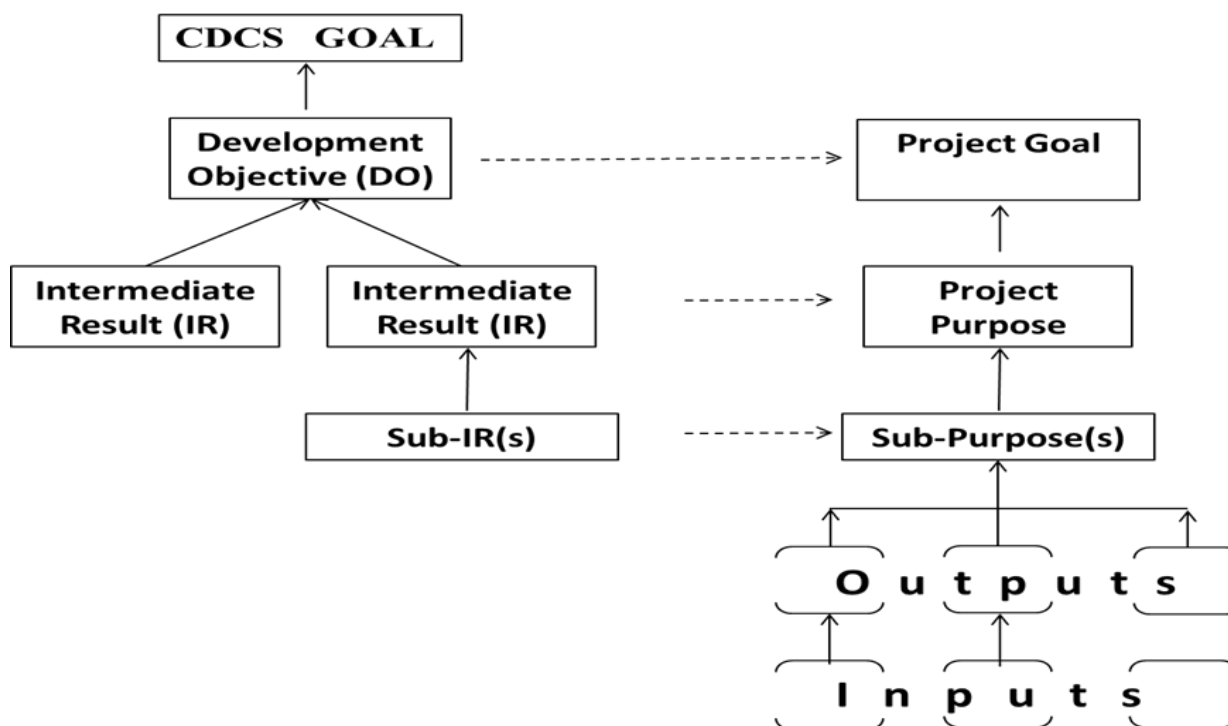

Figure 2 Linkage between RF and LF   4

ASSUMPTIONS AND RISK

Narrative Summary	Indicators	Data Sources	Assumptions
Goal			
Purpose			
Sub-Purposes			
Outputs			
Inputs			

The LogFrame defines, at each level, all of the necessary and sufficient conditions that, when taken together, must be in place to achieve the next level result. This refers to those conditions both **within** as well as **outside** the Mission's direct control. The Outputs in the narrative summary column of the LogFrame matrix include those that are within the Mission's direct control and reflect USAID-implemented resources, as well as partner resources that we are influencing. The assumptions column clarifies those factors necessary for achieving the project Outputs, Purpose and Goal that are outside of the Mission's manageable interest, e.g. inflation stays under control. The LogFrame requires that at each level the results planned **plus** assumptions at that level constitute sufficient conditions to achieve the next higher level of results.

Assumptions can be the critical factor in the success of a development project. After identifying the critical assumptions, the project design team should analyze each one in order to:

- Define the assumption as a specific, measurable condition, if possible
- Verify the validity of the assumption
- Assess the degree of criticality of the assumption
- Assess risk
- Identify ways to mitigate risk
- Monitor changes in the status of the assumption

> Defining the assumptions inherent in the hypothesis reveals the nature of uncertainty underlying the project design, by clarifying the extent to which achievement of the project purpose depends on external factors outside the Mission's manageable interest.

Validity: If rain must begin in May and last through October, with a monthly average of 12 inches, is that reasonable? Critical assumptions should have a reasonably high probability of occurring to remain valid. "Killer assumptions" are those that are critical to success, but in the best analysis available, are unlikely to hold during project implementation. So, for example, if analysis of climatic history in the region shows that in the past eight years rainfall was less than eight inches in May and June, the assumption of adequate rainfall would be invalid, and that might be a "killer assumption".

Importance: When a project design team knows that the validity of the assumption is weak, the team must assess how the assumption will affect the probability of success. In the example of increasing crop production, adequate water is critical to success of the project, but if water can be supplied from sources other than rainfall, e.g. by adding an irrigation component to the project, the importance placed on rainfall may be reduced.

> The LogFrame requires that at each "level" the activities or results planned plus assumptions at that level constitute sufficient conditions to achieve the next higher level. Therefore instead of saying: "IF we plant seeds, THEN crops will grow." it is better to say: "IF we plant seeds AND assuming there is sufficient rain, THEN crops will grow."

Assess risk: Project design teams must assess the risk to the project by estimating the probability of failure due to a high-risk assumption. What level of risk is acceptable? Consider whether the assumption is critical, if the project is innovative or experimental, if the project is an expansion or replication, etc. Tools such as Force Field Analysis can assist with risk assessment.

Mitigate the risk: If the risk is too high, project design teams must take steps to mitigate the risk or address the problem that results from a risk. Is there something the project itself can do to effect the necessary change? For example, the project planners could look into adding or diverting resources to develop an irrigation system, or focus on drought-resistant varieties. If the project cannot expand, perhaps another donor could take on this task. If there are no means to address the problem, then two other possibilities arise: either the planned results of the project should be modified or the project should be abandoned as unfeasible, thereby freeing resources for alternative projects.

Monitor changes in the status of assumptions: The design stage is when teams should determine how best to monitor their assumptions, through either quantitative or qualitative indicators (i.e. inflation rates, statements in support of a specific reform by ruling party, etc.). It is necessary to address assumptions not only during the design stage of the project but also during the course of project implementation and evaluation. Once the project begins, the project manager ensures that assumptions are monitored regularly so that corrective action can be taken in a timely manner. Assumptions are also important during an evaluation because their examination can provide insight into why the project has or has not succeeded in achieving its objectives.

INDICATORS

Narrative Summary	Indicators	Data Sources	Assumptions
Goal			
Purpose			
Sub-Purposes			
Outputs			
Inputs			

The LogFrame requires the project design team to define clearly and explicitly what will indicate project success i.e. achievement of the project purpose. The second column of the LogFrame matrix identifies performance indicators that signal successful achievement of the project Goal, Purpose, and Outputs at each level of the project hierarchy.

In addition to defining success, indicators add clarity and dimension to the narrative statement of the results. Result statements, particularly at higher levels, such as Purpose and Goal, tend to be defined broadly

and as such may be open to different interpretations by project stakeholders. For example, a Purpose statement expressed as "Farmer crop production increased in northeastern region" does not explain which farmers, what type of crops, how much of an increase is expected, or in what timeframe. It often happens that in the process of defining indicators to measure the objective statement, project design teams are compelled to clarify or alter the objective to better reflect the exact change desired, for example; "Male and female smallholder farmer commercial crop production increased in northeastern region". Throughout the project design process the LogFrame is expected to change, as the process raises important questions and forces continual refinement of the design.

Indicators must be included for each result of the project LogFrame. There is not a required number; the number of indicators necessary to measure success is that minimum number that adequately captures the dimensions of the specific change defined by the objective. However, given the cost of data collection and analysis, a good rule of thumb is 1-3 indicators per result. All USAID projects are required to have monitoring and evaluation plans that incorporate indicators for LogFrame results as well as assumptions, and evaluation questions.

Baseline and targets: Setting baselines and targets for every indicator for each result in the LogFrame is a critical requirement for a robust monitoring and reporting system. Each indicator must have a baseline value established and a target amount projected for end of project and appropriate intervals. Baselines are the value of a performance indicator at the onset of implementation of USAID-supported projects. Baselines should be established before project implementation begins. A target is the amount of expected change in a performance indicator to be achieved within an explicit timeframe with a given level of resources. The target should specify quantity, quality, and time. Target-setting should be based on analysis of past trends, experience of similar activities, expert opinion, and the existence of objective international, sectoral or other quality standards. Without targets and baselines, data collected for indicators become episodic and insufficient to evaluate achievement of the project purpose.

END OF PROJECT STATUS (EOPS)

Because the project Purpose defines the main achievement of the project, the indicator or set of indicators at that level has been given a special name: end-of-project status (EOPS). A well-defined, unidimensional objective should be adequately measured by a single indicator. However, as Purpose statements can be complex, it is sometimes the case that no single indicator suffices. In that case a set of 2-3 indicators may be needed.

	Narrative Summary	Indicators	Data Sources	Assumptions
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EOPS: 30,000 smallholder farmers increase commercial crop yields (tons per hectare) by 50% from baseline to end of project: M: 20,000 F: 10,000

DATA SOURCES

As part of the process of identifying indicators, the project design team must ask "How will we collect the data described by the indicators?" and identify the data

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sources in the LogFrame. The indicators demonstrate achievement of results □ but, if the data about how much farmers have harvested cannot be obtained, then the project manager can neither know nor prove that production increased. Usually an alternative indicator can be substituted for which appropriate and timely data can be obtained. The frequency with which the project manager will obtain information from stated sources should be indicated in the data sources column. The utility of an indicator is limited by the means available to verify it. Finding data for some indicators may require just a quick review of project or government records whereas other indicators require sophisticated data collection and analysis. Data collection costs time and money, which is why the data source and collection method must be identified during the design stage of a project and necessary staffing and money included in the project Inputs. If these are not planned early in the project, they may not be available when they are needed.

DEFINITIONS FOR PERFORMANCE MONITORING

Indicator: An indicator is a particular characteristic or dimension used to measure intended change for a given result.

Baseline: The value of a performance indicator that exists prior to implementation of the program, project or intervention.

Target: The specific, planned values of the performance indicator to be achieved within an explicit timeframe with a given level of resources.

Proxy Indicators: Those indicators that are indirectly linked to the result. For example, in rural areas of Africa it is difficult to measure income levels directly. Measures such as number of cell phones per household may be a useful, if somewhat rough, proxy.

Disaggregation: The process of separating indicators into sub-categories to be tracked in order to reveal differences that are hidden in aggregated data. Indicators may be disaggregated along several dimensions, including location, income, ethnic group, sex, age, activity implementer, etc. Note, all people-level indicators must be disaggregated by sex.

Goal Smallholder farmer income increased in Northeastern region
Purpose Male and female smallholder farmer commercial crop production increased in Northeastern region
Sub-Purpose 1 New commercial farming techniques adopted by male and female smallholder farmers **Outputs** 1.1 Increased knowledge of male and female smallholder farmers about commercial farming techniques 1.2 Male and female smallholder farmers assisted by government extension workers
Sub-Purpose 2 Male and female smallholder farmers' use of bank credit increased **Outputs** 2.1 Increased knowledge of male and female smallholder farmers about credit system 2.2 Credit System established and functioning
Sub-Purpose 3 Fertilizer and high yield variety seed distribution system is established and functioning **Outputs:** 3.1 Distribution centers constructed 3.2 Cell phone-based market information system established
Inputs: **Activities** Design distribution system Recruit M/F smallholder farmers Develop gender-sensitive training materials for smallholder famers Train M/F smallholder farmers in commercial farming techniques Train extension workers, etc. **Resources** Trainers, Training materials, Fertilizer, Seeds, Extension workers, Construction, Technical Assistance, IT support, etc.

AN EXAMPLE

The Goal, Purpose, and Sub-Purposes (if any) and Outputs are statements of results. They should be defined clearly and concisely, at the appropriate level of ambition, and give consideration to gender-based disparities. It is important to phrase each result statement as concisely as possible, reflecting the desired level of impact in unambiguous, unidimensional, and objective terms. In other words, if the desired result is to improve the livelihood of smallholder farmers, then the project design team should carefully define the level of change, be it income, farm revenue, production or another dimension of change for the target group, including men and women. A common mistake is to include the "how" of that change with words such as "through", "by", or "in order to". Multidimensional statements like these should be broken down into discrete results, placed logically in the causal chain, and defined as Inputs, Outputs, Sub-Purposes, Purpose or Goal as appropriate.

In this example, the Goal "Smallholder farmer income increased in Northeastern region" is defined at a relatively high level of impact, reflecting a change in the condition of people that may take a longer time to achieve. The project Purpose "Male and female smallholder farmer commercial crop production increased in Northeastern region" is one of several results necessary to achieve the Goal, but it is not sufficient to achieving it alone. This Purpose reflects a change in the condition of the target group, including both men and women. Results of three Sub-Purposes, when combined, are necessary and sufficient to achieve the project Purpose. These are defined as Sub-Purposes in the project, as they involve behavior change and institutional performance; therefore they are at a higher level of impact than Outputs. The Outputs reflect changes in individual knowledge and institutional systems that are necessary to achieve the Sub-Purposes.

ADDITIONAL RESOURCES

The following resources can be used as supplemental material to provide more background information on LogFrames. Where information differs, the USAID ADS (Automated Directives System) 200 series take precedence over other resources.

AusAid, AusGuideline 3.3: The Logical Framework Approach, 2005

http://www.ausaid.gov.au/ausguide/Documents/ausguideline3.3.pdf

DFID, How To Note - Guidance on using the revised Logical Framework, January 2011.

http://www.dfid.gov.uk/Documents/publications1/how-to-guid-rev-log-fmwk.pdf

Practical Concepts Incorporated, The Logical Framework, A Manager's Guide to a Scientific Approach to Design and Evaluation, November 1979

The World Bank, Logical Framework Handbook

http://www-wds.worldbank.org/external/default/WDSContentServer/
WDSP/IB/2005/06/07/000160016_20050607122225/Rendered/PDF/31240b0LFhandbook.pdf

Sida, The Logical Framework Approach, January 2004

http://www.eejp.org/resources/lfa_approach.pdf

Solem, Richard Ray. A.I.D. Working Paper No. 99, The Logical Framework Approach to Project Design, Review and Evaluation in A.I.D.: Genesis, Impact, Problems, and Opportunities, April 1987

USAID, Automated Directives System (ADS), Chapter 201, Planning