Monitoring and Evaluation Manual

Prepared for
ADRA International
Food Security Department

Prepared by
TANGO International, Inc.
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Acronyms

ADRA	Adventist Development and Relief Agency International
AIDS	Auto Immune Deficiency Syndrome
BCC	Behavior Change Communication
CDC	Centers for Disease Control
CDD	Control of Diarrheal Disease
CHW	Community Health Worker
CORE	Child Survival Collaborations and Resources Group
DD	Diarrheal Disease
DHS	Demographic and Health Survey
DME	Design Monitoring and Evaluation
DR	Development Relief
FANTA	Food and Nutrition Technical Assistance
FFP	Food for Peace
GAVI	Global Alliance for Vaccines and Immunization
HIF	Hygiene Improvement Framework
HFA	Health Facility Assessment
HFS	Health Facility Survey
HIS	Health Information Survey
HIV	Human Immunodeficiency Virus
HLS	Household Livelihood Security
HMIS	Health Management Information Systems
ICHS	Integrated Child Health Survey
IEC	Information, Education and Communication
IFAD	International Fund for Agricultural Development
IMCI	Integrated Management of Childhood Illnesses
KAP	Knowledge, Attitude, Practice
MCH	Maternal and Child Health
MEASURE	Monitoring and Evaluation to Assess and Use Results
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MFI	Micro-finance Institutions
MICS	Multiple Indicator Cluster Survey
MIS	Management Information System
MSE	Micro and Small Enterprise
NGO	Nongovernmental Organization
PMTCT	Promotion of Maternal to Child Transmission
PHC	Primary Health Care
RH	Reproductive Health
TB	Tuberculosis
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Part I. Overview of Monitoring and Evaluation

1. Introduction

The Adventist Development and Relief Agency (ADRA) is an independent humanitarian organization established in 1984 by the Seventh-day Adventist Church for the specific purpose of providing individual and community development and disaster relief. ADRA serves people in over 125 countries regardless of ethnic, political or religious association. ADRA helps those in need, particularly those most vulnerable such as women, children and senior citizens.

ADRA partners with communities, organizations and governments to improve the quality of life for millions around the world through a range of core programming areas including food security, economic development, primary health care, emergency management and basis education. ADRA recognizes that current programming in each of these core areas can be strengthened through the improvement of staff capacity in project monitoring and evaluation.

Monitoring and Evaluation (M&E) has become a leading priority for many development and humanitarian organizations. Advancements in measurement approaches, indicators and targets, performance monitoring and managing for results (impact) have been made in recent years in order to adequately and effectively evaluate progress and program impact. M&E is essential in order to *design appropriate, effective, measurable* programs and projects, and to consistently and effectively *monitor* implementation and *evaluate* the impact of specific activities among target populations.

In line with this philosophy and in order to better meet programming goals, ADRA is seeking to enhance its program training with the inclusion of a monitoring and evaluation component. Building ADRA's capacity to establish effective M&E systems will improve program design and management, and ensure that new projects develop M&E plans appropriate to the particular programming and vulnerability context.

This manual is directed towards programmers and M&E technical staff within the ADRA network who are responsible for collecting, analyzing and distributing information on programs. It is designed to guide program managers and M&E staff in the establishment and use of monitoring and evaluation *systems* for large programs, specific program components and small projects alike. It should serve as a guide to improve understanding of M&E in general and increase competency in key aspects of practicing M&E in the field.

1.1 Purpose of the Monitoring and Evaluation Manual

This manual introduces fundamental concepts and components of M&E. It then presents definitions of the basic components of an effective M&E system and offers guidance for adapting each component to local programming contexts. It also provides key considerations for the development of appropriate M&E tools within the primary sectors in which ADRA works. Perhaps most importantly, the manual is intended to contribute to the learning environment within ADRA by describing the ways in which a comprehensive M&E system can be consistently used to inform problem analysis, program design, implementation, monitoring and reporting of evaluation findings.

The M&E Manual is intended to strengthen the following principal competencies:

- Understanding conceptual frameworks for program design and planning upon which monitoring and evaluation systems will be based;

- Identifying and distinguishing between the key components of monitoring and evaluation systems;

- Understanding the synergistic relationships between program design and management, and M&E systems in order to determine the expected impact and objectives and how they will be achieved;

- Knowledge of the various tools and frameworks for M&E design planning and management;

- Determining appropriate indicators and targets for both implementation *processes* as well as project *outcomes and impact*;

- Identifying potential sources and tools for collecting and analyzing information, and tracking progress and impact;

- Developing effective, flexible and responsive M&E Plans; and

- Recording and sharing information on best practices and lessons learned in M&E throughout the organization.

1.2 Using the Manual

This manual is not intended to serve as a mandatory, "one size fits all" instruction booklet for project monitoring and evaluation. Rather, it offers a set of concepts and tools that will assist individual ADRA program staff to improve current approaches to M&E, thereby facilitating more consistent achievement of program objectives. The concepts and tools within this manual have been thoroughly tested and have been recognized as M&E "better practices" by NGOs and leading developing agencies including the International Food Policy Research Institute (IFPRI), the International Fund for Agricultural Development (IFAD), the World Food Programme (WFP) and the Food and Nutrition Technical Assistance (FANTA) Project.

In order to make the material optimally useful for ADRA staff with varying levels of M&E experience, the manual has been divided into three core sections:

- ➤ *Part One* of the manual provides a broad overview of M&E as well as supporting conceptual frameworks that form the basis for effective multi-sector programming.

- ➤ *Part Two* defines critical components of monitoring and evaluation systems and discusses the tools used in various stages of project M&E.

- ➤ *Part Three* underlines the importance of designing M&E systems that are responsive to the various contexts in which ADRA's activities are implemented.

2. Guiding Principles and Elements of Monitoring and Evaluation

Monitoring and Evaluation (M&E) has become an expected and necessary component of any development program or project. The primary purpose of M&E is to measure the degree to which an operational design is implemented as planned and how successfully it achieves its intended results. This section begins with an introduction to M&E and defines key components and principles necessary to follow this guide of establishing and improving M&E systems.

2.1 What is Monitoring and Evaluation?

What is monitoring? Monitoring is a continuous process of collecting and analyzing information to compare how well a project, a program or policy is being implemented against expected results. Monitoring aims at providing managers and major stakeholders with regular feedback and early indications of progress or lack thereof in the achievement of intended results. It generally involves collecting and analyzing data on implementation processes, strategies and results, and recommending corrective measures (IFRCS, 2007).

What is evaluation? Evaluation is the systematic and objective assessment of an ongoing or completed project, program or policy, its design, implementation and results. Evaluation determines the relevance and fulfillment of objectives, efficiency, effectiveness, impact and sustainability. An evaluation should provide information that is credible and useful, enabling incorporation of lessons learned into the decision making process of both recipients and donors (IFRCS, 2007).

Ultimately, M&E systems are designed to determine the impact of projects and/ or programs. However, it also entails a regular, systematic collection and analysis of information to track the progress of project implementation. When appropriately designed and implemented, an M&E system keeps projects on track and provides information to reassess priorities. In order to do so, monitoring and evaluation must be understood as an ongoing activity that ultimately confirms and explains the nature and degree of change a particular development intervention has had on its population.

Results monitoring provides information on the progress towards achieving objectives and on the impact the program is having in relation to the expected results. It involves:
- Relating the work being done to the objectives on a continuous basis in order to
- provide a measure of progress
- Reviewing the approaches and strategies in response to the changing circumstances
- without losing the overall direction
- Identifying if there is need to change the objectives
- Identifying further information or research for learning purposes

Furthermore, although project monitoring and impact evaluation are both critical and complementary elements of an effective project, there is often a limited understanding of their distinct purposes and roles:

➤ Project **monitoring** entails the process of routinely and consistently gathering information on the process of project implementation. Monitoring focuses primarily on

the achievement of intended outputs, such as the quantity of food delivered to a distribution center, or the number of people actually receiving rations. It involves the routine collection of information on an on-going basis to support basic management and accountability functions. Monitoring is also necessary to detect changes in important contextual factors that may necessitate program adjustments. Effective monitoring of program outputs is a critical aspect of evaluating programs; unless an evaluator knows who received what quantity and quality of goods and services and at what cost, it is difficult to interpret the impact of a project (Caldwell 2002, Reily, Mock et al. 1999).

➢ Project **evaluation** is essentially an assessment of the extent to which a project is achieving or has achieved its stated outcome goals. Evaluations are designed to gauge the extent to which a project causes actual changes in conditions towards the overall project goal, such as improvements in food security status at the beneficiary level. Results from impact evaluations are critical to guide the management of current activities, to inform resource allocation decisions across project components and to support the design or re-design of future interventions to maximize their potential impacts.

A monitoring and evaluation system is constructed according to the **logical framework** or **results framework** of a project. Each level of the M&E system relates to a level in the results framework. The M&E system collects information and analyzes data at each level to assess project progress, performance, and impact.

Key Definitions

Inputs: The range of resources (staff, financial resources, space, equipment, etc.) utilized to accomplish the project's objectives.

Processes: The specific activities (training, program design, planning, etc.) to which resources are allocated in pursuit of project objectives.

Outputs: Quantifiable products (number of trainees, immunized children, activities implemented) that result from the combination of inputs and processes.

Outcomes: Identifiable beneficiary and population-level changes (improved health practices, increased knowledge of nutrition) resulting from the intervention.

Impacts: *Long-term* results observed at the beneficiary and population level (improved food security, increased resiliency to shocks, reduced labor migration, etc.) achieved due to better practices, improved knowledge, changing attitudes, etc.

Performance: General indication of project productivity in relation to its stated objectives. Performance monitoring differs from impact evaluation in that it focuses on the degree to which activities are implemented efficiently *rather than* the extent to which they have led to expected change.

Beneficiaries: The portion of the population within the target area that receive direct benefits from the population.

Source: Bergeron, et. al. (2006)

2.2 Why Does a Program Need a Monitoring and Evaluation System?

Monitoring and evaluation are needed in order to:

√ Provide continual feedback on project components and processes
√ Detect contextual shifts and changes in the status of the target population
√ Inform decisions on operations, policy or strategy
√ Facilitate accountability for project resources to donors and participants
√ Demonstrate positive, sustainable results of project activities
√ Identify successful strategies for extension, expansion or replication
√ Modify unsuccessful strategies
√ Capture lessons and knowledge on what works and what does not
√ Give stakeholders an opportunity to have a say in the program
√ Provide an accurate determination of program impact

In order to realize the full potential of an M&E system, it is critical that program personnel continually track the changing levels of risk, vulnerability and coping strategies in order to effectively manage responses to contextual shifts and establish needs for appropriate intervention (program design). Monitoring and evaluation should be approached as a "*continual learning process rather than a single information gathering exercise*" (Guijt et al. 2002).

2.3 General Overview of Basic Elements of a M&E System

Every project design employs a *hierarchy of basic elements* known as: *inputs, activities, outputs, outcomes, and impacts*. These elements of project design are also components of a logical framework and a results framework and of the M&E system for that particular project.

Figure 1: Project Hierarchy
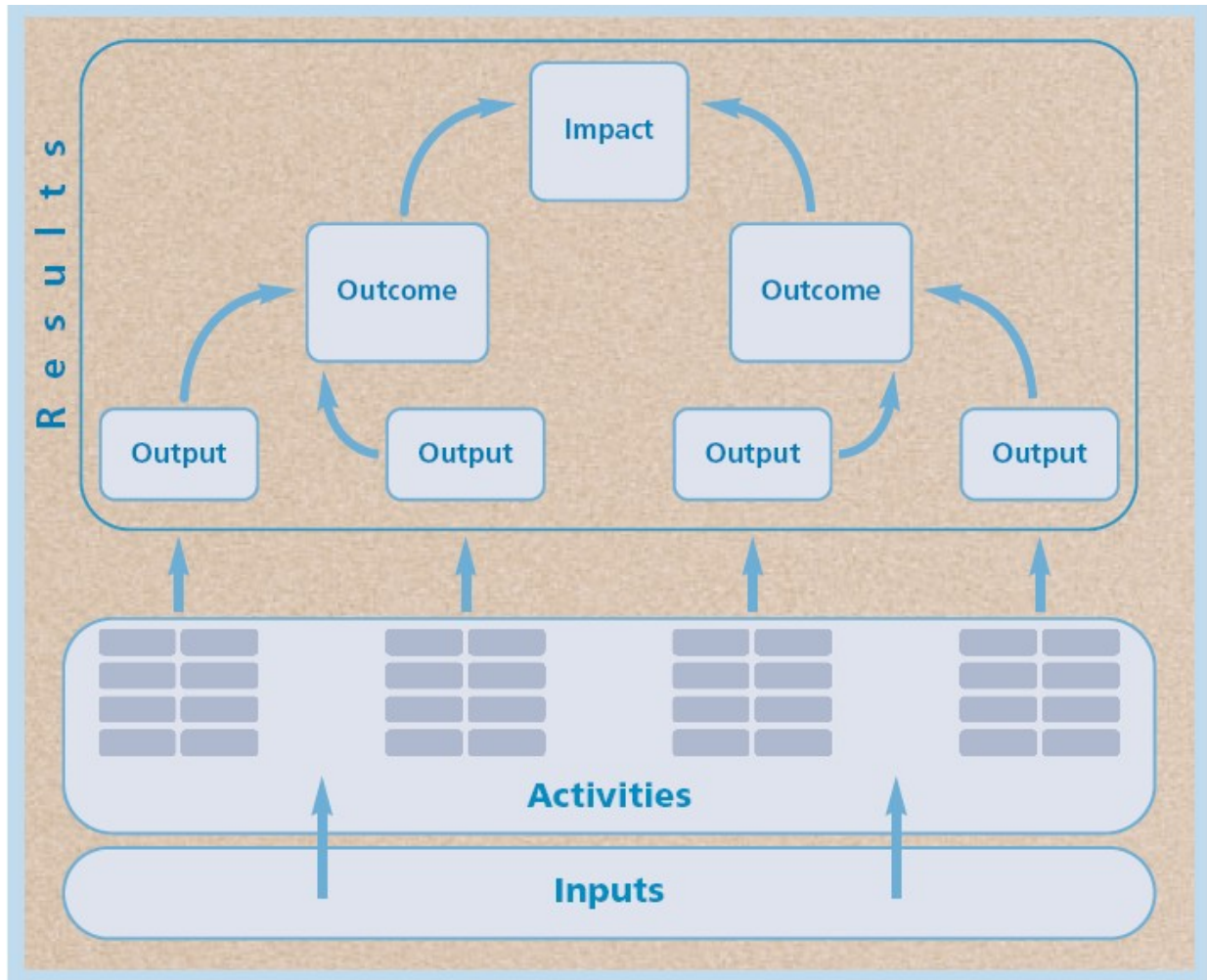
Source: WFP, 2003

As illustrated in Figure 1, a project employs a progression of activities that is consistent from the design through implementation to the evaluation stage. These activities begin when a project mobilizes a set of *inputs* (human and financial resources, equipment,) to carry out *activities* (training sessions, infrastructure building) that generate *outputs* (e.g. number of people trained; kilometers of road built). Outputs contribute to *outcomes*, which are changes in behaviors or systems among project participants (e.g. increased knowledge; improved practices) among the program participants. Outcomes contribute to *impacts*, which are judged to be sustainable improvements in fundamental conditions at the household, community or regional level (reduced malnutrition; improved food production).

The basic elements in the project hierarchy are used throughout the manual's discussion of M&E. The use of these elements in the project hierarchy will be expanded upon below in the discussion of logical frameworks, results frameworks and their relation to project design and M&E.

2.4 Monitoring and Evaluation Framework

Monitoring and evaluation systems for projects exist in a "real world" context where external factors such as national and international policies, climate, markets, and governance are dynamic and affect the communities and target populations in which programs operate. Local conditions such as politics, infrastructure, and services can also affect programs and their target groups. Monitoring these changing conditions is necessary for program effectiveness and assessment of project impact.

Major outcomes, such as improved food security, or reduced prevalence of malnutrition are often the ultimate goals of an organization implementing relief and development activities. Through a conceptual framework, influencing factors such as risks, behaviors and subsequent program activities can be rationally visualized within a particular local context. Importantly for the purpose of this manual, the primary hierarchical elements of an M&E system can be attached to the framework in order to retain a conceptual view of the "big picture" of the program and its goals. The adoption of an appropriate conceptual framework is particularly crucial in the initial stages of the project lifecycle in order to inform project design, budgeting, implementation strategies and approaches to project evaluation.

The M&E framework in Figure 2 combines the elements of the project hierarchy (and of the project logical framework and results framework) with the monitoring and evaluation timeline and data collection levels. As noted, an M&E system must reflect this sequence closely, using verifiable indicators. In addition, the M&E system should track external factors such as rainfall, policies, other natural and manmade hazards and risks, and market prices in order to mitigate the possible negative influence of such factors on local conditions. Having data on such external factors will also help put the project into context when explaining results.

Figure 2: Monitoring and Evaluation Framework

EXTERNAL FACTORS (Climatic conditions, government policies, market prices, etc.)

Monitoring of local conditions

INPUTS	PROCESSES	OUTPUTS	OUTCOMES	IMPACTS
•Human resources •Financial resources •Equipment	•Training •Infrastructure building	•Number of staff trained •Kilometers of road built	•Increased knowledge •Improved practices	•Reduced malnutrition •Improved incomes •Improved yields

Monitoring (annual measurements)   *Mid-term Assessment*   *Evaluation (Baseline / Final)*

PROGRAM LEVEL ⟶ BENEFICIARY LEVEL ⟶ POPULATION LEVEL

Adapted from: Bergeron et al. (2006)

A *formative (interim) evaluation* is an evaluation conducted during implementation to improve performance. It is intended for managers and direct supporters of a project.

A *midterm* **evaluation** is an external evaluation performed towards the middle of the period of implementation of the project, whose principal goal is to assess progress towards program objectives and draw conclusions for reorienting the project strategy and informing donors

A *final (impact)* **evaluation** is the [external] comprehensive process of assessing the impact of a programme in an intervention area for all stakeholders and donors.

Adapted from: Guijt et al 2002

2.5 General Overview of Indicators and Indicator Development

Indicators are quantitative and qualitative criteria that provide a simple and reliable means to measure achievement, to reflect the changes connected to an intervention or to help assess the performance of a development actor. Indicators do not have to be many, a few good indicators are better than having many indicators.

Indicators can be expressed in quantitative terms- where numbers are used to measure changes for example, percentage (part of a total), rate (such as infant mortality rate), ratio (such as the number of teachers in relation to the number of pupils in primary schools in a specific area) and in qualitative terms- where words are used to describe changes for example, perception on well being, quality of life and quality of diet.

Table 1: Types of Indicators and Purpose	
Types of Indicators	Purpose
Impact indicators	Measure the extent to which the overall program goals are being achieved
Outcome indicators	Measure the extent to which the project objectives are being met
Output indicators	Measure project deliverables
Input indicators	Measure the extent to which the planned resources e.g. money, materials, personnel are being utilized

Indicators and Targets: Indicators are often confused with targets. Indicators tell us what we want to measure. They are units of measure only. Targets have specific values attached usually a number and or a date and help us to track progress. For example: percentage of children under one year fully immunized by 2010 is an indicator. To make this indicator measurable a target will be added for example 60 percent of children under one year fully immunized by 2010. A target is specified after establishing the baseline information against the indicators.

Indicators and targets are used at each point along the project hierarchy as illustrated below (IFRCS, 2007):

Figure 3: Indicators and Targets Along With the Project Hierarchy
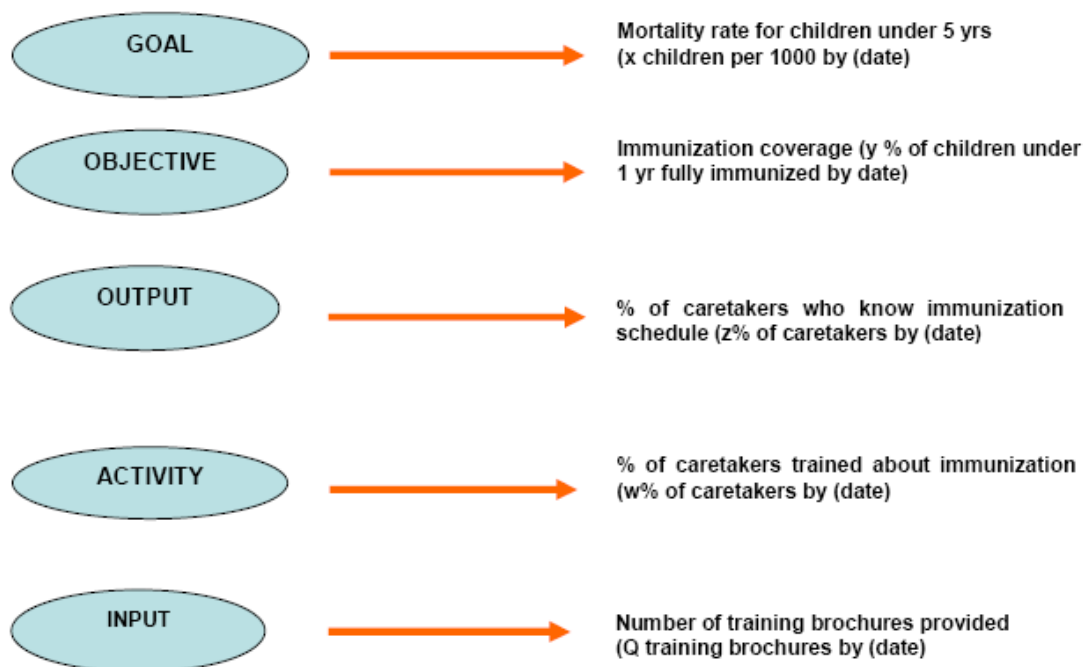
2.6 Managing for Impact

Impact is often described as changes – positive or negative, intended or unintended – in the lives of the targeted population to which the projects and program has contributed. Ideally, monitoring and evaluation activities will reveal the impact of a particular project as supporting equitable, sustainable improvements in human well-being.

However it is defined, impact is commonly referred to as the ultimate project or program goal, such as "improved food security", "reduced child malnutrition" or "increased household income". Impact directly attributed to a program intervention is difficult to determine, and often observable change in these goals occur after an impact evaluation has occurred. Thus, a broader perspective on impact is accepted, and the opinions of various stakeholders, most importantly of beneficiaries captured in participatory monitoring, are vital to assess "impact". "Managing for Impact" or "results based management" is achieved when valid information is obtained on the progress of program activities, program outcomes and changes in the context in which the program is operating. This is clearly displayed in the general M&E Framework above.

Four Basic Elements of Managing for Impact

1. Guiding the Project Strategy for Impact
2. Creating a Learning Environment
3. Ensuring Effective Operations
4. Developing and Using an M&E Framework

Source: Guijt et al. 2002

"Managing for Impact" means you need to respond to changing circumstances and increased understanding by adapting the project so that it will be more likely to achieve its intended impacts. Such adaptation may entail small changes to activities or larger strategic revisions" (Guijt et al. 2002).

Managing for impact includes *monitoring for impact.* This translates to managing the elements that guide this process as well as planning and budgeting for an adequate baseline, selecting sound indicators and all other necessary steps towards a final *impact* evaluation.

Critical reflection is crucial to manage for impact. By following the cause-and-effect approach to project design and summarizing this information in various frameworks, a solid foundation will allow an effective monitoring process to occur and enable timely redirection of project activities if necessary. The constant learning environment promoted by a comprehensive M&E system not only allows the evaluation of impact, but in doing so, promotes the achievement of project goals. This critical reflection can only occur with the consistent collection of reliable information. Ensuring effective operations requires that this information is shared with all project staff and stakeholders.

Interventions:
Focus is on performance monitoring

Inputs: Human, financial and technical resources required to implement a project. Evaluations assess the effectiveness, cost-effectiveness and appropriateness of these resources.

Activities and processes: Tasks such as training, organization, construction communicating, and management undertaken in a project. The performance of these tasks and the factors affecting this can be assessed.

Outputs: The implementation of project activities converts inputs to outputs, the basic goods and services that the project produces. Outputs are also referred to as deliverables.

Context Monitoring

Risk and vulnerability monitoring: Programs measure the changing levels of risk, vulnerability and coping capacity to prioritize and refine interventions according to contextual shifts and changes in the status of the target population.

Outcomes and Impacts:
Focus is on evaluation

Effects/Outcomes: Effect-level changes represent the first level of desired outcomes that we want to design for and later verify. These include changes in human behaviors and practices, as well as systems, among the target population. Examples include changes in credit access and savings rates, health and child care practices, or the percentage of farmers using sustainable agricultural techniques. Effects are what beneficiaries do on their own, influenced by the project's outputs as well as by external factors.

Impacts: Equitable and durable improvements in human well-being and social justice. The ultimate outcomes of emergency and development assistance, measured at the individual, social, geographic or administrative level. Long-term impact analysis is an important tool to assess the outcomes of interventions designed to assist people recover from a shock or stress, particularly in situations of chronic vulnerability.

Source: TANGO 2005

3. Conceptual Frameworks for Programming

Conceptual frameworks are useful in determining what types of data are needed in an assessment to successfully design a given project. They help illustrate the relationships among systemic factors (socio-economic, environmental, organizational, societal, individual) institutions and community and household resources that may directly or indirectly influence the underlying risks and vulnerabilities that a project attempts to address. These contextual factors in turn influence project design and implementation and the successful achievement of project goals. Conceptual frameworks can be generic or they can be adapted to take into account location-specific circumstances.

Examples of commonly used conceptual frameworks include the livelihood framework developed by DFID and the Food for Peace Expanded Conceptual Framework for Food Security. These two frameworks are discussed below. .

3.1 Conceptual Frameworks for Project Design

The Livelihoods Framework

One conceptual framework that has gained wide acceptance among International NGOs is the livelihood approach. The livelihoods approach requires that development interventions must be grounded in a solid understanding of the overall context in which households and communities live. It emphasizes the importance of assets to livelihoods and places household assets in six categories: natural, social, physical, human, political and financial. Project designers need to take the overall context into account when designing appropriate interventions, and later when evaluating the impact of project interventions on people's lives. Livelihood projects are based on three principles:

> *'A **livelihood** comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation: and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.'*
> Chambers and Conway, 1992

- ➢ a *holistic analysis* of the contextual environment
- ➢ a *strategic focus*
- ➢ *coherent information systems*

The Livelihoods Framework illustrates the relationship between contextual factors and specific livelihood outcomes in terms of food and livelihood security, as well as access to and utilization of health and education services, participation in social networks, life skills capacity, personal safety, and other contributors to individual well-being. It also stresses the need to maintain a focus on outcomes, not merely project outputs, and the ways in which a development activity will have an impact upon people's livelihoods. An M&E system should not only measure the effect of program activities on livelihood outcomes, but should also monitor key contextual factors that directly or indirectly influence a program's ability to achieve those outcomes.

Figure 4: Livelihoods Framework

KEY
N = Natural Capital   H = Human Capital
F = Financial Capital   S = Social Capital
Ph = Physical Capital   P = Political Capital

LIVELIHOOD ASSETS

VULNERABILITY CONTEXT
•Policy
•Social
•Economic
•Political
•Environmental
•Infrastructure
•Demographic
•Historical

N   F
P
S   Ph
H

Influence and Access

TRANSFORMING STRUCTURES AND PROCESSES

STRUCTURES
•Levels of Government
•Private Sector
•Civil society

•Laws
•Policies
•Culture
•Institutions
PROCESSES

LIVELIHOOD STRATEGIES
•Production and Income Activities
• Household resource investment strategies*
•Processing, Exchange and Marketing Activities
•Coping Strategies

In order to achieve

LIVELIHOOD OUTCOMES
• Nutritional Security
• **Food Security**
• Income Security
• Education Security
• Health Security
• Habitat Security
• Social Network Security
• Personal Safety
• Environmental Security
• Life Skills Capacity

* Decisions regarding use of tangible and intangible household assets (consumption needs, health needs, education, shelter)

Adapted from DFID Sustainable Livelihoods Framework (1999) and CARE Household Livelihood Security Framework (2002)

Vulnerability Context, Conditions and Trends

A holistic analysis of risk and vulnerability begins with understanding the context for any given population. To understand the macro-level factors that influence the range of possibilities for livelihood systems, we must consider the social, economic, political, environmental, demographic, historical, and infrastructural information. It is this information that sets the parameters within which livelihood strategies for risk management operate. This information is primarily derived from secondary data to reduce costs.

Livelihood Assets

Households have access to both tangible and intangible assets that allow them to manage risk and meet their various livelihood needs. **Natural Capital** consists of natural resource stocks from which resource flows useful for livelihoods are derived (e.g. land, water, wildlife, biodiversity, and environmental resources). **Financial Capital** is cash and other liquid resources, (e.g. savings, credit, remittances, pensions, etc). **Physical Capital** includes basic infrastructure (e.g. transport, shelter, energy, communications, and water systems), production equipment, and other material means that enable people to maintain and enhance their relative level of wealth. **Human Capital** consists of the skills, knowledge, ability to labor and good health, which are important to the pursuit of livelihood strategies. **Social Capital** is the quantity and quality of social resources (e.g. networks, membership in groups, social relations, and access to wider institutions in society) upon which people draw in pursuit of livelihoods. The quality of the networks is determined by the level of trust and shared norms that exist between network members. People use these networks to reduce risks, access services, protect themselves from

deprivation, and to acquire information to lower transaction costs. **Political Capital** consists of relationships of power and access to and influence on the political system and governmental processes at the local and higher levels.

In the analysis of these resources, it is important to take into account the combinations necessary for sustainable livelihoods, the trade-offs that exist between resources, the sequences that may exist between them (i.e. which resources are prerequisite to others), and the long-term trends in their use. The analysis should also determine the differences in the distribution of assets between different socio-economic groups.

Institutional Process and Organizational Structures

A variety of institutions may operate in the community, or have jurisdiction over the community and directly influence the livelihood outcomes of the population. This information is captured in the institutional mapping/profile and stakeholder identification process. These institutions can be of the State, civil society, or private sector. The State not only provides services, but also provides safety nets, changes policies, and can limit freedoms that can have positive or adverse effects on livelihood systems. Similarly, formal civil society organizations (NGOs, CBOs, parastatals, cooperatives, churches) can provide either enabling conditions or constrain opportunities for certain households.

Informal civil society (e.g. informal community networks and social groups) consists of the web of associations within which individuals and households function or belong. These networks can have positive or negative influences on the livelihood strategies that people pursue. The private sector can also create or limit community and household opportunities through open, affirmative action policies or, to the contrary, discriminatory and exploitive business practices. It is important in any analysis to take these various institutions into account in the formulation of any sustainable interventions.

Livelihood Strategies
Households combine their livelihood resources within the limits of their context and utilize their institutional connections to pursue a number of different livelihood strategies. Strategies can include various types of production and income-generating activities (e.g. agricultural production, off-farm employment, informal sector employment, etc.) or, often, a complex combination of multiple activities. A risk and vulnerability analysis should determine the livelihood strategy portfolios that different households or groups pursue and the historical pathways they have taken. Although some of the information on livelihood strategies will be derived from secondary sources, more detailed information will be obtained from the primary data collection during the assessment. Importantly, all livelihood strategy data should be desegregated by ethnic groups, gender, economic status, social strata, age, etc. to ensure proper analysis of sub-groups.

In the analysis of livelihood strategies, it is also important to capture the types of coping strategies people use when normal livelihood options are not adequate to meet household needs. It is important to distinguish strategies that are non-sustainable (divestment strategies) and coping strategies that are sustainable.

Livelihood Outcomes

To determine whether households are successful in managing risk in the pursuit of their livelihood strategies, it is important to look at a number of outcome measures that capture need or well-being satisfaction. Outcome indicators serve as proxies for risk exposure. Household differences in assets and risk management explain differences in outcomes. In addition, the responses of households to risks and/or adverse outcomes also affect their vulnerability. Thus the different ways of responding to risks and/or outcomes can determine differences with regard to vulnerability of individuals, households, communities, or countries.

Nutritional status is often considered one of the best outcome indicators for overall livelihood security since it captures multiple dimensions such as access to food, healthcare and education. Other livelihood outcomes that should be measured include sustained access to food, education, health, habitat, social network participation, physical safety, environmental protection, as well as life skills capacities. Analysis of these outcomes should not only determine what needs are currently not being met, but also what the trade-offs are between needs. In addition to these outcome measures, attempts are made to derive from the community the criteria they use for determining whether their livelihood strategies have managed risk effectively. These measures are often location specific.

3.2 The USAID/FFP Expanded Conceptual Framework for Food Security

The Food for Peace (FFP) expanded conceptual framework for food security builds upon the traditional food security concerns of availability, access, and utilization by including risk and vulnerability in its conceptual model as contributing factors to food insecurity. This framework makes explicit the risks that constrain or threaten food availability, access and utilization. The basic food security framework is presented in the upper part of the diagram with the desired food security outcomes leading to the goal of improved food security. The major risks that must be tackled to achieve food security and their links to the desired program and food security outcomes are identified in the bottom of the framework.[1]

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[1] USAID Office of Food for Peace (2005). Strategic Plan for 2006-2010.

Figure 5: USAID/FFP Expanded Conceptual Framework

Strategic Goal	**FOOD SECURITY**
Food Security Outcomes	Adequate Food *Availability* — Adequate *Access* to Food — Appropriate Food *Utilization*
Desired Program Outcomes	**Resources**: Natural resource sustainability; Productive assets; Secure livelihoods. **Productivity**: Labor productivity; Livelihood stability and diversification. **Income**: Market integration; Purchasing power; Savings potential; Credit Access. **Consumption**: Equity in intra-household food distribution; Food quality, quantity and diversity. **Human Capital**: Nutrition; Health and Sanitation; Maternal/child care; Dignity; Education/skills/capacity; Political voice; Indigenous knowledge
	Enhanced Community Resiliency — Enhanced Livelihood Capacity — Enhanced Human Capital
Food Security Risks to be Addressed	**Natural Shocks**: Climatic shocks; Natural resource degradation; Yield volatility; Asset depletion; Neglect of natural hazard mitigation. **Economic Risks**: Income fluctuation; Collapsed terms of trade; Savings depletion; Employment insecurity; Price volatility; High transaction costs; Information asymmetry; Inflation. **Social and Health Risks**: Epidemics (HIV/AIDS); Widespread untended malnutrition; Risk perceptions; Corruption; Social disintegration; Predatory extraction by armed forces; Ethnic and social discrimination
	Enhancing People's Capacities to Overcome Political Risks: Seeking good governance (national and local), legal recourse, representation, service provision, accountability, public goods creation, regulation, recognition of human rights, political stability, effective institutions
	FOOD INSECURITY

Source: Webb and Rogers, 2003

At the initial stages of project design during the assessment phase is where frameworks are crucial to the successful development of the entire evaluation strategy. Information gathered in assessments using such frameworks can aid in the design and budgeting of the baseline and subsequent studies (mid-term and final evaluations).

Part II. Key Components and Stages of M&E Systems

This section describes the major stages of planning and establishing an M&E system, in the order in which they occur. From the initial assessments and program design through data presentation and report writing, this section guides readers through the entire process of operationalizing an M&E system.

4. Vulnerability or Holistic Assessments

Prior to beginning the design of a development project, it is critical that an organization conduct an assessment. Often referred to as *vulnerability assessment*, a needs assessment, or an holistic appraisal, this first step in the design process is meant to collect vital information pertaining to a particular populations' constraints and opportunities in meeting their needs. Such assessments are intended to allow formulation of a multi-dimensional view of livelihoods and factors, both internal and external, which influence livelihoods (Caldwell 2002).

4.1 Assessment Preparation

The development of an assessment action plan is an important step in ensuring successful implementation of a holistic or livelihood assessment. An action plan contributes to efficient use of resources as well as effective collection and analysis of food insecurity information to guide future programming. In addition to determining the scope of the assessment, an action plan identifies the target area of the assessment, assessment objectives, sampling strategies, data collection methods, and data analysis guidelines. An assessment action plan is also critical for establishing an assessment timetable and identifying data reporting procedures. Please refer to Annex 13 for a discussion on preparatory tasks for assessment.

> *Holistic appraisal is used to identify priority needs, describe livelihoods and search for key conditions that have an impact on livelihoods, and will lead to the identification of the most vulnerable households. It also will place people's priorities and aspirations for improving their livelihoods firmly at the center of analytical and planning process.*
>
> Caldwell 2002

Gather Secondary Data

Before any field assessment process or program design begins, it is crucial to have a general understanding of the region and its populations. An important first step in the implementation of a needs assessment is the collection and analysis of secondary data. The main purpose of collecting this data is to:

- Provide a cost-effective base of information

- Possibly create preliminary livelihood profiles in the region or areas of potential program coverage. These livelihood profiles should describe how different areas and groups of people derive their income, food and access to basic health and social services

- Can be used as a benchmark for targets

Secondary data collection should occur well before assessments begin and resources must be allocated. It is important to consider:

- The availability, credibility and "how old" the data may be at this point in time;
- The level of disaggregation. This is crucial to assess quality and relevance. Secondary data should be collected at the lowest possible level, such as districts or household;
- The generality of this information-it should provide a "snapshot" of current conditions and trends over time and space.

Specific areas of secondary data collection include:
- Agro-ecological characteristics of an area
- Access to infrastructure
- Ethnic groups and social differentiation
- Food availability, access and utilization
- Vulnerability and risks
- Institutional profiling and stakeholder identification
- Analysis of local capacity
- Market information
- Health and nutritional status of the population
- General income earning strategies in the area

Table 2: Common Sources of Secondary Data

Government documents	*Partnering NGOs*	*Professional and academic*	*Internet websites*
- Municipal development plans - Official statistics - Technical reports - Departments and Ministries of agriculture, rural development, environment, health, social welfare, disaster management, etc.	- Project reports - Baseline studies - Project evaluations - Technical reports	- Journals/articles - Reference books - Public and private research organizations - Public and private universities - Public and private libraries - Computerized data bases	- Eldis Food Security Resource Guide http://www.eldis.org/food/index.htm - Famine Early Warning System Network (FEWSNET) http://www.fews.net/ - Food and Nutrition Technical Assistance http://www.fantaproject.org/ - United Nations Food and Agriculture Organization (FAO) http://www.fao.org/ - United Nations Development Program (UNDP) http://hdr.undp.org/ - World Bank Global and National Development Reports http://www.worldbank.org/ - World Food Program http://www.wfp.org/ - World Health Organization (WHO) http://www.who.int/en/

Table 3: Descriptive Information Obtained through Secondary Data Analysis

Physical and Environmental Features	▪ Demographic data (types and distribution of communities, age breakdown) ▪ Available services and infrastructure ▪ Agro-ecological conditions and seasonality/livelihood zones
Social and Political Characteristics	▪ Local leadership and authority ▪ Ethnic groups ▪ Formal and informal social networks, existing food security programs ▪ Local response capacity ▪ Political systems, historical trends and policies ▪ Personal security
Description of Existing Markets	▪ Data and trends on national/regional/local food production ▪ Description of existing market systems, trends in market prices and flows ▪ Import/Export data ▪ Previous experiences/analyses of problems with market access
Institutional/ Stakeholders Profiles	▪ Existing institutions (public, NGOs, CBOs, religious, trade and labor associations, industry, etc.) ▪ Nature of institutional programming and strategic plans ▪ Interest in collaboration ▪ Comparative advantages, SWOT analysis ▪ Relations with governments and communities
Economic Contexts and Social Differentiation	▪ Major and minor livelihood strategies, sources of income ▪ Farm and off-farm employment ▪ Seasonal and permanent migration ▪ Livelihood profiles and categories, levels of wealth and poverty ▪ Social mapping ▪ Gender considerations relevant to food access and use
Health/Nutrition Profiles and other Livelihood Outcomes	▪ Health and disease (trends HIV/AIDS and other infectious diseases) ▪ Access to water and sanitation ▪ Normal consumption patterns, dietary diversity and nutritional status
Shocks and Vulnerability Information	▪ History of natural disasters ▪ Historical "shocks" and "stresses" ▪ Patterns of food availability/access (from VAM) ▪ Traditional coping strategies ▪ Mechanisms normally available to target food assistance to the most vulnerable/food insecure

4.2 Defining Assessment Objectives

The most common objective of assessments is to acquire information for the design and implementation of projects. However, the assessment may be designed and implemented to enable achievement of a number of other objectives. The assessment process may contribute to the analytical capacity of staff and improve relationships with partner organizations, as well as enhance strategic planning and allocation of scarce project resources. Given numerous alternatives, it is important that assessments do not attempt to achieve an inordinate number of objectives. Each objective will require specific strategies, methods and resource allocations, and the amount of primary information that must be collected depends on the availability and quality of existing information. In all cases, the assessment team should carefully and explicitly determine the primary objectives and desired outcomes of the assessment process, and plan accordingly (TANGO 2002, 2004b). Specific objectives will be defined according to the information needs of individual assessments.

The specific type and quantity of information collected in an assessment will largely be determined by the availability and quality of secondary data and the specific objectives of the assessment. Information may be obtained from a variety of sources, though much of it will be collected in the community through the use of both qualitative and quantitative research methods.

4.3 Target Area Selection

Another initial step in planning an assessment is the identification of vulnerable groups within geographic boundaries. These boundaries are:

- Usually based on administrative divisions and socioeconomic and/or agro-ecological characteristics;
- Administrative boundaries determined by the structure of government and political borders;
- Socioeconomic areas related to production or social systems (e.g. pastoralists, subsistence farming, urban);
- Agro-ecological zones related to natural resource characteristics (e.g. flood deltas, arid lands, mountain zones).

Appropriate geographic targeting is dependent upon reliable and accurate information at the national or sub-national level (TANGO 2002).

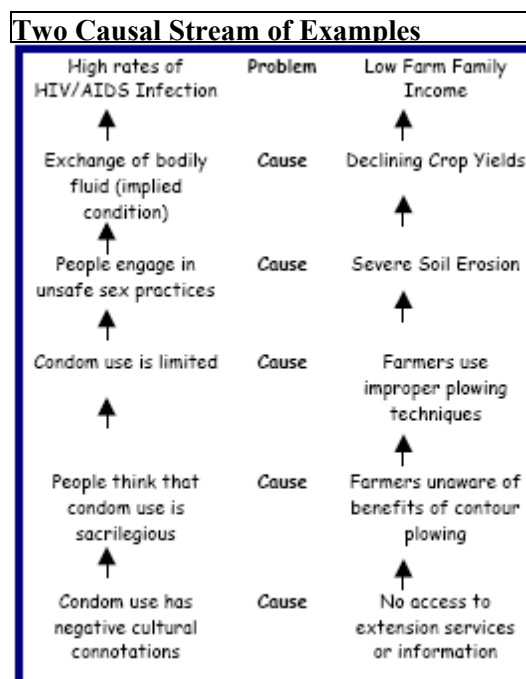In areas where good background information (early warning systems, crop forecasting, poverty profiles, nutrition surveillance, etc.) already exists, it can help assessment planners identify the most vulnerable regions (Frankenberger 1992). Assessment teams may take the lead role (resources permitting) in developing vulnerability profiles, however, this task may also be contracted to partner organizations.

5. Problem Analysis

The Problem Analysis stage of project design is used for ordering information collected during the holistic diagnostic assessment stage and extracting meaning from this information. It is often the case that we have more information than we can reasonably assimilate using summary techniques. Therefore we need tools that we can apply to organize information.

The assessment typically identifies a set of needs of varying complexity and importance relative to a defined geographical area and population. Developing a strategy to eliminate needs of realized possibilities requires an in-depth knowledge about the underlying causal factors that lead to an analysis of the problem. One of the tools we have for exploring causal relationships is called Problem Analysis, and it is a commonly used tool in project design. You may also hear it referred to as simply Causal Analysis or Cause-and-Effect Analysis or Logic Modeling.

Problem Analysis (PA) is based on cause-effect relationships. For example, smoking is a major causal factor in a high percentage of lung cancer cases, or that hydrocarbon emissions from automobiles are a causal factor of airborne particulates that result in smog in major cities. When working with social systems, as we do in the development field, we often do not have the luxury of clear statistical rigor. Nevertheless, problem analysis based on cause-effect relationships is still one of the best tools we have to systematically exploring events or factors that lead to a problem or opportunity.

Two Causal Stream of Examples

	Problem	
High rates of HIV/AIDS Infection	Problem	Low Farm Family Income
↑		↑
Exchange of bodily fluid (implied condition)	Cause	Declining Crop Yields
↑		↑
People engage in unsafe sex practices	Cause	Severe Soil Erosion
↑		↑
Condom use is limited	Cause	Farmers use improper plowing techniques
↑		↑
People think that condom use is sacrilegious	Cause	Farmers unaware of benefits of contour plowing
↑		↑
Condom use has negative cultural connotations	Cause	No access to extension services or information

Adapted from Project Design Handbook, Richard Caldwell, TANGO International, 2002

In design, PA normally does not refer to rigorous methods of mathematical causal path analysis but, rather, consists largely of qualitative procedures. A logical cause-effect stream is established which illustrates, *to the best of our ability*, the relationships among behaviors, conditions, and problems. In this way, PA is used to discover factors that lead to constraints and to bring project designers closer to the real needs of target populations (TANGO, 2002b).

5.1 Using Cause and Effect Logic in Project Design

The first step in developing a problem analysis in project design is to identify the problem that the project will address. The objective here is to use cause-and-effect logic relative to a predefined problem, since the causal logic is always relative to a particular problem, which leads to other effects, also termed consequences.

If you change the core problem, then the causal analysis will also change. Of course, local social, political and economic conditions will partly determine the identification of the project's focus, however other factors will also influence it (TANGO, 2002b).

Problems are selected based primarily on such **criteria** as:

Problem
A condition or set of conditions that affect people in a negative way (e.g., death, infectious diseases, poverty, low income, low agricultural production, inadequate housing).

Underlying Causes
Major causes of problems that are often the effects of other causes and must be defined during the synthesis stage of design.

Consequences
Social, political, or economic conditions that result from a problem. A cause-effect linkage where the consequence is the effect and the problem is the cause.

Conditions
Factors that exist in the household, community or external environment which contribute to a problem.

- The degree to which resolution of the problem (or seizing of the opportunity) will result in a fundamental change in the lives of the target group
- The significance and scope of the problem (i.e., the degree to which society considers it a serious problem and the number of people it impacts);
- The identification by the affected community that this is a priority problem;
- The organization's programming principles;
- The organization's comparative advantage (ability to address the problem);
- The interests of donors and the opportunity for resources.

The process of defining the problem in the project design phase in most cases will begin at a very general level. For instance, a holistic appraisal is often conducted with the rather generic "problem" of low livelihood security in mind, and data is collected around basic needs, access to resources, and other factors associated with livelihood security. An initial cause-effect analysis can be conducted with the problem defined as low livelihood security and the result will be an understanding of the major causes of low livelihood security. As mentioned above, these major causes are often too broad for a single project, and are themselves the effects of other underlying causes.

The project design team will need to clarify these underlying causes before going further in the project design process, as the suitable focus for a project is more likely to be found at this level in the causal stream. Thus, causal analysis should be an iterative and on-going process through the life of the project to continuously ensure proper project focus.

Causal analysis is a fundamental tool for building the central logic of any project design. The primary reason for carrying out a causal analysis is to develop a hierarchical relationship

between causes and effects identified through the holistic appraisal. Causal analysis allows us to assess the relative contributions of causal streams to the problem and therefore select factors to address through project interventions. Other reasons to use causal analysis in project design include:

- Selection of appropriate outcome and impact indicators;
- Exploration of multiple causal interactions (synergy);
- Mobilizing "buy-in" to a project design for staff, partners, community participants, donors, etc.
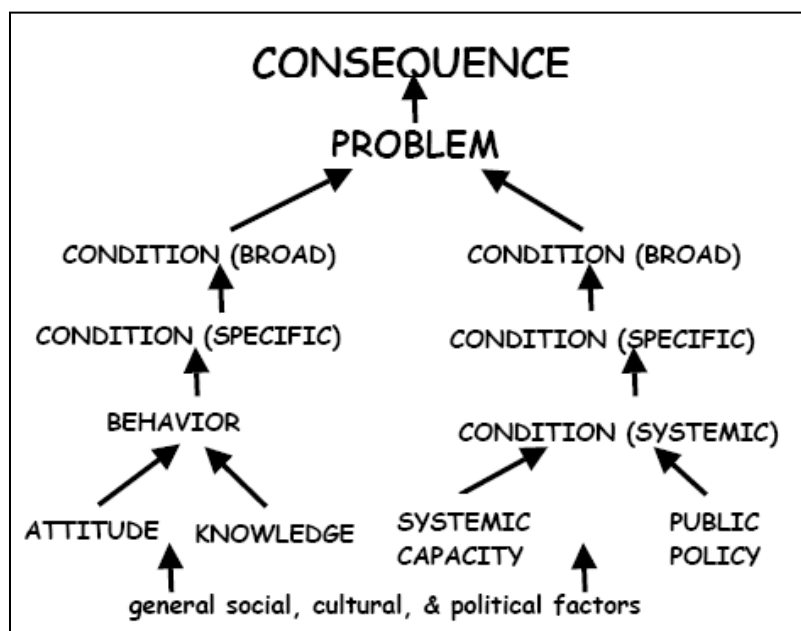
5.2 Hierarchical Problem Analysis

Problem Analysis describes a set of complex relationships among system variables in a hierarchical manner. In most cases, the sequence of causes in a causal stream falls in the following hierarchy:

- The direct causes of the problem are often specific physical or social conditions;
- These conditions, in turn, are typically 'caused' by human behaviors or by systemic shortcomings;
- Systemic shortcomings might be caused by low institutional capacities, or underlying power dynamics (e.g., duty bearers who have control);
- Human behavior is determined primarily by people's knowledge, attitudes and beliefs (although there can be conditions that themselves influence behavior); and
- People's knowledge, attitudes and beliefs have their roots in the context or the environment in which the target area is found. Figure 6 illustrates the causal hierarchy.

Figure 6: Hierarchical Problem Tree

Note that this is generic and illustrative only. Most causal analyses are much more detailed, and thus more complex. The figure, though, illustrates the primary relationships found in hierarchical causal analysis. There are specific reasons in project design that we model our cause effect logic using a hierarchical analysis, as we will see later in this chapter.

The higher-level consequences of a problem in the hierarchy are the result of the problem, and are based on the same cause-effect logic as the conditions and other

CONSEQUENCE

PROBLEM

CONDITION (BROAD)   CONDITION (BROAD)

CONDITION (SPECIFIC)   CONDITION (SPECIFIC)

BEHAVIOR   CONDITION (SYSTEMIC)

ATTITUDE   KNOWLEDGE   SYSTEMIC   PUBLIC
                        CAPACITY   POLICY

general social, cultural, & political factors

causes. If a project makes a significant contribution towards resolving the problem that it addressed then the consequences will themselves change.

Conditions are identified as direct causes of the problem, and frequently exist because of certain human behaviors or gaps in necessary systems. For example, the condition whereby water is contaminated by human waste could be caused either by a negative human behavior such as failure to use latrines, or by a system shortcoming such as a lack of a municipal sewage treatment facility.

Human behavior is based primarily on our knowledge, beliefs and attitudes. As human behavior often contradicts them, we must be careful to distinguish between stated and implicit beliefs. Thus, the next level of cause in the causal analysis hierarchy describes what is causing the targeted human behavior. The findings may show reluctance of nursing mothers in a specific community to eat foods high in protein – a gender-linked behavior usually based on cultural beliefs, gender roles and rights, and perhaps a lack of knowledge of good nutrition.

Finally, you should examine the external environment for basic factors that influence or lead directly to causes at each level in the hierarchy. For instance, a dominant religion can be a factor in the cultural environment that leads to specific beliefs or attitudes. Government policies or the availability of resources can cause shortcomings in certain basic services or systems. Project design must take these factors into account. Recognize that behavior (and attitudes and beliefs) also applies to duty bearers, persons in power who have influence over institutions and systemic structures. These have a great deal of influence over the fulfillment of people's rights. Whether constraints at these levels should be addressed specifically by projects or broader program strategies, they should not be ignored, for often the underlying causes of problems (denial of rights) can be traced to these sources (TANGO, 2002b).

5.3 From Problem Analysis to Project Strategy

Once a community's problems or opportunities have been identified and all of the major linkages have been explored, the design team can turn its attention to developing a strategy that will lead to important changes in practices and systems. A project strategy defines how the project will address constraints and take advantage of opportunities by targeting specific causes in the causal analysis. Developing a strategy is no trivial task, and many design efforts fail at this stage even when a good analysis and synthesis has been done (TANGO, 2002b).

Developing a strategy involves five key steps:

1. Selecting specific causes to address from the synthesis;
2. Developing interventions for each selected cause; and
3. Constructing a project hypothesis and logic model;
4. Identifying key assumptions; and
5. Identifying and responding to unintended project impacts.

Selecting specific causes to address from the causal analysis can be problematic. Ideally, one would want to address all of the causes that lead to a problem. This is rarely possible.

Fortunately, if fifty causal streams were identified as leading to child malnutrition, it is likely that three or four of these causal streams would account for 80% or more of the problem. The key is to correctly identify the causes that contribute most significantly to the problem and then define a strategy that will eliminate the causes of the problem.

Based on cause-effect logic, the strategy describes how project inputs and resulting outputs are going to bring about desired effect and systemic changes that will lead to sustainable impact on improving livelihoods. Interventions are a discrete package of actions and procedures that are developed and implemented. They are designed to directly (or sometimes indirectly) address a cause of identified phenomena. While generally an intervention is designed to address only one cause, sometimes a situation calls for interventions that address multiple causes. A project is commonly composed of multiple interventions which together work toward solving a defined problem.

Interventions are often referred to as solutions to a problem. The word intervention, however, is perhaps more meaningful here since the ultimate solution to a problem depends on what actions are taken and how effective these actions are carried through. Thus, while all interventions are designed as solutions, their success in resolving the cause of a problem depends on many factors. At least some of these other factors may be external, and outside the control of the project, but they still need to be considered and included in the project design under the topic of assumptions. Interventions can include such things as advocating for policy changes, information-education-communication (IEC), extension education, procurement and provisioning of resources such as seeds and tools, training of individuals or staff of an organization, institutional capacity building, etc.

Not all interventions require creativity and innovation. In many cases, tried and tested interventions are entirely appropriate. For example, oral-rehydration-therapy is internationally accepted as a treatment intervention for diarrhea. Certainly, this intervention should be considered in a project addressing diarrhea, but it is also worth considering other options or other approaches, e.g., health education, improving water supplies, building sanitation facilities, etc. A key step in project design is the construction of the project hypothesis. In this step, we shift the focus of the design process from the problem to the solution. We restate the causes of our problem as anticipated outcomes of the solution. By adding our selected interventions to the project hypothesis diagram, we can check the logic of the cause-effect relationship identified in the causal analysis.

At this stage in the design process, we need to step back and evaluate the project strategy for the overall potential impact. Impact and decision tools used to evaluate the project strategy may lead to a redesign of the interventions (TANGO, 2002b).

Make a Significant Contribution to Solving the Problem

We try to address causes that will solve the problem and provide the greatest degree of impact. Each cause-effect linkage contributes to X percent of the problem. The difficulty is that we rarely know what the exact percentage is. There are no simple tools for determining the contribution of each cause to the problem. Research around a particular problem analysis can reveal important

insights, but we cannot usually afford the required time or costs to do it very rigorously. Simply ranking the causes by the frequency they are cited (for example, in a household survey) gives an idea of how common a problem is, but still does not provide you with knowledge of what contribution the cause makes to the problem (TANGO, 2002b).

So, what do we normally do in project design to identify the primary causes?

- Ask key sector specialists.
- Research secondary data and literature reviews, including evaluations of previous projects that addressed similar problems under similar circumstances.
- Collect additional primary data if needed.
- Look for convergence of evidence.

Comparative Advantage of the Organization

We want to ensure that the causes we select to address are those that the organization can implement. Normally a design team considers capacity or the comparative advantage of an organization as one of its selection criteria for choosing interventions. Of course, an organization can alter its comparative advantage by hiring new staff with skills required for addressing a cause.

In this way, we should look for causes that will provide good entry points into communities. In choosing causes to address to impact childhood malnutrition, for example, a design team may prefer to focus on sanitation practices in households, or child nutrition, or food production. Depending on the comparative advantage of the implementing organization, a project design team could chose to work at the household level, or regional or national levels, or in institutional capacity development or in policy advocacy (TANGO, 2002b).

6. Program Design and Logical Frameworks

As mentioned earlier, program design and M&E are inextricably linked. Program design should be viewed as an important step or stage of the project cycle rather than a separate activity. (See figure below)

Figure 7: The Project Cycle
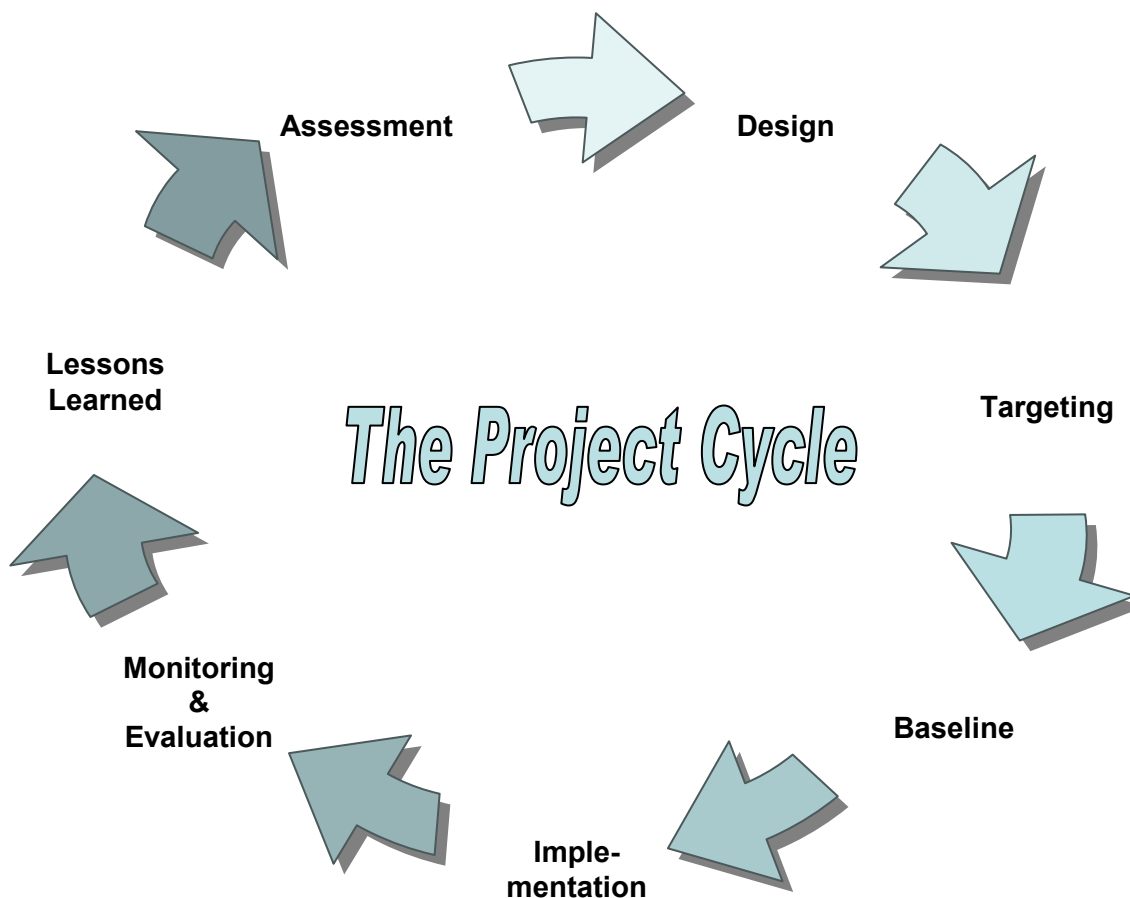
An M&E system should be viewed as an output of program design, and the logical frameworks (particularly the LogFrame Matrix) are the organizational tools which synthesizes the logical relationships upon which the program is based.

The design of a project and its corresponding M&E system require careful planning and organization from the start. The use of various frameworks and tables enable complex processes to be simplified for various stakeholders for logical program design and an integrated M&E system in which to measure performance and impact. This allows the M&E system not only to track and measure change, but to easily pinpoint where, when and how the processes of change

are occurring (or not occurring) in order to adapt the project accordingly. The next section explains the basic concepts of goals and objectives and introduces various organizing frameworks.

6.1 Establishing SMART Goals and Objectives

Goals are the ultimate aim or purpose of a project. A project goal must be clearly defined before implementation. Goals are not necessarily fully achievable over the life of a project as it often takes years for some changes to become evident. Projects should all be designed to contribute towards the achievement of a program goal, with strategic objectives as the end results that the project seeks to achieve towards this goal.

> *A **goal** is the ultimate aim or purpose of the program, a longer-term result, which reflects the intended change (improvements) in a target population. It is important to note that different organizations and funding agencies refer to goals is a variety of ways. Final Goal, Overall Goal, Strategic Goal/Aim, Overall Objective, Impact Goal etc…all refer to impact-level changes.*

A clear goal also helps create logical objectives to reach that goal and aids in the selection of appropriate indicators. Some important considerations for establishing goals are:

- A goal must be realistic, meaningful and clearly beneficial to the target population and all stakeholders.

- Goals should be SMART: specific, measurable, achievable and attributable, realistic and relevant, and time-bound. (The SMART acronym is widely used as ideal criteria for goals and objectives; however, the meaning of individual letters may vary)

- Project goals should link to larger program goals, where appropriate. For example, a project goal may link to an organization's goals for its larger country or regional program. Ideally, individual projects should fit within the programmatic strategies and frameworks of the organization's overall program and should contribute to the overall program level goals.

A SMART goal clearly:
- Defines the target population, including number of beneficiaries
- Explains what the change will be specifically and that it is measurable
- Establishes the time frame-when this change is expected to take place

Vague goal: to improve the livelihoods and increase the incomes of rural farmers in X community.

SMART goal: By the end of 2008, 4000 small-scale rural farmers in X community will have increased their incomes by 15% from 2003.

6.2 Design Principles for Monitoring and Evaluation

All project design plans have at least five components that are considered components of the project itself as well as the measurable M&E aspects. They are: inputs, activities, outputs, effects/outcomes and impacts (Caldwell 2002). These might be translated in various M&E frameworks as inputs, processes, outputs, outcomes, intermediate results, and impacts and linked to project goals and objectives. This section will begin to detail the steps towards creating a logical program design with these elements in a project hierarchy.

An M&E plan is essentially an output of the design process (please refer to Annex 14 for how to develop M&E plan). Sound project design that integrates M&E entails the use of conceptual frameworks to define relationships between project/program goals and to establish specific, *measurable* objectives and intermediate results. Within any M&E system, one must differentiate between inputs, activities, outputs, effects/outcomes and impacts. Monitoring and evaluating projects within such a complex socio-economic environment is enabled by an M&E framework as well as *logical frameworks, results frameworks and a logic model.*

6.3 Logical Frameworks

Once a basic project goal has been established and potential objectives suggested, it is time to starting thinking about how exactly to achieve these outcomes. What will the program actually consist of? Which proposed interventions should be chosen? Taking the time to conduct

Results frameworks are diagrams that identify and illustrate causal relationships linking levels of a program's strategy from objectives to impacts.

strategic planning will save a lot of time and money throughout project implementation, ensuring a logical cause-effect path directly towards the intended results, and eventually the final goal. This is where the results framework (or logical framework) will help guide the development of goals, objectives, and major interventions (activities).

A logical framework approach is a commonly accepted method of organizing the main activities over the life of the project. This approach helps project designers to ensure that they have a logical and feasible organization of activities that clearly expresses goals and effects/outcomes, and how they will be achieved through specific activities and outputs. It provides a plan for project activities. The approach also requires project designers to take into account their assumptions about the operating environment and contextual factors outside the implementer's control, and thus can act as a check on unrealistic assumptions. The information developed from the logical framework approach is put into a matrix known as a Logical Framework, or LogFrame.

The logframe matrix summarizes:

√ what the project should achieve (the goals and objectives)
√ the indicators that will be used to monitor progress towards these goals as well as overall achievement;
√ how these indicators will be monitored and the source of the data;
√ the assumptions behind the design logic of how the activities will contribute to achieving the goal and objectives, and
√ risks for the project if the assumptions turn out to be incorrect.

Project Logic	Indicators	Means of Verification	Assumptions
Final Goal			
Changes in Behavioral and Knowledge (Intermediate Goals or Objectives)			
Outputs			
Activities			
Inputs			

6.4 General Logical Frameworks: linking indicators to program design

Logical framework models are diagrams that identify and illustrate the linear relationships flowing from program inputs, processes, outputs, and outcomes.

Figure 8: Linking the Results Framework to a Logical Framework

INPUT	ACTIVITIES	OUTPUT	OUTCOME	IMPACT
•Human and Financial resources to develop and print educational material	•Distribute brochure to health facilities •Meet with physicians to promote distribution of brochure	•Brochure distributed to clients of facilities	•Increased customer knowledge of TB transmission and treatment •Increased demand for quality TB services	•Decreased TB infection, morbidity and mortality

Source: MEASURE project

Figure 9 is an example of a Logical Framework with some indicators included in red lettering. Logical frameworks are a good place to display your indicators-namely your input, processes and output indicators.

Figure 9: A Logical Framework with indicators

INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACT
human resources for educational brochures	Maintain patient records	Clients know their HIV status Indicator: # clients tested in clinic	Clients develop HIV risk reduction strategies	HIV transmission reduced
HIV test kits Indicator: # of kits	Provide HIV counseling Indicator: # of clients counseled	# of HIV testing kits distributed	Risky behaviors decreased	HIV incidence decreased
Financial resources (funding)	Provide HIV voluntary testing Indicator: % of clinics providing HIV testing	HIV+ people are referred to services Indicator: # of people referred	HIV+ clients health outcomes improve	HIV morbidity and mortality decreased
Counseling and Testing Personnel	Refer patients for counseling and treatment of HIV/AIDS	Client records are available Indicator: # of client records available		
Referral System for prevention and testing				

Incomplete Logical Framework (adapted from Agha 2005)

6.5 The Logical Framework Matrix (LogFrame)

LogFrame Matrices are the most common frameworks and are seen in almost any solid M&E plan, evaluation report etc. Most donors today expect to see a LogFrame Matrix for a complete picture of project intent; proposed activities, indicators, tools and assumptions. That is because,

the LogFrame brings everything together to neatly forms a matrix demonstrating an integrated program and M&E system. *If a project is properly designed and M&E is in place, it should be impossible to separate out the project details from the M&E system itself.*

"A LogFrame Matrix summarizes what a project intends to do and how, what the key assumptions are, and how outputs and outcomes will be monitored and evaluated."
This LogFrame Matrix clearly depicts logical flow of how the actual goals and objectives correspond to outputs, activities, indicators, and *assumptions*. When this information is packaged into a LogFrame Matrix, program managers, donors and other stakeholders can easily ascertain the program's path towards achieving overall impact. Figure nine illustrates a generic table for a LogFrame Matrix.

Table 4: Generic LogFrame Matrix (WFP)

Project Description	Performance Indicators	Means of Verification	Assumptions
Goal: The broader development impact to which the project contributes - at a national and sectoral level.	Measures of the extent to which a sustainable 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. All components will contribute to this	Conditions at the end of the project indicating that the Purpose has been achieved and that benefits are sustainable. 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 expected outcome of producing each component's outputs.	Measures of the extent to which component objectives have been achieved and lead to sustainable benefits. Used during review and 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.

The main Contents of the LogFrame Matrix
The columns in a LogFrame are comprised of the following types of information:

- **Column 1:** This column is the design or internal logic of the operation. It incorporates a hierarchy of what the operation will do (inputs, activities and outputs) and what it will seek to achieve (objectives, purpose and goal).
- **Column 2:** This column lists how the design will be monitored and evaluated by listing the indicators used to measure whether or not various elements of the program design have occurred as planned.
- **Column 3:** This column specifies the source(s) of information or the means of verification for assessing the indicators.
- **Column 4:** This column shows the external assumptions

How to check the Design Logic in a Logical Framework

The following section is adapted from the WFP Monitoring and Evaluation Guidelines (2003) on Planning a Baseline Study.

It is important to check the design logic of the logical framework, review and test the internal and external logic (columns 1 and 4, respectively) and the feasibility of the project.

First, test the logic beginning with inputs and move upwards towards impact using an if (internal logic) and (external logic) then (internal logic at the next level) logic test. Where necessary, adjust the logical framework to overcome logic flaws which are not feasible or are highly unlikely relationships among various levels of the logical framework hierarchy.

Specifically check that the following conditions hold:
- √ Inputs are necessary and sufficient for activities to take place
- √ Activities are necessary and sufficient for outputs that are of the quality and quantity specified and that will be delivered on time.
- √ All outputs are necessary, and all outputs plus assumptions at the output level are necessary and sufficient to achieve the outcome.
- √ The outcome plus assumptions at the outcome level are necessary and sufficient to achieve the impact.
- √ The impact, outcome, and output statements are not simply restatements, summaries or aggregations of each other, but rather reflect the resulting joint outcome of one level plus the assumptions at that same level.
- √ Each results hierarchy level represents a distinct and separate level, and each logical framework element within a results hierarchy level represents a distinct and separate element.
- √ The impact, outcome, activities, inputs and assumptions are clearly stated, unambiguous and measurable. Impacts and outcomes are stated positively as the results that project wishes to see. Outputs are stated positively in terms of service/product delivery.
- √ The assumptions are stated positively as assumptions, rather than risks, and they have a very high probability of coming true.

How to check the M&E Elements in a Logical Framework
Check the following conditions:
- √ Indicators for measuring inputs, activities, outputs, outcome and impact are specific, measurable, accurate, realistic and timely (SMART) (column 2).
- √ Beneficiary contact monitoring (BCM) indicators are identified for the purpose of tracking progress between outputs and outcomes and are noted at the outcome level.
- √ Two levels within one logical framework do not share the same indicator (if they do, the indicator at one level is not specific enough to that level or the design logic between levels is flawed).
- √ The unit of study (e.g. individuals, children, households, organizations) in the numerator and, where applicable, the denominator of each indicator are clearly defined such that there is no ambiguity in calculating the indicator.
- √ The means of verification for each indicator (column 3) are sufficiently documented, stating the source of the data needed to assess the indicator (be sure that sources of secondary data are in a useable form).

Figure 8 discusses the indicators to incorporate into the LogFrame Matrix.

Figure 10: Indicators for LogFrame

Hierarchy of objectives	Indicator type	Description of indicator type	Examples
Final goal	Impact	assess actual change in the conditions of the basic problem identified; shows changes that are fundamental and sustainable without continuing project support	household livelihood security levels, as shown by measures of health, nutrition, education, community participation and economic security
Intermediate goal	Effect	describe target population responses to project outputs, e.g., behavior change, reactions and perceptions; systemic changes in institutions	% of households in target area using improved fuel-conserving stoves number of health units with a cost-sharing system
Outputs	Output	describe project products, i.e., the direct outcome of project activities and inputs for which the project is responsible	number of health workers trained in FP services number of farmers trained in proper handling of pesticides
Activities	Process	describe project activities (or processes)	number of trainings held
Inputs	Input	describe what resources go into the project	number of TBA kits provided number of staff supported by project

6.6 Results Framework

This next major step involves detailing a program's course of action; specifically how will we successfully achieve our goal from a few 'on the ground' activities? How can we ensure that various initiatives are working towards that goal? Before determining how exactly to hold various stages of activities, or program inputs accountable, one must create a *Results Framework* to specify the strategy of reaching a goal, incorporating SMART objectives and intermediate results and finally specific activities.

A Results Framework is constructed from a project LogFrame by converting the LogFrame's impact and outcomes into final goal and intermediate goals (or objectives) supported by measurable indicators. Figure six demonstrates a general results framework, which clearly displays a goal, objective, intermediate results (effects) and activities. At this point, before actually beginning the project itself, it is essential to attach measurable indicators for each activity component. Figure 9 demonstrate how a results framework is developed for each activity of the results framework without losing your "place" in the big picture (results framework).

Figure 11: Partial Results framework for National TB Program
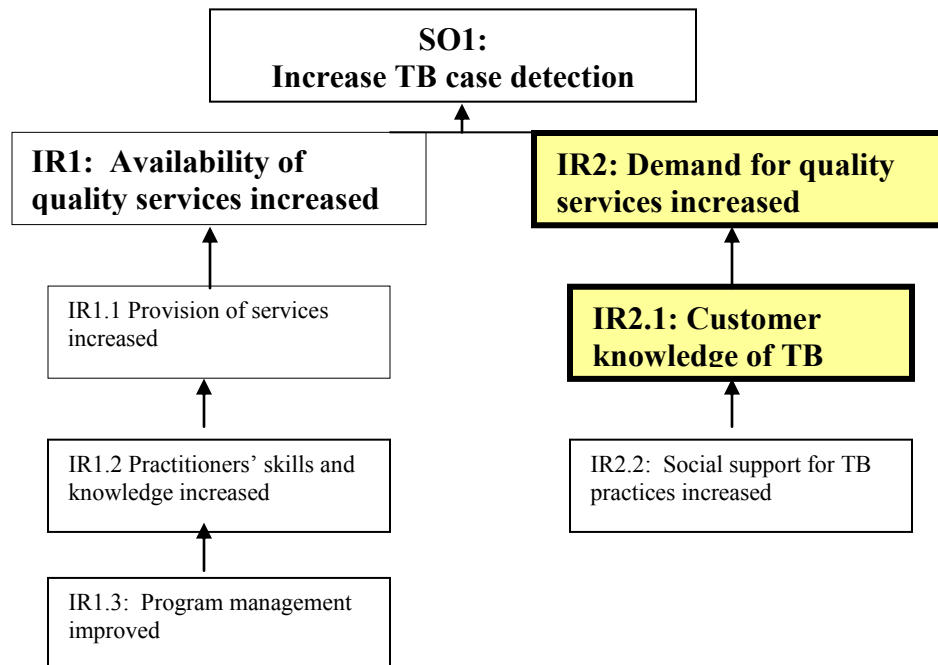
Source: MEASURE project

6.7. Results-Based Management

Instituting Results-based Management

Development organizations have made a concerted effort to effectively link program design and implementation to comprehensive M&E systems. This effort has been made in response to a growing demand for development effectiveness which stems from the idea that producing good

outputs is not enough. The primary concern is that efficient or well-managed projects will lose their relevance if they do not lead to improvements in development conditions and ultimately in peoples' lives (UNDP 2002).

One promising approach to enhancing effectiveness in programming is referred to as Results-Based Management (RBM). When a results-based approach to design is used, the desired outcomes or impacts are identified first, then the outputs needed to achieve those outcomes, and then the inputs and activities needed to deliver those outputs.

Figure 12: Definition of Results Based Management

Results-based management (RBM) is an approach by which an organization ensures that its processes, products and services contribute to the achievement of clearly stated results. RBM provides a framework for strategic planning by improving learning and accountability. It is also a broad management strategy aimed at achieving important changes in the way agencies operate, with improving performance and achieving results as the central orientation, by defining realistic expected results, monitoring progress toward the achievement of expected results, integrating lessons learned into management decisions and reporting on performance.

In order to effectively implement RBM, Program Managers must:
- Focus on results rather than implementation
- Clarify expectations for implementation tasks, set major benchmarks and then let go
- Plan from the outset how, what and when to monitor and evaluate
- Develop and use indicators in programmes
- Analyze the situation, keeping track of changes and their implications
- In reports , suggest action for decision-making
- Actively learn from mistakes and successes
- Work more closely with external partners
- Work with project staff to explain links to outcome
- Contribute in the office to the team in concerned with achieving outcomes

UNDP 2002

Under an RBM approach it is necessary to increase focus on intended results and how specific inputs and outputs will help to achieve them. A strategic shift toward results requires a strong and coherent monitoring and evaluation framework that promotes learning and performance monitoring.

7. Steps to Setup a Monitoring Systems

7.1 Six steps to Setup an M&E System

The six steps involved in designing an M&E system include:
- ✓ Setting up the purpose and scope – Why an M&E system is needed?
- ✓ Identifying information needs and indicators – what do we need to know to manage a project?
- ✓ Planning information gathering and organization – how do we gather required information and how to organize it?
- ✓ Planning for data processing – how do we process the data and produce meaningful results to make inferences?
- ✓ Planning for quality communication and reporting – how and to whom do we want to communicate the information
- ✓ Planning critical reflection processes and events – how to use the information to make improvements?

A well developed project design document will include an indicative M&E framework that provides detail information about the above mentioned steps to facilitate budgeting and allocation of technical expertise, to give funding agencies an overview of how M&E will be undertaken, and to guide project and partner staff during start up. However, it is important to understand that this will only be indicative and needs to be adjusted and detailed further during the start-up phase. (IFAD, (undated)).

Define Purpose and Scope of the M&E System
Definition of the purpose and scope of the intended M&E system helps to decide the number of indicators to track, information need, budget level, information type (quantitative, qualitative or both), frequency, tools needed, etc. Although a brief M&E purpose statement is supposed to be provided in the project design document (project proposal), it is important to revisit the M&E purpose at an earlier stage of implementation and make necessary changes based on the approved project document, budget, and field realities. Participation of implementing partners and primary stakeholders is critical in reviewing the purpose and scope of M&E. The following question needs to be asked while revisiting the purpose:

"What are the main reasons to set up and implement M&E, for us – as implementing partners and primary stakeholders – and for other key stakeholders?"

The next step is to clarify the scope of the M&E system. The scope of the M&E system helps to establish mutual expectations – the project management knows what to expect from M&E and what level or resources and technical skills need to be allocated to make it operational while the M&E team knows the expectations of the management, technical team and other stakeholders.

Determine Information Needs and Identify Indicators
The next step is to take the objective hierarchy from the logical framework and list down indicators from the logframe matrix. The M&E team may need to add additional indicators as many objectives are complex and cannot be summarized in one indicator. Moreover, it might be possible to capture the changes through quantitative indicators but it may not necessarily explain

why and if this change can be attributed to the project. Therefore multiple sources of quantitative and qualitative information are critical to explain the change.

Table 5: Objective Hierarchy Links to Monitoring & Evaluation	
Level in project hierarchy	**What to monitor and evaluate**
Goal (Impact)	To what extent has the project contributed towards its longer term goals? Why or why not? What unanticipated positive or negative consequences did the project have? Why did they arise?
Purpose/objectives (Outcome)	What changes have occurred as a result of the outputs and to what extent are these likely to contribute towards the project purpose and desired impact? Has the project achieved the changes for which it can realistically be held accountable?
Outputs	What direct tangible products or services has the project delivered as a result of activities?
Activities	Have planned activities been completed on time and within the budget? What unplanned activities have been completed?
Inputs	Are the resources being used efficiently?

For example, a quantitative indicator may tell us that "income of the participating households has changed as compared to non-participating households" but it will not tell us "how has the income changed? What external factors have influenced this change? Why certain households could not take advantage of the project interventions while others did?"

In addition to capturing the results, it is also important to understand the process. For example "How do project participants feel about the quality of services rendered by the project? How was the participant selection process? How did we ensure that the most-vulnerable households are included as project participants?" A clear understanding about the project processes helps improve project management. Although the impact and outcome level objectives of projects often do not change information needs are likely to shift overtime.

Information gathering and organization

For each type of information or indicator, the M&E team must establish how the information will be collected and organized. For example monitoring progress of road construction is relatively straightforward. It may require primary stakeholders and the project staff to check how many miles of road have actually been constructed and if it is passable. However, monitoring the impact of the road construction – for example, in terms of changes in household income in the short term and changes in food and nutritional security status in the longer term – requires different methods. One method to consider is the household survey. This is a fairly time-consuming and expensive monitoring activity and one that does not make primary stakeholder participation easy. It also requires a relatively higher skill level to design the tools to analyze the data.

Each indicator may require a different information gathering method. One has to decide whether to use a quantitative method or a qualitative method or it could be a combination of both; whether the information to be collected is from individual households or from a group of community members; whether it is from a man or from a woman; whether structured instruments

need to be used or semi structured tools are more appropriate, and so on. Each method has specific advantages and disadvantages in terms of cost, reliability of data, skills required, ability to quantify results and richness of information generated.

Involvement of potential users of the methods in selection or development of the methods is critical. This will create a greater opportunity for the users to understand the methods and to use them correctly.

Data processing

Collected information need to be collated, perhaps summarized and analyzed by the right people. Often data analysis goes beyond data summaries and involves tests of statistical significance. Seeing monitoring as a learning process implies that analysis and agreeing on decisions are undertaken with all level of staff in the project hierarchy and with partners. As a general rule, data collection and analysis should be undertaken with those people to whom the data, analysis and decisions pertain.

Data entry and processing requires specific skills and tools. If the skills are not available within the project, arrangements need to be made to help team members to acquire data analysis skills.

Data can be collected on paper forms, and then entered into databases, or may be entered directly into databases using handheld computers. In some instances, data can be collected using voice recorders.

Validity checks need to be incorporated into data entry processes, and procedures for data cleaning have to be developed, to optimize data quality. Computers assigned for data analysis should be equipped with data analysis software. SPSS is a relatively user friendly statistical package and produces neat tables hence can be used for data analysis. Other popular software for data analysis includes MS Access, STATA, and SAS.

Making sense of the data generated by M&E processes and assessing the implications for the project strategy and operations are the two important building blocks of M&E that typically get little attention. The Log Frame matrix does not give any reference to this aspect of M&E.

Communication and reporting

A Project Proposal usually specifies the expected reporting schedule, indicating who should receive a report and how often. Often these are the reports for the funding agencies for accountability reasons. However the project also needs to communicate M&E findings to other stakeholders and for different reasons. For example, implications on policy must be shared with relevant government departments, use of funds can be shared with partners and headquarters, and documented lessons learned about the project strategy should be distributed to other projects. Please refer to Table 7 in section 12 for examples of information needed by different stakeholders.

At the beginning of a project it is important to develop a detailed communication strategy. This strategy should include not only formal reports but also communication efforts that seek feedback about interim findings, and discuss what actions are needed.

With representatives of all key stakeholders, develop a list of all audiences, what information they need, when they need it and in which format? Schedule clearly the production of information needs, showing who is to do what by when in order to have the information ready on time. Organize the events during which the information is to be communicated and discussed.

Critical Reflection Processes and Events

Critical reflection can occur formally and informally. Formally it can be facilitated during project meetings, workshops with partners and primary stakeholders or as part of external evaluations. Informally it can occur in ongoing discussions between project stakeholders. For example, in the New Options for Pest Management Project implemented by CARE Bangladesh, group learning was encouraged by organizing self evaluation sessions at the community level. These sessions were organized at the end of each agricultural season with the participation of all project participants from the community. These sessions were facilitated by project extension staff. In these sessions participating farmers were analyzing current progress, results and identifying possible actions and resource requirements for the following season.

In Ha Giang, Vietnam, the IFAD funded project arranges self evaluation workshops where all staff collectively review project progress every six month, review the reports prepared by the M&E system and review objectives of the project and targets. They analyze the progress, identify strategies that worked well and also identify strategies that didn't perform well. Staff in small-groups discuss what could be done to improve project performance. All technical staff share at least one significant learning experience with colleagues. This information serves as the basis for developing the next six-month plan.

7.2 Monitoring for Performance and Participation

A proper evaluation of program impact cannot occur without continual monitoring and collection of information. Unfortunately, program evaluations often focus almost entirely on inputs and end results while largely discounting the operation and management processes that led to the particular outcome. In order to fully inform program design and implementation, monitoring systems should be properly designed to capture the "how" and "why" of project performance.

An M&E system should be viewed as an essential tool for successful project management. A project will not function well without the constant feedback of monitoring for performance. Monitoring for performance focuses on ensuring that project design, logistics and implementation are occurring as planned. Unfortunately, the "lessons learned" through project implementation are often synthesized toward the end of a project in order to inform future efforts. However, by instituting effective performance monitoring at the outset of implementation, lessons can be learned early enough to enable needed adjustments in response to changing trends and programming opportunities.

When developing the monitoring mechanisms, M&E staff must give careful consideration to the selection of appropriate methods for data gathering, sampling, recording, collating and analysis. While a range of methods may be used as part of an overall M&E system, it's critical that program managers and M&E staff obtain the input of field staff regarding the feasibility, time requirements, cost implications, and potential constraints to various data collection activities. Unfortunately, detailed data management plans outlining the logistical issues concerning data collection and storage are often left out of M&E planning. Careful consideration of such issues in the early stages of M&E planning is critical for ensuring the timeliness, cost effectiveness and reliability of M&E systems.

7.3 Participatory Monitoring

Effective and inclusive participation is an important condition for effective performance monitoring. Participatory M&E is not just a matter of using participatory techniques for information gathering in a conventional monitoring and evaluation setting and it is not just organizing a single workshop to identify local indicators. Participatory M&E is about involving the community in the entire process. It requires rethinking who undertakes and carries out the process and who learns or benefits from the findings.

In setting up a Participatory Monitoring & Evaluation (PME) System, the participating community needs to be involved in the entire process: methodology design, indicator identification, information collection, information collation, analysis of findings, and dissemination of findings (IFAD, (undated)).

Critical Decisions to make in Starting with Participatory M&E

To develop a PME system from the very beginning of a new project or to make the existing M&E system more participatory of an existing project, four important decisions need to be made in developing an effective PME system (IFAD, (undated)).

a) Be clear about different people's motivations for getting involved in M&E. If the information needs are different then complementary M&E systems need to be developed rather than forcing all interest groups to agree on a set of indicators. For example the information needs of a farmers group is likely to be different than a group of handicraft makers. Similarly, women may have different information needs than men.

b) Negotiate and agree on "how much" participation from whom. Assessing how much participation is needed from which groups largely depends on the purpose of the participatory M&E.

c) Before developing a PME system, it is important to ask "why the project needs to set up a PME system"; "is it worthwhile for primary stakeholders to invest time and energy to participate in M&E?"; and "what type of support might be needed to develop a PME system"?. Following box presents a range of factors that may influence people's participation in M&E.

Figure 13: Factors Influence People's Participation in M&E

> **Factors that may influence people's sustained participation in M&E**
>
> - Perceived benefit (and partial & short term costs) of M&E
> - Relevance of M&E to the priorities of participating groups
> - Flexibility of the M&E process to deal with diverse and changing information needs
> - Quick and relevant feedback of findings
> - Capacity to act on recommendations that might arise from findings
> - Capabilities, leadership, identity and degree of maturity of the groups involved, including their openness to sharing power
> - Local political history, as this influences society's openness
> - Capacity to deal with short term survival needs of participants, while pursuing longer-term information needs
> - Material support to make the M&E possible (e.g. tactile tools, pens, paper, training, etc.)
>
> (IFAD, (undated))

d) Merge participatory M&E and non-participatory M&E in a project setting. Not all information needs are shared, so information needs have to be met by a combination of conventional and participatory M&E systems. The operational areas need to be monitored internally by the project while assessing the implementation process, outcomes and impacts will always require the opinions of primary stakeholders, and so will inevitably require a more participatory approach.

Table 6: Difference between traditional evaluation and participatory evaluation

Traditional Evaluation	Participatory Evaluation
WHY: Accountability – summary judgments about the project to determine if funding continues	**WHY:** To empower local people to initiate, control and take corrective action
WHO: External experts	**WHO:** Community members, project staff, facilitator
WHAT: Predetermined indicators of success, principally cost and production output; assesses project impact	**WHAT:** People define their own indicators of success
HOW: Focus on scientific objectivity distancing of evaluators from other participants; uniform complex procedures; delayed and limited access to results	**HOW:** Self-evaluation; simple methods adapted to local context; open immediate sharing of results through local involvement in evaluation process
WHEN: Midterm and completion; sometimes ex-post (long after the project)	**WHEN:** Frequent small evaluations

(IFRCS, 2007).

Advantages of Participatory Monitoring and Evaluation
- Builds partnerships and sense of local ownership over project;
- Builds consensus among staff and project participants about project goals and objectives;
- Enhances local learning, management capacity and skills;
- Provides timely, reliable, and valid information for management decision-making;
- Increases cost-effectiveness of monitoring and evaluation information;
- Empowers local people to make their own decisions about the future;
- Reverses centralization, standardization, and top-down development.

Disadvantages of Participatory Monitoring and Evaluation
- Needs skilled facilitator to ensure everyone understands the process and is equally involved;
- Can be dominated by strong voices in the community (for example, men dominating women in discussions, political, cultural or religious leaders dominating discussions and decision making) (Note: a skilled facilitator should know how to avoid this situation);
- Can be time consuming - needs genuine commitment (respect people's time);
- Needs the support of donors because it does not always use standardized indicators;
- Is most effective if it starts at the planning stage of a project:
  - Community identifies problems, priorities and solutions
  - Community defines indicators for success and how they will be measured.
  - Community participates in ongoing measurement of progress.

7.3 Monitoring the Risk and Vulnerability Context
Tracking risk and vulnerability represents a critical shift in project monitoring and evaluation. It involves monitoring contextual trends, risks, shifts in coping capacity and the factors that cause assets and coping capabilities to deteriorate. This includes monitoring trends at three levels.

First, programs should monitor shifts in the occurrence of hazards or risks that affect the context such as the health environment, the natural environment, governance and conflict, socio-economic factors, and shifts in the policy and institutional environment at the regional, national and local levels. In sub-Saharan Africa, for example, the general reasons behind increased vulnerability to food insecurity include macro-level forces (e.g., growth failure tied to rising poverty), declines in migration options, market failures in the context of market liberalization (e.g., worsening terms-of-trade), governance factors, and the HIV/AIDS pandemic (Ellis 2002). Each of these factors influences the ability of people to manage risk and cope with shocks that determine their access to food and are important components of a development relief monitoring system.

Second, it is important to track changes at the community level that increase vulnerability. This could include the deterioration of existing social networks, community institutions, informal safety nets, and inter/intra-community dynamics that may exacerbate or result in conflict and/or disenfranchisement of a sector of the community. It is also important to consider changes in livelihood strategies that increase vulnerability, such as an increase in seasonal migration or transactional sex that leads to an increased exposure to HIV/AIDS.

Third, programs need to monitor risk and vulnerability at the household level. This includes tracking changes in coping strategies, asset levels, shifts in livelihood strategies at the household level, and deteriorating terms-of-trade. Information such as the exhaustion of food stocks, food rationing within a household, withdrawing children from school or sending them away to live with relatives are important pieces of information that help us to assess the direction in which vulnerability to food insecurity is moving (Ellis 2003).

The indicators used to monitor these contextual changes are referred to as "weathervane" indicators. These indicators help to direct program priorities in dynamic and oftentimes unpredictable operating environments. For example, these indicators help determine the thresholds at which programs need to shift between relief and development situations. They also help programs refine and adjust interventions depending on changes in context and the factors that influence vulnerability to food insecurity. Weathervane indicators for monitoring vulnerability of food insecurity are provided in Annex 4.

To manage the cost and resources required for continual monitoring of weathervane indicators, programs can implement a series of sentinel sites that track the current status of livelihoods and food insecurity, as well as risk and vulnerability factors at both the household and community levels. This information should be linked to macro-level monitoring/early warning systems.

8. Establishing Indicators and Performance Targets

Indicators and performance targets are the backbone of M&E systems. This section defines both of these measurement aspects and discusses the development of "gold-standard" indicators and targets.

8.1 What are Indicators and Targets

Indicators

An indicator is a variable, measure or criterion that measures one aspect of a program/project. Simply stated, an indicator verifies whether an intended change actually occurred. Indicators are developed for two reasons:

1. To measure attainment of inputs, activities, outputs, effects/outcomes and impacts related to our project design hierarchy.
2. To evaluate key questions in the evaluation of projects and programs (Caldwell, 2002).

An appropriate set of indicators for a program or project will include *at least one indicator for each aspect* of a project.

Examples of Indicator Measures

- # of training manuals provided
- # of providers trained
- **%** of facilities trained by the project
- total fertility **rate**
- maternal mortality **ratio**
- Food Security Coping Strategy **Index** comprised of 6 different coping outcomes

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Indicators that are proportions (i.e., written as percentages), are comprised of a numerator and a denominator. The denominator must be carefully determined for accuracy.

For instance, the third indicator in the example box:

% of facilities trained by the project. =   numerator: # of facilities trained
                                               denominator: total # of facilities

It is important to keep in mind that an indicator is a chosen representation of complex processes and changes and thus are an approximation and often a simplification. All indicators have strengths and weaknesses and therefore run the risk of not fully capturing the "whole story". Widely studied and accepted indicators also have possible limitations and should be noted. Incorporating contextual (background) information in an evaluation will create a more robust picture of what is being measured.

Annex 1 provides a list of common indicators used by various development sectors.

Performance Targets
Performance targets represent commitments that development agencies make about the level and timing of results to be achieved by a program (USAID1996). Non-USAID programs may define performance targets similarly. For each outcome indicator or indicator selected for strategic objectives or intermediate results, a performance target should be established.

Final targets are the planned value of a performance indicator at the end of the planning period. Interim targets are set for years in between the baseline and final target year. Performance targets are usually quantitative however they can be qualitative, depending on their indicators. Sometimes is it necessary to develop *benchmarks* in order to track planned progress. Benchmarks are essential to understand the rate of change over time of an indicator.

> *Benchmarks are expected values or levels of achievement at specified periods*

8.2 Types of Indicators

There are four main types of indicators that measure different aspects of the M&E system, all of which relate to outcomes and the fulfillment of objectives that result in impact:

- **Input Indicators**: indicators which measure inputs such as number of training materials, staff members, and infrastructure etc. These indicators describe what goes into a program.

- **Process or Activity Indicators**: indicators which measure more process-oriented activities such as the number of training workshops conducted, number of site visits etc. These indicators describe the number of activities or their level of completion

- **Output Indicators**: indicators which measure the end results of program components such as the number of staff members trained, number of materials distributed, number of cooperatives established, etc. These indicators describe the goods and services produced by the program activities.

- **Outcome (effect) Indicators**: indicators which measures the change in systems or behaviors resulting from the achievement of an intermediate goal/result/target (objectives), such as the percentage of staff members who are competent (scoring above 75% on competency test), the number of clinics meeting new quality standards or the number of women breastfeeding

- **Impact Indicators**: indicators which measure actual change in conditions of key problems or unmet needs identified linked to the program goal, such as changes in health status, nutritional status, income etc.

Input, activity and output indicators are easier to capture, and are often used as indirect measures of success However, changes in these indicators *may not* result in a behavioral of systemic change. It is necessary to have outcome indicators to measure the actual change in behaviors or systems among a project's target population. Measuring real impact usually requires more than one "impact indicator" as well as a strong mix of qualitative, quantitative and contextual information. Although indicators should measure final impact changes when possible, change is a complex, dynamic event (or series of events) that is often influenced by factors beyond the scope of the project.

Indicators can be divided into two broad categories: aggregate and operational. This is useful because it helps to clarify exactly what we are measuring. **Aggregate indicators** are broad and describe progress towards goals. They are useful to define and summarize more specific and measurable operational indicators. **Operational indicators** are mush more specific in measurement, and represent a sub-set of the aggregate indicator.

8.3 Identifying what and how to measure

Indicators should be selected to fit the program objectives, interventions and operational context. To avoid collecting unnecessary data in an effort to analyze all aspects of a particular project, monitoring and evaluation systems need to identify the set of indicators that will help track its most critical activities. Keep in mind that the activities that are the easiest to collect information on are not necessarily the most useful when it comes to measuring project impact.

Here are some useful points to consider when beginning to think about measuring information (Guijt et al. 2002)

- Where and how the information will be obtained. Information will need to be obtained beyond the program management information needs possibly from various stakeholders.

- Information and indicators must be attached to each level of program planning hierarchy-from impact goal, objectives, intermediate results, outputs, activities and inputs .

- The five core evaluation questions must be answered: relevance, efficiency, effectiveness, impact and sustainability.

- Take notice of the "unintended. There might be unplanned positive and negative outcomes and more importantly impacts of the program and it is imperative that they be documented and possibly dealt with.

- Include enough operational information to explain progress, or setbacks. However, do not include a lot of unnecessary information that will clutter your monitoring system and consume resources to acquire.

- Vary your information system in order to capture cross-cutting issues and incorporate views of stakeholders and beneficiaries (transparency and participation).

For example, the choice of indicators in a project to reduce food insecurity among a target population depends on the type of food security intervention employed by the project. For example, income or consumption indicators would be used to assess the impact of a program that aims to improve access to food. Projects that combine food access interventions with health and nutrition interventions would use nutrition indicators. Other criteria influencing the choice of indicators include:

➢ Time, resources and capacity required for data collection;
➢ Timeliness of data collection and analysis (temporal and seasonal factors);
➢ Usefulness to programmers for tracking risk and vulnerability;
➢ Comparability across programs.

8.4 Characteristics of Ideal Indicators

There are some essential key principles to follow in the design of M&E indicators. Indicators must be valid, reliable, precise, independent, timely and programmatically important.

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Characteristics of Ideal Indicators

- **Valid:** accurate measure of a behavior, practice or task
- **Measurable**: quantifiable using available tools and methods
- **Reliable:** must be consistently measurable, in the same way, by different observers
- **Precise:** operationally defined in clear terms
- **Independent:** non-directional and "uni-dimensional?", depicting a specific, definite value at one point in time
- **Timely:** provides a measurement at time intervals relevant and appropriate in terms of program goals and activities
- **Programmatically important:** linked to an impact or achieving the objectives that are necessary for impact-a public health, food security or survival

(adapted from Agha 2005)

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Examples of possible indicators for a specific health objectives/goals:

- Family planning programs intend to reduce fertility demand **(outcome)**
    Ideal Indicator: The average number of children that women who are surveyed want. (How many children do you have? How many more children do you want?)

- Family planning programs intend to reduce the maternal and child morbidity and mortality of short birth spacing **(impact)**
    Ideal Indicator: Maternal mortality ratio

8.5 Criteria for selection of sound indicators

There is a stepwise process to guide program staff in developing and selecting indicators to use in their M&E systems. These should be done from multiple points of views, for example, involving program staff from each technical sector or component of a project.

Figure 14: Key Steps in Creating and Selecting Indicators

1. Using baseline information, determine what points of intervention need to measured
2. Establish your numerator and denominator
3. check to make sure that your indicators are SMART
4. Identify a limited number of indicators which adequately measure the outputs.
5. Identify the data sources available and the type of data collection needed for each indicator.
6. Construct a matrix listing the indicators, identifying their importance for programme monitoring (high/low), the ease of obtaining data on the indicator (easy/feasible but requires effort/difficult), and cost of data collection.
7. Prioritize based on the above matrix and select the top
8. Group these indicators by source of data collection. Now there are clusters of indicators organized by data source
9. Select final clusters of indicators and establish a data collection plan based on available program resources.

Source: Adapted from Bertrand and Tsui, 1995.

8.6 Outcome and impact indicators

The term outcome refers to the set of program results that occur at the *beneficiary-level* and that can be *directly attributed to program activities*, rather than external factors. Outcomes may be defined as intermediate improvements in the capability of program beneficiaries to influence their own lives, such as through improved access to resources, or improved knowledge attained through training programs. More typically, impacts may also refer to final improvements in the economic and personal well-being of individuals who receive goods and services through the program. Outcomes are often confused with program outputs, which refer to the quality and quantity of goods and services delivered through program activities. (Riely and Mock et al. 1999)

External factors which can mask the actual impact of projects are typically termed confounding factors. One of the goals of evaluations is to separate the effects of those external, confounding factors from the outcomes and impacts which can be attributed to the project. (Riely, Mock et al. 1999)

8.7 Performance targets and benchmarks

As we learned in earlier sections, performance targets essentially represent commitments made about the level and timing of results to be achieved by a project. *Targets are the planned values of indicators.* They may be quantitative (usually) or qualitative, depending on the indicator. For example, if an indicator states the number of trainings provided to farmers, then the target might be one per month or 10 in year 1 (2007). However, it is possible to turn qualitative information into quantitative scales and attach a quantitative target. See the Figure 15 below for an example.

Figure 15: Transforming Ideas about Quality into Measures for Which Targets Can Be Set

To measure an intermediate result that emphasizes improvements in quality of maternal and child health services, USAID/Yemen devised a scale that transforms qualitative information about services into a rating system against which targets can be set:

0 points = Service not offered
1 point = Offers routine antenatal care
1 point = Offers recognition and appropriate management of high risk pregnancies
1 point = Offers routine deliveries
1 point = Offers appropriate management of complicated deliveries
1 point = Offers post partum care
1 point = Offers neonatal care

Score: Total actual service delivery points/Total possible service delivery points

Illustrative Target: Increase average score to 5/6 by the year
2000.   (USAID TIPS 1998)

Indicators may also be disaggregated for "people-level indicators" in order to clarify the intended beneficiary groups. For example projects want to measure indicators separately for men and women in order to conduct gender analysis for the project.

Targets may be expressed as quantity of change:

- The level of success (absolute): 50 Clinics established by year 2
- Change in the level of success: Clinics providing HIV/AIDS counseling increased by 50% by 2008
- Change in relation to the scale of the problem: 5% decrease in proportion of malnutrition (underweight) in children under five by 2008
- The creation of something new: a school house built in a community by end of year 3.
- Efficiency: relating to unit cost measures, like a reduction in school fees by $2

Or quality of change:
- Quality rates: clinic patient enrollment or dropout rate increases
- Scores and rating systems: a scale of 1-5 with an increase in 1 point

Why are targets so important? Development agencies are committed to focus on results. The trend today is results-based management and M&E. "Performance targets lie at the heart of this commitment. They define, in concrete terms, what will be accomplished by when and as a result of the program" (USAID 1996).

Targets bring the purpose for undertaking a project into a real, defined view. They further justify a project by describing in concrete terms what the project's (donors) investment will achieve by a certain deadline. Targets help to keep track of progress, provide a timeline both program management and donors can understand, add specificity to indicators, and (with the help of benchmarks) they break down long-term goals into incremental "tasks".

Benchmarks are becoming main stream and are simply intermediary points for targets. It is also possible to use standard benchmarks set forth by donors, various UN agencies, high performing development organizations etc. Benchmarks serve as the guideposts for tracking progress and targets mark the envisioned levels of accomplishment. It is important to set realistic and motivational target levels that can be achieved in the life of the project.

8.9 Approaches to establishing/setting targets

Below lists some key questions to consider when establishing realistic targets:

- What is the performance baseline?
- What trends occurred before the program started?
- What are beneficiary expectations of progress?
- What are expert judgments?
- What do research findings and similar programs suggest?

There are no real best practices for setting targets and the combination of programmatic experience and information available tend to determine targets.

Some alternative approaches are:

- Project a future trend, then add the "value added" by project activities
- Establish a final performance target for the end of the planning period, then plan progress from the baseline level
- Set annual performance targets

8.10 Limitations of targets

It is important not to set targets which are too high or too low. Targets which are too low will not motivate project staff, and targets set too high may result in a project loosing credibility. Targets may also thwart creativity and force a linear path in project achievement, where unintended benefits are not captured or opportunities are sidelined in order to focus on designated targets.

9. Sampling: Key Concepts

9.1 Introduction to Sampling
What is sampling?

Sampling occurs when a subset of the population (or other unit) under study is selected from the larger group (the total population under study).

Surveys done in the field are technically called *sample surveys,* because they are measurements taken from a *subset* of entities from a larger population. For example, baseline surveys and other assessments used for evaluation purposes do not investigate the entire population like a census. Rather, they include only a portion of the population, called a *sample,* to represent the population in which they are interested. Sampling reduces the time and cost of collecting data about a population by gathering information from a *subset* instead of the entire population.

Survey methodology has established standards to allow this efficient and cost-effective type of survey to adequately represent the target population, based on statistics. Survey sampling is a branch of statistics that allows one to look at the entire population, strategically sample a portion of it, and extrapolate findings that can relate to the entire population. Therefore, the primary purpose of a sample survey is to obtain an *estimate* of one or more unknown population parameters (i.e., we want to estimate population characteristics from our sample data). Estimates of population characteristics (income, livelihood groups, health status etc…) derived from sample surveys which follow suggested guidelines, *may be expected to approximate the "true" population value within a specified margin of error with a known probability.*

9.2 Types of Sampling
There are two main types of sampling: *probability sampling and non-probability sampling.* Probability sampling has numerous methods and mixed approaches are often used.

- **Probability Sampling-** sampling procedures that follow probability principles (i.e., "random sampling"). It is required that each element have a <u>known, non-zero</u> probability of selection. This sampling type entails various methods and is most commonly used. It is based on formal statistical theory, allowing precision and reliable estimates to be calculated, minimizing bias.

- **Non-Probability Sampling-** sampling methods based on other than probability sampling principles. Non-probability sampling is not based on statistical theory and without a statistical basis it is impossible to assess precision and reliability (accuracy) of estimates. Convenience Sampling, Purposive Sampling, Snowball Sampling and Quota Sampling are all types of Non-probability sampling. The power of purposive sampling lies in selecting information-rich cases for in-depth analysis related to the central issues being studied.

The difference between non probability and probability sampling is that non probability sampling does not involve *random* selection and probability sampling does. Does that mean that non probability samples aren't representative of the population? Not necessarily. But it does mean that non probability samples cannot depend upon the rationale of probability theory.

Probability sampling is used when the survey objective is to make inferences to the larger population, and/or when key programmatic decisions will be made based upon survey data conclusions. Surveys done in the field to obtain quantitative information for M&E purposes (credibility and program impact) use probability sampling (random sampling), therefore the rest of this section will focus primarily on probability sampling.

9.3 Key Definitions

Below is a list of key definitions which are useful to understanding sampling:

- A **domain** is a specific population or subpopulation (group) where survey estimates are needed. Domains are defined at the first step of a sampling strategy because sample size is determined from them. They usually consist of the project target area or beneficiary subpopulation. When specific areas (rural versus urban), change over time or groups (settled versus displaced) need to be compared, these subpopulations will require separate additional domains.

- **Elements** are the most basic unit of analysis for a survey

- The **population** is the totality of elements under study. The **target population** is the population that is the ideal one for meeting a survey's measurement objectives. The **survey population** is the target population, modified to take into account practical constraints. The **survey universe** refers to the population and/or geographic area for which inferences may be made from the survey data. In this guide, the universe will normally be the population of the geographic area covered by the project being evaluated.

- **Sampling (measurement) units** are members of a given population, referred to as units of the population, which are convenient and relevant for purposes of selecting a particular sample. A sampling unit is one of the units into which an aggregate is divided for the purpose of sampling, each unit being regarded as individual and indivisible when the selection is made. Measurement units are the persons to whom the data refer, which are not necessarily the respondents, from whom the information is (data are) obtained.

> *Sampling units may be individual elements or groups of elements.* For example, individual woman in a reproductive age group are sampling units in a fertility survey while heads of households are regarded as sampling units in the study of cost of living in a community. Families in budget studies or households in a household survey are groups of elements.

- **Sample-**a sample is a subset or a technically selected part of the population for purposes of making inference about the population and its characteristics. When a population from

which a sample is selected is composed of clusters (groups of elements), we obtain *a cluster sample*. If the population is composed of individual elements, the resulting sample is *an elements sample.* Samples can be grouped into two categories; *random (scientific) samples* which are obtained using some chance mechanism and *non-random (judgment) samples* whose composition is influenced by the person selecting the sample.

- **Precision** is a tolerable level or degree required for a particular survey based on the measure of how close an estimator is expected to be to the true population value of the parameter-the magnitude of error. Most surveys are designed with a high degree of precision, but can be only rough estimates (approximations), depending upon the intention of the survey (use of data) and resources designated for the survey. Precision will be specified depending on the level of power desired and statistical significance determined by the survey designer/statistician as well as the *smallest comparison group difference or change to be measured*.

- **Bias** pertains to the difference between the mean estimate across all possible samples and the true population value. The degree of accuracy in your sample is ultimately determined by the degree of precision and bias. An unbiased sample is representative of the target population.

9.4 Sampling Methods/Design

Sampling units may be individual elements or groups of elements, depending on the whether a sampling frame is available to randomly select sample units. This section explains the various methods of *probability* sampling, along with a few popular *non-probability* sampling methods that may be used in conjunction.

Sampling Frames

A *Sampling Frame* is a list of potential sampling units, ideally of elementary units or elements, from which a sample may be chosen. Unfortunately, in the field it is not always possible to get a complete sampling frame upon which to draw a sample. Common reasons are missing elements (incomplete frames), clustering of elements, blanks or foreign elements or duplicate listings. When a complete sampling frame is unavailable, a two stage sampling approach is used. Cluster sampling is most widely used in the field due to the lack of a complete sampling frame.

SRS   Simple Random Sampling

Sampling theory was developed based on Simple Random Sampling (SRS). It is the underlying principle for all other probability methods. SRS is important but in practice is rarely used as a "stand-alone" method; rather it is used in conjunction with other sampling methods. SRS must have a *complete* sampling frame.

There are number of ways by which random numbers can be drawn to identify sampling units from a sampling frame. Random number tables can be used to generate random numbers to identify sampling units. Microsoft Excel is one tool that allows users to generate random numbers. A number of other software tools can be found on the worldwide web (example: www.randomizer.org) to generate random numbers within any specified range.

Figure 16 demonstrates the different sampling methods and their relationships. This can serve as a useful reference when the different methods appear to overlap and will help the user decide when to use which method.

Figure 16: Various Methods of Random Sampling
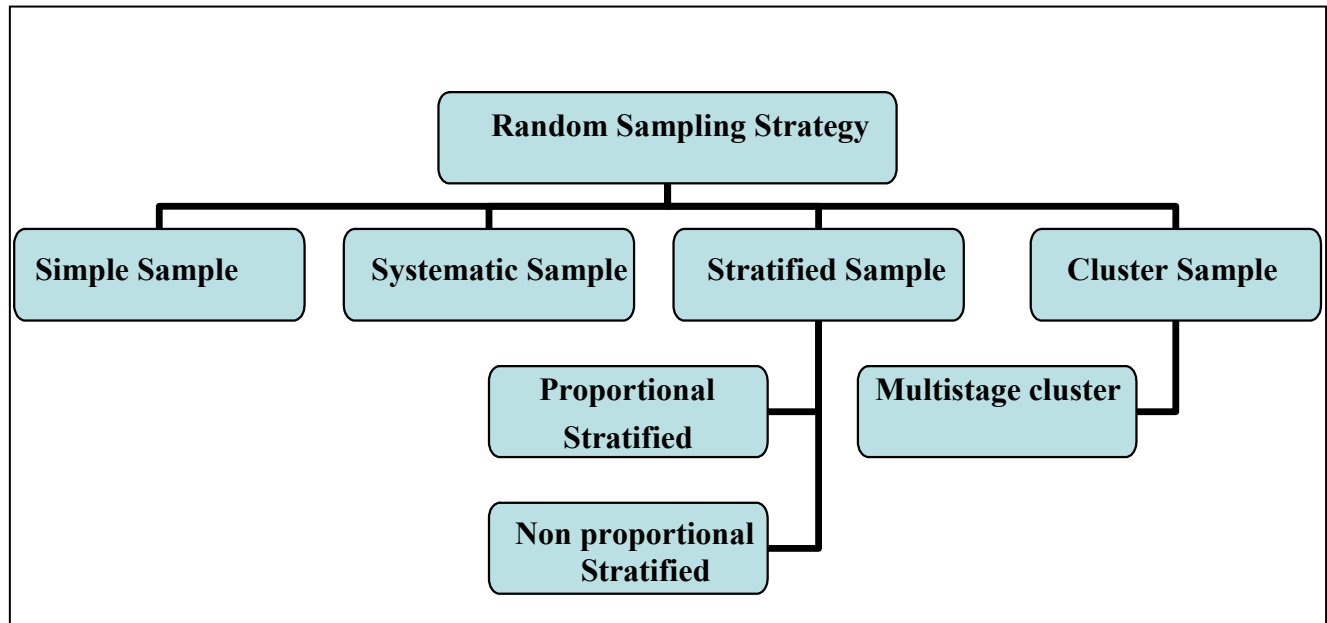
STR Stratification and Stratified Sampling

Stratification is essentially the classification of a survey population into sub-groups, or strata, on the basis of selected characteristics for comparison purposes. Stratified sampling is used when the study population is grouped into strata and a random sample is selected from within each stratum. It is often used mainly to ensure proportional representation for each stratum, to decrease the sampling variability, or to yield sufficient numbers of a subpopulation in the sample for reliable analysis, specifically for comparison.

Stratification can be done during the design phase before sample selection (referred to as *pre-stratification* or *stratification*), or it can be done after sampling during the analysis phase (*post-stratification*).

Cluster Sampling

Cluster sampling is the most widely used method of probability sampling, particularly in development settings. Cluster sampling is the random selection of naturally occurring groupings, referred to as clusters, from which all members are chosen for the sample. A *cluster* is simply an aggregation of sampling units of interest for a particular survey that can be unambiguously defined and can be used as a sampling unit from which to select a smaller sub-sample (Magnani, R., 1997). This method of sampling is useful when no sampling frame or list of the population is

available, but listings of clusters (villages, towns, camps) are available. This is a cost-effective approach when the program area is large and site visits are necessary for data collection.

A drawback of cluster sampling is that the standard error increases as independent selections in the sample decrease, with consequent loss of precision. Each cluster is randomly selected (therefore independent), but the selection of each sampling unit is not independent. The more that clusters differ, the less precise the estimates. This differs from SRS, where each sampling unit is randomly selected

Multistage sampling is similar to cluster sampling. Two-stage sampling designs are simple multi-stage sampling techniques.

Adjustment for Design Effect:

Design effect is the factor by which the sample size must be multiplied in order to produce survey estimates with the same precision as a simple random sample. It corrects for the loss of sampling efficiency resulting from the use of cluster sampling instead of simple random sampling.

Adjustment for Non-Response
The most common reasons for non-response are:
- inability to contact the respondent (e.g., respondent not at home)
- inability of respondent to complete the interview (e.g., respondent is ill, language problem)
- refusal to participate in the survey

Non-response has implications for the sample size calculation. For example, if a response rate of 90% is expected, than the sample size will have to be adjusted by 1.10.

9.5 Non-Probability Sampling

Purposive Sampling
Purposive sampling is normally used in qualitative assessments as budget and staff constraints[2] make this a more practical method than probability sampling techniques. This is why site selection is of critical importance in qualitative assessments (TANGO, 2002a).

Before beginning the site selection process it is useful to consider what types of information can and cannot be gathered using participatory qualitative methods. For example, PRA/RRA methods cannot be used to make statistical inference in which the results of the study are generalized to a wider population. While participatory assessments cannot generalize specific findings, they can be extremely useful in pointing out significant issues that will need to be considered during project design and implementation or for the advocacy of specific policies with other local organizations.

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[2] Much of the information in this section is taken from Freudenberger, K. (1999) "Rapid Rural Appraisal and Participatory Rural Appraisal: A Manual for CRS Field Workers and Partners". CRS.

For example in selecting sites for a livelihood assessment, it is important to determine how many communities and agro-ecological areas or administrative jurisdictions the study team can realistically cover given time, logistical and labor constraints. Coverage will be influenced by such factors as environmental uniformity, technological development, socioeconomic conditions, infrastructure development, and access during the rainy season. The team should plan to spend more time in regions where the livelihood systems, agricultural systems, and/or ethnic mix are more diverse and variable than in regions where they are more uniform. If the region is quite homogenous with one ethnic group and one production system in the zone, only a few sites may be needed.

The number of sites that can be studied will depend upon the number of team members and the amount of time that can be spent in the field. The normal number of teams used ranges from two to four with six members on each team. If each team spends three days per site then only two sites can be covered in one week per team. Normally two weeks are allocated for field work and another week is allocated for data analysis. Therefore the number of communities that are normally surveyed range between six and sixteen. Once the number of sites has been determined, then the team can begin the process of selecting the sites. This is best accomplished by using a combination of purposive and random sampling. Purposive sampling is used to ensure certain characteristics are included in the sample. Random sampling is used to select one site among several sites that represent particular characteristics that you want to capture in the survey.

Purposive sampling ensures that the diversity of conditions present in the zone are captured in the sample. The random selection reduces the likelihood that someone (staff person or local agency) will introduce a bias in order to favor a specific agenda. Because the actual number of communities that the teams will be surveying will be small, you want to ensure that the sample is as representative as possible of the communities in the region. For this reason, it may be necessary to disqualify communities that are totally unique or very different. The best way to determine, which are the outlying communities (i.e., the exceptions to the rule) is to discuss the situation with several individuals who are knowledgeable about the area.

Examples of criteria used for purposive sampling includes nearness to roads, access to markets, ethnic differences, livelihood strategy differences, agro-ecological differences, nearness to urban areas, etc. The purpose of the survey is to provide a picture of the range of situations that might influence livelihood outcomes.

Once the selection criteria have been developed, it is important to place a number of communities found in the region into categories that represent the criteria. Stratifying the communities along these criteria can ensure that certain characteristics will be found in the sample. Communities should be randomly chosen within each category. The number chosen will depend upon the constraints discussed above.

After the sites have been chosen, each site should be visited before the team begins the study to determine that the conditions are appropriate and that the community wants to participate. After these visits it may be necessary to exclude a site and choose an alternative. Once again a random process should be used to select a new site.

10. Baseline Surveys and Data Management

Baseline surveys are an important component of effective M&E systems and are particularly critical for evaluating program impact. Baselines are usually conducted after broader needs assessments that are designed to determine potential points of program intervention. When appropriately conducted, baselines capture information on indicators that the project is trying to influence and describe "pre-intervention" conditions against which to measure changes brought about by a particular project or intervention. They may also provide valuable information on indicators useful for monitoring project performance (WFP, 2003).

Definition of a Baseline Survey

A baseline survey determines "pre-intervention" conditions for a defined set of indicators that will be used to assess achievement of intended outcomes and impacts as expressed in the projects' logical framework. When compared with the condition of the same indicators at some point during implementation (mid-term evaluation) and post-operation implementation (final evaluation), the baseline forms the basis for a comparison of "before and after" conditions or a measurement of "change over time". Without baseline data to establish pre-operation conditions for outcome and impact indicators it is difficult to establish whether change at the outcome level has in fact occurred or whether or not change is attributable to the particular intervention.

When to do a baseline

A baseline survey should be conducted prior to the onset of project activities in order to establish the pre-operation conditions of the outcome and impact level indicators. Unfortunately, baseline studies are often conducted after project activities have begun, sometimes leading to an underestimation of the intervention's overall impact.

Source: WFP 2003

10.1 Initial considerations in conducting a baseline survey

There are several important considerations that must be taken into account *before* conducting baseline surveys. First, it is critical that baseline survey teams determine information needs and clearly define their **measurement objectives**. When objectives are clearly specified, appropriate questions can be included in the survey questionnaire and a suitable sampling plan designed to measure them. When they are not clearly defined, the baseline survey and consequently the program evaluation may lead to inaccurate or inconclusive evaluations of program impact. The identification of assessment objectives, determination of information requirements, and design of baseline surveys should each be guided by the project's logical framework (discussed in Ch. 6).

The assessment team should select **methods of data collection** best suited to fill the information requirements of the baseline study. Quantitative surveys are often viewed as the most reliable and appropriate method of obtaining baseline information against which project performance and impact are measured. Assessment teams may find however that it is important to use qualitative techniques in conjunction with quantitative information in order to capture community perceptions of such change and ground quantitative data within a broader contextual environment. It is important to note that the chosen research methodology will have a profound

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effect not only on the design of the baseline survey, but also on its ability to *reliably* measure project impact.

When selecting the appropriate research methodology, the baseline assessment team should carefully consider the use of a "control" or "comparison" group. A **control group** is a group of individuals or households who will not be among the beneficiaries of the particular intervention. In order to ensure comparability, control group members should share all other important characteristics with the target group (exposure to risk, food and livelihood security, etc.). Based on pre-determined indicators, the control group is compared *before and after* implementation of activities to the group of project beneficiaries. Any measure of change in either the control or beneficiary groups is then used to make a quantifiable determination of the cause and effect relationship between program activities and intended outcomes (WFP 2003).

While the use of a control group directly contributes to the measurement of program impact, the practice raises several important issues. First, the survey team should carefully consider the ethical implications of involving a control group in an activity from which they will not directly benefit. This is particularly true in environments characterized by widespread hunger and/or poverty. Even in instances where the use of control groups may be warranted, the increased cost of doing so (e.g. the increase in sample size) may be a prohibitive factor.

Finally, before implementing a baseline survey, the survey team should give careful consideration to the ways in which **data analysis** will be conducted. While the survey team may not be responsible for data analysis, they should be attentive to the ways in which the data they collect will be used.

10.2 Methods of data collection

Baseline surveys may utilize two distinct types of data – quantitative and qualitative. **Baseline surveys typically prioritize the collection of quantitative data** in order to enable more objective measurement of changes in outcomes and conditions resulting from project interventions. Quantitative data are particularly appropriate for baseline studies due to the fact that they allow measurement of progress toward intended performance and outcome targets detailed in the project logical framework. For instance, baseline and mid-term evaluations may look to assess the progress of a particular project by quantifying the percentage of children attending school in a particular community, determining the average value of household assets, or measuring change in household agricultural production. The analysis of quantitative data typically requires the use of electronic statistical packages for the calculation of sample means, frequencies, standard deviation, etc.

Alternatively, baseline surveys may also collect qualitative data in order to ground quantitative measurements in a broader social, economic and/or cultural context. For example, while quantitative data may confirm that household food consumption has declined over a particular period, qualitative data may reveal important differences in consumption related to gender, age or the presence of chronic illness within a particular household or community. Qualitative information can also be particularly useful in determining trends in asset accumulation and utilization, access to health services and education, and participation in social networks that support livelihood activities. Qualitative research may also help to determine the ways in which

food and livelihood security strategies are affected by a range of shocks. The collection of qualitative data is usually guided by a topical outline (see example of Topical Outline – Annex 9).

Qualitative topical outlines are specifically intended to elicit information that cannot be represented numerically such as people's perceptions of resources, constraints, social relations, wealth distribution, seasonal trends, and selection criteria. The most common types of qualitative methods used in assessments include key informant and group interviews, focus group discussions, transect walks, and seasonal calendars, each of which are described in Annex 10.

Characteristics of Quantitative Data
- Seek to quantify the responses of survey respondents in numeric terms
- Use close-ended questions thereby limiting the range of potential responses
- Typically employ probability sampling techniques that allow for statistical inference to a larger population with defined levels of probability and tolerable error (confidence interval)
- Use objective measurement techniques (area of land under cultivation, weight of food consumption, employment income, anthropometric indicators, etc.)

Characteristics of Qualitative Data
- Intended to reveal descriptive information such as perceptions and opinions expressed by individuals
- Use open ended questions to collect a range of experiences and allow in-depth analysis of context
- Typically employ a participatory approach that allows respondents to prioritize issues they feel are important
- May use purposive sampling techniques that reveal the perspectives of a particular type of individual or group

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10.3 Developing a baseline survey

Prior to finalizing the actual baseline survey instrument (questionnaire), the survey team should outline an overall Baseline Survey Plan. The development of such a plan is critical not only for ensuring efficient implementation of the baseline study, it's important for ensuring that subsequent studies (mid-term and final evaluations) employ similar methods and obtain directly comparable data.

Figure 3: Essential Components of a Baseline Survey Plan

At a minimum, a Baseline Survey Plan should address each of the following items:

- *Background and purpose of baseline study*
  - Description of program design and target beneficiaries
  - Objective of study including list of baseline indicators drawn from logical framework
  - Review of existing data sources

- *Data collection methods*
  - Defined units of study (communities, households, individuals, etc.)
  - Proposed primary data collection methods
  - Sampling description

- *Survey design*
  - Survey questionnaire and/or topical outline
  - Arrangements for pre-testing

- *Guidelines for Fieldwork*
  - Composition of assessment team
  - Training to be provided to enumerators
  - Timetable for fieldwork
  - Arrangements for supervision/coordination in the field

- *Data analysis procedures*
  - Arrangements for data entry and processing (including data cleaning)
  - Proposed framework for analysis
  - Proposed data tables indicator calculations and criteria for data desegregation
  - Training required for data management and analysis

- *Reporting and feedback*
  - Proposed format of baseline study report
  - Arrangement for presentation/dissemination of assessment findings

Source: WFP 2003

Following agreement on the central components of the baseline survey plan, the team can concentrate on developing the actual survey instruments. While the design of individual baseline surveys must be adapted to local context and programming environment, survey teams should always proceed through the following steps when developing a baseline survey (WFP, 2003):

Step 1:
Using the Logframe Matrix described in Chapter 6, select *quantifiable* (numeric, measurable) indicators to be included in the questionnaire.

Step 2:

For each indicator, identify all of its independent components: quantities to be measured as well as the relevant types of households or individuals. It may help to arrange each of these components visually to represent important relationships between them. Ideally visual representation of these components in the Logframe Matrix will support quantifiable (numeric) comparisons between data collected during the baseline survey and subsequent evaluations.

Step 3:

The next step is to attach specific variables to each indicator. Variables are those measurable components that you just identified for each outcome indicator. Representing a discrete category of information, a variable can be continuous/quantifiable (e.g., amount of wheat produced) or categorical (e.g. participating vs. non-participating farmers). A variable should only hold a single and very specific piece of data pertaining to a particular individual or household.

Step 4:

Once individual variables are identified, specific assessment tools must be created to measure them. Typically, this means developing survey questions that allow measurement of each distinct variable. Ultimately, the responses to such questions will provide the basis for determining changes over time and the degree to which they signal the achievement of intended program outcomes and impacts.

The design of questionnaires should always be facilitated and/or supervised by individuals with substantial knowledge of both quantitative and qualitative research methods as well as statistical analysis software packages. Furthermore, while the survey instrument must adhere to the information requirements dictated by the logical framework, a number of steps can be taken to ensure that implementation of the survey is both practical and appropriate to the local context. These steps include the following:

- ✓ Review previous instruments used for similar studies

- ✓ Conduct focus group and/or key informant interviews with representatives of the target community to get agreement on purpose for and basic design of survey

- ✓ Brainstorm a first draft instrument

- ✓ Get comments from others and reduce the number of questions needed to measure indicators

- ✓ Pre-test the instrument for:
    - sequence of questions/flow
    - comprehension of questions
    - appropriateness of questions
    - coding to fit responses
    - timing, skip-patterns

- ✓ Review second draft based on the pre-test findings and prepare third draft

✓ (If applicable) translate the instrument from the language it was designed to the language for interviewing and back by two independent translators.

Figure 18: TIPS for Questionnaire Design

Keep it Short

- Make surveys short, both in terms of questions and in the duration per interview. Respondents generally begin to tire after 30-45 minutes of questions.
- Prioritize questions in case you run out of time to ask them all.
- Limit questions to respondents' own knowledge and practice.

Keep it simple

- Consider the level of language and conceptual difficulty of the survey. If it is kept simple, it will be easier for the respondent to understand.
- A simple questionnaire may allow the use of local interviewers from the community which will enhance rapport
- Minimize the range of response options or choices in your question in line with what it is you really need to know.
- Avoid asking for more than one piece of information in a single question ("Were you pleased with the cleanliness and the hours of service of the clinic?")

Make it Interesting

- It can be helpful to include questions that are interactive and/or rely on graphic responses (e.g., drawing a small map or choosing among pictured items)
- Get the 'right person' to answer the question. For example, if it's about women's responsibilities and you need access to the women, in some cultures it is difficult to speak directly with women. In some cultures, it's easier to gain access to women if you have female interviewers.
- Try to collect ratio data. This is the best kind of data for quantitative data, especially for those questions that will most benefit your research.

Leave No Room for Bias

- Consider potential sources of bias and how they can be avoided, such as respondent bias, interviewer bias and question bias (leading questions)
- Avoid emotionally charged questions.
- Avoid superficial questions that provoke near-unanimous agreement. For example, "Do you think that the interest rate charged by should be lower? "

TANGO, 2006

10.4 Data collection process

After designing questionnaires, determining methods and establishing sampling strategy, the actual data collection process must take place. In order to ensure that the baseline survey process unfolds in and efficient and effective manner, the project should ensure that the following capacities and conditions are in place:

➢ *Assemble a qualified survey team:*
- Depending on existing technical and financial capacity, project managers may consider hiring an external consultant to direct baseline surveys and project evaluations
- If necessary, train enumerators and support staff on M&E principles and specific duties
- Create a M&E advisory board, with multi-sector experts

➢ *Ensure quality control:*
- Motivate staff and stakeholders
- Set clear and practical objectives for the baseline survey
- Brief all staff and stakeholders on the importance of data quality
- Put measures in place for quality control/data reliability in the field
- Create an M&E coordinator position (if an M&E supervisor is not already on staff)

➢ *Effectively link M&E with program management:*
- Coordinate the efforts of M&E staff and personnel within technical sectors according to the adopted project logical framework
- Ensure that job descriptions for all staff members are clear with respect to M&E responsibilities (i.e monthly reporting)
- Create channels for distributing data gained through assessment and evaluation activities to each technical sector within the organization
- Adapt assessment methodologies and tools in response to information requirements identified by program managers

Once the survey team has been assembled and adequately trained, the Assessment Supervisor and Field Coordinator should take responsibility for ensuring that data is managed and organized systematically throughout the data collection process to allow for timely processing and analysis. As part of the collection phase, it is important to; 1) conduct regular debriefing sessions with enumerators to assess and make necessary adjustments to data collection (interview) processes; 2) confirm logistical arrangements (appointments, travel arrangements); and 3) allocate sufficient time for processing and cleaning the data (TANGO, 2006).

Field work should proceed according to a time schedule, and it is important that each interviewer understands and follows field procedures and how to handle various problems that may be experienced during the field work. Each of the following steps should be followed to ensure successful implementation of a baseline survey.

Step One: Before arriving to conduct the survey, it is important to let the community know that the survey team is coming to visit them on the scheduled day. This can be done by sending out a Country Office Field Representative prior to the team's arrival. It is also important to notify local authorities that the survey is going to take place and in which communities and households. Care must be taken not to politicize the survey process or raise expectations among the population regarding follow-on projects or programs.

Step Two: If the baseline includes both a quantitative *and* a qualitative component, the assessment team should be divided into sub-teams for qualitative and quantitative data collection. Quantitative teams will coordinate to conduct household interviews and other quantitative data collection activities. Members of qualitative teams will focus on data collection methods such as facilitating focus group discussions, conducting wealth ranking exercises or constructing community maps, seasonal calendars, etc. It is unlikely that these activities will occur simultaneously and should be sequenced according to a program schedule agreed on by the survey team and community leaders.

Step Three: Conduct interviews with households, community groups, key informants and/or service providers. Again, baseline surveys should address the information requirements identified by the project logical framework. General topics may include household food consumption and livelihood strategies, community infrastructure, land tenure arrangements, sources of credit, marketing, typical labor arrangements, and government programs in the area.

Step Four: During data collection it is advisable to conduct periodic random reviews of data collection forms. Forms can be reviewed by a data collection supervisor, by an independent consultant, or by data collection personnel (who can check other members' forms). Check for errors in coding, missing information and legibility.

Step Five: Once data collection in the field has been completed, the survey team returns to a central location and begins entering qualitative information into matrices and quantitative information into data analysis packages. Data entry tasks are sometimes contracted out to local agencies because this saves time and money. Data entry technicians need to be familiar with the questionnaire and the range of responses. It is important to leave little room for interpretation by the data entry technician. The quality of data entry should be monitored. A random selection of questionnaires should be re-entered as a quality control measure.

10.5 Data management

Data management is an extremely important aspect of M&E. Given the long path that data typically travels – from initial collection by enumerator, to entry in a database, analysis, interpretation and presentation – it is critical to have a practical plan for storing, organizing, and reviewing information for the purposes of project management. Furthermore, an effective data management plan will ensure that the time, effort and financial expense of data collection contributes to the continual learning and feedback necessary for improved project design in the future.

Prior to beginning data collection, M&E team should develop a clear **data management plan**. Typically, data management entails the storage of collected information in a database that is easily accessible for all who could potentially use it. The pool of potential users for M&E data could be quite large given the value of tracking changes in individual indicators among a range of program sectors. Although data management plans must be adapted to the particular programming environment and M&E system, they should pay specific attention to each of the following issues (Mazzeo, 2005):

- Specific data needed (types, variables etc…)
- Timeframe-how often will data be collected
- Source of data-where and how will it be collected
- Data analysis-how and who will do analysis
- Dissemination/utilization-what reports need which analyzed information
- Responsibilities-who is responsible for which aspects of this entire MIS

Ideally, the Data Management Plan will be supported by a functioning Management Information System (MIS). For project managers and M&E staff with reliable access to the necessary computer technology, an MIS can serve as a valuable tool for managing the information produced from the individual components of an M&E system in a timely and efficient manner. When properly designed and implemented, an MIS can help coordinate the activities of M&E staff, as well as organize the collection, analysis and dissemination of information required for effective program management. The following is a partial list of steps that will help ensure reliable and effective data management (Mazzeo, 2005):

- ➢ **Document carefully** – keep a master file of all steps, correspondence, and particularly, all decisions during the process of a study. This file will be invaluable for tracking information, for analysis and write-up, and for learning lessons to improve similar studies in the future.

- ➢ **Develop a consistent data code book** - A code book is a way for documenting codes in order to make the database transparent and accessible to everyone. Codes are used for entering collected data into data analysis software packages ('0/1' binomials for yes/no responses) making it easier to compute sample means and percentages. Coding instructions should be flexible enough to allow for necessary changes and should provide clear instructions for missing and/or incorrectly entered data.

- ➢ **Back-up data regularly** – always do regular back-ups of data and keep logs of data that has been collected. The loss of even a small amount of data can prove crucial to the analysis because it is so expensive to go back to the field.

- ➢ **Share your results** – active-learning workshops are the most important means for providing feedback to local institutions and the community at-large.

11. Data Analysis

Data analysis is a process of describing data and exploring relationships between variables contained in the data set. Analysis enables one to draw conclusions about groups of people or things – gauging their status, how they may be different or alike, how they change over time, how factors might relate to each other, etc. Good analysis is absolutely critical to sound decision-making, and directly influences the ability of M&E managers to assess progress and change.

Data analysis is a complex process that includes quantitative reasoning and interpretation of contextual qualitative information. Both qualitative and quantitative techniques and tools can be used to analyze outcomes based on survey findings. For instance, specific tools can be used to provide quantitative measures of food and livelihood security such as dietary diversity, number of daily eating occasions and poverty status. Qualitative results can also analyzed by organizing them into consolidated matrices that inform measurement of the specific indicators identified in the project logical framework (Mazzeo, 2005).

Those responsible for analyzing quantitative data must have experience in statistical analysis and statistical software packages. This section does not attempt to teach analysis; rather it discusses key concepts and issues in analysis for M&E. There are three main aspects of analysis: data cleaning, descriptive analysis and interpretative analysis (multi-variable analysis).

11.1 Data Cleaning

Data cleaning is an essential step in data analysis. Every dataset contains some errors, and every analyst has experienced wasted days and nights in drawing wrong conclusions because the errors have not been corrected. A significant amount of time (may range between 20% to 30%) of data analysis time is typically spent in "cleaning" the data. However, once a clean dataset is achieved, the analysis itself is quite straightforward (Mazzeo, 2005).

Unless the dataset is small (i.e., less than 100 cases and 10 variables), cleaning is done in several stages. To begin with, the key variables are examined and corrected. For nutrition, this usually means the anthropometric and related variables (e.g., age, sex), and important independent variables such as location, socioeconomic factors, and feeding practices. Within a quantitative data set, common sources of error include:

- missing data coded as 999, 99 or other value 'not applicable' or 'blank' coded as "0" (zero)
- typing errors on data entry
- errors in following questionnaire logic
- Column shift (data for one variable column was entered under the adjacent column)
- fabricated data (data 'made up' or contrived)
- coding errors
- measurement and interview errors
- errors in converting units

Once errors are detected, it is important to know how to handle them appropriately so the data can be analyzed without losing their integrity or robustness. There are slightly different ways to deal with error in dependent and independent variables. If there are relatively few errors, values can be recoded to "missing" since they do not fall within an acceptable range. However, caution must be used in setting values to missing when conducting a multivariate analysis. In this case, the analyst may consider setting error values to the data group or set means, depending on the particular variable in question.

11.2 Quantitative Data Analysis

Quantitative data analysis should be planned in advance in much the same way as the actual survey is planned. Analysis should begin with simple descriptive statistics, such as frequencies, central tendencies (mean, mode, etc), and simple graphing. The average or mean is used for numerical variables and it is obtained by adding all scores or responses together and dividing by the number of observations. The median is the middle observation, it says that half of the observations are smaller and half are larger than the median. The most frequently occurring value is referred to as the mode. If several values share the greatest frequency of occurrence, each of them is a mode. Mean and median give idea of center, but no idea of how dispersed or compact the distribution is. The measure of spread most commonly used is the standard deviation, which is a measure of dispersion around the mean.

More complex analysis will include the creation of secondary variables, which are new variables created by mathematically combing one or more primary variables.   For example, if data were collected on average farm size, in acres, as well as total number of acres cropped then one could create a new variable representing the ratio of cropped land to agricultural land. This ratio would tell you what proportion of agricultural land is currently being utilized. There would be no need to ask this question in the study.

Common tables generated from the analysis include one-way tables or frequency distribution tables (using one variable), two-way tables or cross-tabulation (using two variables). Two-way tables or cross-tabulations are the basic tool to show relationship between two variables (Mazzeo, 2005).

Frequency Tables

When data is used to analyze behaviors, attitudes, opinions, perceptions and beliefs, some variables will be used as "explanatory" or independent variables, which will help to explain the result of a dependent variable. In the example below, the perception of change in the economic situation in the household is the dependent variable, which is analyzed by four independent or explanatory variables: age, gender, education and economic status. Note that the percentages have to be created in the direction of the independent variable. This is the most basic tool to compare and explain differences between subgroups of the target population. An example of a frequency table is provided below in Figure 19.

Figure 4: Sample Frequency Table

Percent distribution of respondents by perception of change of the economic situation of the household in the year preceding the survey by background characteristics.				
Background characteristics	**Improved**	**No change**	**Worsen**	**Total percent**
Age				
15 to 34	15.6	50.9	33.4	100.0
35 to 49	14.3	40.0	45.6	100.0
49+	10.2	44.4	45.4	100.0
Gender				
Female	9.7	39.8	50.4	100.0
Male	18.1	51.0	30.8	100.0
Education				
No schooling	3.7	42.6	53.7	100.0
Primary incomplete	15.9	47.5	36.7	100.0
Primary complete+	20.3	42.9	36.8	100.0
Economic status				
Rich or well off	30.2	58.8	11.0	100.0
Poor or very poor	6.9	39.8	53.3	100.0
Total	13.5	44.8	41.7	100.0

Cross Tabulation

Cross tabulations are also referred to as *contingency tables* or *bivariate tables*. Cross tabulations are used when analysts want to determine the relationship between factors by measuring how respondents answered on two or more questions. In order to do so, the analyst first has to determine the independent variable, and dependent variable, since the first is traditionally used as column headings and the latter are found in the row.

Independent variables explain or predict a response or an outcome, which is the dependent variable under study. As a basic rule, demographic information is usually considered independent, since characteristics such as gender, age, education etc. will normally determine the responses. If the variables being studied are not demographic, then the independent variable is determined by the study's objectives.

Cross-tabulation is primarily used to answer questions that involve the nature of the relations among two or more variables. Sometimes it is important to look at two variables together because one may influence the other. Before a statistical relationship can be established or tested (using more rigorous statistical techniques such as Chi Square or T-Test), distribution of two variables needs to be looked at to determine whether further analysis is warranted.

11.3 Qualitative Data Analysis

The most common qualitative data analysis techniques include descriptive analysis, content analysis, and inductive analysis. With descriptive analysis the results are organized in a logical manner and written up in a narrative form. This is a simple "reporting of the results," and is pure description of people's experiences, perceptions and practices. Descriptive analysis involves reviewing the information, identifying links, patterns, common themes, arranging the facts in order and presenting them as they are without adding any comments on their significance.

Content analysis involves analyzing descriptive reports for trends, themes or events. It can be used to summarize descriptive information or to transform it into quantitative information, and is often used to set up coding categories for quantitative tabulations. Data (from matrices, case studies, interviews) is organized into topics before being summarized. The use of direct quotations and anecdotes are important for effectively summarizing the essence of what was said or concluded. When more than one person is working with the data it is important to have each do their own content analysis and then compare the results.

Inductive analysis allows themes, patterns or categories to emerge from the data rather than being decided prior to data collection and analysis. Analysts can use the categories developed by people that conducted the assessment, or they can develop their own terms based on his/her interpretation of the data (analyst-constructed typologies). The primary purpose of typologies is to describe and classify the information. There are a number of software programs, such as Nudist, that assist in the classification process.

A common method of analyzing qualitative data obtained from the various survey instruments (focus groups, seasonal calendars, key informant interview, etc.) is through the use of consolidated matrices. Qualitative analysis matrices should reflect the topical outline, which is itself guided by information requirements specified in the project logical framework. For instance, potential topical areas for an assessment of household livelihood would include: context, conditions and trends; livelihood resources; institutional processes; livelihood strategies; and livelihood outcomes. Organizing qualitative information in a matrix provides a method for 'triangulating' (or grounding) quantitative data obtained from other assessment tools. Annex 9 provides an example of a consolidated qualitative data matrix on livelihood strategies and outcomes.

11.4 Data Interpretation and Presentation

Once the analysis is finished, the results need to be presented in a manner readily understandable by the audience. The presentation of results, either in written, tabular, or graphic form, is just as important as generating the results themselves. Decision makers require reliable and transparent information to make sound decisions about a project. Important considerations in presenting results and interpreting the data include the following.

- Readers typically prefer a shorter report that specifically addresses the analytical objectives of the assessment.

- Description of findings should be limited to those results that support recommendations or provides useful contextual information.

- Although the use of graphics helps the reader to better understand the results reports should avoid using visual elements that are inconclusive or that distort the data.

- Tables should be simple enough to lead the reader to basic conclusions regarding quantitative data. It is better to have a large number of tables than to combine various types of data in the same table.

- It is important to include contextual information in the description of data, as readers may not be familiar with the geographic areas or topical subject being assessed.

- Detailed information can be provided in annexes, with the body of the report including all information relevant to the assessment team's recommendations.

12. Information Sharing

Communication is an integral part of monitoring and evaluation. Reporting is the most common way of sharing M&E results, and lessons learned. It is a systematic and timely provision of essential information at periodic intervals. Sharing of information can be done using different communication channels including sharing of formal progress reports, special studies, informal briefs, workshops, informal discussions, posters, pamphlets, meetings and so on. A brief outline of the reporting requirements indicating who should receive a report and how often is typically included in the project design document or project proposal. These reporting requirements are primarily for the funding agencies for accountability reasons. The project also needs to share the M&E results internally within the deferent departments or sections. Moreover the project needs to communicate M&E findings to other stakeholders and for different reasons (IFAD, undated)).

At the beginning of a project it is important to develop a detailed communication strategy. This strategy should include not only formal reports but also communication efforts that seek feedback about interim findings, and discuss what actions are needed.

With representatives of all key stakeholders, develop a list of all audiences, what information they need, when they need it and in which format? Schedule clearly the production of information needs, showing who is to do what by when in order to have the information ready on time. Organize the events during which the information is to be communicated and discussed.

The following table presents an example of information needs which can form the basis of developing a communication strategy and schedule.

Table 7: Sharing of Information needs to be based on Information Needs		
Who needs	Information Needs	Frequency
Farmers (primary beneficiary)	• Which rice variety performed well? Why? • Progress in yield increase? • Which crop management practices worked better? Why? • What lessons that we can learn as a group from our work in the last crop season?	At the end of the rice season (half yearly)
Extension Staff	• Overall progress in rice yield in the area. • Which farmers' group (s) was able to achieve better yield? Why? • Which farmers group could not achieve their seasonal target? Why? • Lessons learned from the season?	At the end of each rice season (half yearly)

Extension Staff	• Progress in relation to half yearly project target. • Lessons learned. • # of farmers group participated. • # of trial plots used? • Area of trial plots? • …………………..	Quarterly, & Monthly
Technical staff	• Type of on farm experiment by farmers group • Ongoing problems encountered at the field • Which specific technical issues have been identified • Lessons learned. • List of activities worked well • List of technical issues addressed by the farmers using indigenous knowledge. • ………………	Monthly & Quarterly
Staff Management	• Work plans for each staff member • Performance (quantity and quality) of each staff member	Quarterly & Half yearly
Financial Management	• Expenses • Budget requirement • Audit reports	Monthly, Quarterly, Half yearly, and Annually
Funding agency	• Baseline • Plan • Progress (output, outcome, impact) • Results • Learning opportunities • Inputs • Issues • Expenses vs. budget	Quarterly, Half yearly, Annually, Mid term, and Final.
Relevant Govt. Departments	• Type of project • Area of operation • Progress • Issues • Policy implications • Audit report	Half yearly, & Annually
Other agencies	• Lessons learned • Outcome/ impact level progress • Area of operation	Annually

Internal and External Reporting

Internal reports can be informal and are helpful to manage projects better, make better decisions, monitor progress and early warning of problems, improve team communication and prepare external reports. External reports should be formal and help the project to be accountable, strengthening credibility by showing achievements, demonstrate the contribution to improving lives and soliciting future funding (IFRCS, 2007).

How to write good reports

Process: Cross-check consistency (eg work plan with budget)**;** refer to objectives and expected results in program updates explain progress, failings; leave summary section to the last.

Style: Think about your reader**;** be clear (summarize the facts, organize information, structure your response)**;** construct short sentences, use clear simple English**;** be concise and to the point and do not use**,** jargon, no assumptions or prejudices.

Content: Correct, up-to-date and relevant information, consolidate facts and findings; highlight numbers to date; add photos, maps and tables where relevant; use reliable sources and acknowledge them and state source of statistics.

Sensitivities: be careful about sensitive information- reports are not necessarily internal documents. Be neutral and non political; keep in mind that we are not alone on the ground; profile the Red Cross/Crescent comparative advantages and recognize contributions.

Analysis: Do not simply provide a list of activities. Look at each activity critically-Why it was done? What are the results? What difference is it making in the lives of the beneficiaries? What could be improved upon next time?

(IFRCS, 2007)

Knowledge sharing and learning

Monitoring and evaluation provides information on facts that, when accepted and internalized, become knowledge that promotes learning. Learning must therefore be integrated into the overall programming cycle through an effective feedback system. Information must be disseminated and available to potential users. Effective dissemination is an ongoing process that begins when project is formulated. To reach potential target audiences with the appropriate messages, a number of forms of dissemination will usually be required, including:

Checklist for learning:
- ◆ Record and share lessons learned
- ◆ Keep an open mind
- ◆ Plan evaluations strategically
- ◆ Involve stakeholders and beneficiaries on a gender balanced basis
- ◆ Provide up to date information disaggregated by gender
- ◆ Link knowledge to the users
- ◆ Apply what has been learned
- ◆ Monitor how knowledge is applied

- A detailed report with complete statistical and case study analysis: This report serves as a technical foundation for preparing other dissemination materials
- Briefing materials for the press or other mass media: should avoid all technical

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language. Each press release or briefing should focus on only one or two key findings and their implications so as not to confuse the reader.

- One and two-page policy briefs: should discuss not more than two aspects of the findings, assess the implications, and provide recommendations regarding actions they might take to influence interventions positively. Separate briefs will often be necessary for different groups of policy makers or community leaders so that the material can be made directly relevant to them.

- Group dissemination meetings or presentations can offer an opportunity to present the findings to members of the surveyed communities, large groups of policymakers or project managers, or the general public (IFRCS, 2007).

Part III. M&E Considerations for Sector-Specific Programming

13. M&E Considerations for Food Security Programs

There are a number of critical considerations that need to be taken into account in the design and implementation of monitoring and evaluation systems in food security programming.

13.1 Seasonality and Cross-program Comparability

Food security programming is highly contextualized. This requires an understanding of temporal as well as spatial factors specific to the target area. For example, in settings characterized by continuous rainfall variability, measuring production levels at a given point in time is not as useful as the inter-annual stability of production which assesses the resiliency of the system (McCorkle 2004). Accurate seasonal knowledge about how key indicators vary across an annual basis is a critical gap in current systems, as a result of the time and cost requirements of ongoing monitoring (Ellis 2003). Sentinel sites could be a useful mechanism to fill this gap.

As food security programs scale up to achieve impact, the development of monitoring and evaluation systems that are able to measure outcomes from across a range of operating environments becomes a key issue, particularly for regional programs. Livelihood systems, coping strategies and factors influencing vulnerability to food insecurity vary widely even within relatively small geographic areas. To manage this challenge, programs should first choose the appropriate effect level indicators for the context and intervention type. Programs with the same objectives, as determined by the problem analysis, can identify a set of core food insecurity and nutrition indicators to measure and compare across program areas.

In unstable development relief settings, food security programming will require flexible indicators, and targets. Indicators and targets will shift depending on the type of emergency and the state of food and livelihood insecurity in a target area, as well as the type of programming. When program priorities shift as a result of a sudden shock, a simultaneous shift in the types of primary indicators will be required.

13.2 Food Availability

Aggregate food availability is achieved when sufficient quantities of appropriate types of food from household production (cash crops, livestock and food crops) other domestic output, commercial imports, or food assistance are consistently available to all individuals within a country and are within reasonable proximity to them. Food is available if it is physically present in an area, including in markets. Much of this information should be available in secondary data sources. Figure 15 summarizes the minimum data requirements and potential sources of information on food availability for assessments.

Figure 20: Minimum Information Requirements for Food Availability

Type of Information	Source of Information
Secondary Data	

• **Production statistics**
• **Seasonality of production**
• **National food stocks**
• **Market and food supply infrastructure**
• **Import/ export statistics**
• **Macroeconomic situation and government policies (trade policy, exchange rate, balance of payment constraints)**
	• **Ministry of Agriculture**
	• **Ministry of Finance and Commerce**
	• **National Statistics Offices**
	• **USAID/FEWS**
	  http://www.fews.net/
	
	• **EU Food Security Units**
	• **Market information systems, if available**
	• **World Bank**
	  http://www.wfp.org/

Primary Data	
• **Market locations, accessibility, viability, volumes and prices (locally, nationally and in neighboring countries)** • **Change in functioning and flow of markets as a result of the shock** • **Market demand (changes in purchasing power and reliance on market supply)** • **Terms of trade between major cereals, livestock and income** • **History of shocks and impacts on food availability**	• **Key informant interviews with government staff, traders** • **Market observations in affected localities**

13.3 Food Access

Food access is ensured when households and all individuals within them have adequate resources to obtain appropriate foods for a nutritious diet. Access depends on income available to the household, on the distribution of income within the household and on the price of food. It also depends on social or institutional entitlements to which individuals have access--private transfers, public distributions of resources, charity, etc. Households access food through their own production, their ability to purchase food on the market or through barter, and receipts through social support systems. Purchasing power to acquire food on the market is primarily determined by income and prices. When prices rise, access to food for poor households becomes

more difficult. A household's store of wealth (e.g, savings, assets) is an important determinant of food access when regular livelihood strategies are curtailed or destrotyed by disastrous agro-climatic conditions, disruption to means of securing income, or another food security shock. The types of primary data that need to be collected on food access are summarized in Figure 16.

Figure 21: Minimum Information Requirements for Food Access

Type of Information	Source of Information
Secondary Data	
• **Sources of food (crop production, livestock , purchases, wild foods, fishing/ hunting, remittances, labor exchange, trade, aid)** • **Socio-political structures** • **Socio-economic differentiation** • **Gender considerations relative to food access and use** • **History of shocks and impacts on food access** • **Land distribution and use** • **Mobility and migration trends** • **Seasonality**	• **Local government** • **NGO reports** • **Livelihood profile data generated from secondary data review**
Primary Data	
• **Food stocks and storage** • **Sources of income (trade, employment, sale of food/non-food produce, remittances, casual labor, theft, aid)** • **Sources of assets (physical, economic, socio-political, human, natural)** • **Obligations (rent, energy/ fuel, water, shelter, health, loans)** • **Debt** • **Non-food needs (education, health, water, shelter, clothes)** • **Months of self-provisioning in a normal year** • **Normal terms of trade between assets and food, services and food** • **Infrastructure and market access**	• **Key informant interviews with district officials, village leaders, service providers, merchants, NGOs** • **Group interviews** • **Focus group interviews** • **Household interviews** • **PRA tools** • **Transect walks** • **Visual inspection** • **Market interviews** • **Wealth ranking**

13.4 Food Utilization

Food utilization incorporates issues of food safety and quality, storage and processing, sufficiency of intake at the individual level and the conversion efficiency of food by the body that results in sound nutritional status and growth. Food utilization is often impaired by endemic diseases, poor sanitation, lack of appropriate nutrition knowledge or culturally prescribed taboos that affect access to nutritious food according to age or gender. Figure 17 lists specific types of information required for food utilization.

Figure 22: Minimum Information Requirements for Food Utilization

Type of Information	Source of Information
Secondary data	

• **Nutritional status of children under 5 (wasting)**
• **Adult nutritional status, especially women (BMI)**
• **HIV/AIDS prevalence rates**
	• **Ministry of Health**
	• **DHS surveys**
	• **UNICEF nutrition surveys**
	   http://www.unicef.org/index2.html
	
	• **WHO health surveys**
	   http://www.who.int/en/
	
	• **Local health center data**

Primary data	
• **Normal (seasonal) levels of malnutrition** • **Anthropometric data on nutritional status of children** • **Food habits, preferences and acceptable food substitutes** • **Normal consumption patterns and dietary diversity** • **Availability and access to milling facilities** • **Food preparation practices** • **Disease prevalence (seasonal): diarrhea, fever, ARI, outbreaks of cholera, yellow fever, dengue** • **Normal access to and uptake of health services** • **Immunization coverage** • **Water supplies and sanitation provisions** • **History of shocks and impacts on food utilization**	• **Key informant interviews with district health officials, health service providers, village leaders, NGOs** • **Group interviews** • **Focus group interviews** • **Household interviews** • **PRA tools** • **Transect walks** • **Visual inspection** • **Village level primary data (nutritional survey)**

13.5 Market Information

Secondary data may reveal useful information regarding market structures and characteristics that directly and indirectly influence the level of food insecurity among target populations.

The understanding of how the staple food markets function and how households are linked to markets not only helps the overall needs assessment but also provides critical information to help design suitable market-based interventions to support food security in the short and the long term (TANGO 2004b). Even in emergency situations, almost all households in urban areas and many (especially the poor) in rural areas acquire much of their food, as well as other necessities, through market purchases or barter exchange. At the same time, many households also depend on functioning markets to gain income. Changes in market supply and prices, terms of trade, or wage rates thus influence household's access to food and their level of food consumption (Caldwell 2004)

14. M&E Considerations for Health and Nutrition

Monitoring and evaluation for health and nutrition is important not only for health and nutrition programs, but for many food security and multi-sector development programs. Nutrition (anthropometric) indicators are often used as major outcome or impact indicators for integrated food security programs.

The Millennium Development Goals (MDGs) among other recent global initiatives have increased the research and support to strengthen M&E for child health and nutrition. The MDGs have provided a commonly accepted framework, benchmarks and indicators for measuring development progress, which pertains to child health and nutrition. Six of the MDGs directly relate to children, maternal health, child mortality, HIV/AIDS, malaria and other major diseases.

Other current initiatives include the Integrated Management of Childhood Illness (IMCI), the Global Alliance for Vaccines and Immunization (GAVI), and ongoing UNAIDS/WHO efforts to standardize indicators for monitoring maternal to child transmission of HIV/AIDS (PMTCT) and other health and nutrition programs. There are however, serious constraints to such efforts. Issues such as poor data quality and limited data availability are common in countries that lack the ability to track trends and changes in the health status of their populations. Needless to say, the adoption of uniform standards carries important implications for designing and implementing M&E of health and nutrition.

14.1 Selection of Indicators

A list of indicators for monitoring health and nutrition interventions are widely used and have been used in Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS). At a minimum, information is generally collected on each of the following:

- PMTCT
- Newborn health (breastfeeding)
- Immunization

- Integrated Disease Surveillance and Response

- IMCI at the health care facility

- Diarrhea/ARI (acute respiratory infection)

- Nutrition and GMP (growth monitoring promotion)

- Mortality (child and maternal)

Output Indicators
Output indicators for health and nutrition programs include program activity related areas such as management, logistics, commodities, capacity building, behavior change communication (BCC). There are two types of output indicators in the health sector. There are functional outputs which entail the number of activities in each are of service delivery, and service outputs, which measure the quantity and adequacy (quality, access) of services provided during the program. There are not however, standard sets of indicators to measure these functional components of child health programs thus they are not included in the annexed listing of indicators.

Process Indicators
There are often many process indicators for health interventions due to the range of activities involving advocacy, policy, prevention, institutionalization of health care, etc. However, unlike communication efforts directed toward improving food security, behavior messages aimed at improving health and nutrition are subject to internationally recognized standards and policies supported by international organizations including WHO, and UNICEF. Many programs are somewhat generic such as national immunization programs. Process indicators tend to relate to components such as:

- Demand for services reflected as quality

- Access

- Care practices

- Program image

Improved health practices and timely care seeking behavior are measured at the population level, and include compliance with treatment recommendations (dosage and duration) and referral after receiving care from a health worker; increased fluids and continued feeding during illness; the provision of appropriate nutrition management (exclusive breastfeeding and complementary feeding); adequate consumption of micronutrients; and ensuring that a child receives a full course of childhood vaccination in the first year of life. (Gage et al. 2005)

Health and Nutrition Outcomes
Outcomes in the health sector usually refer to specific knowledge, behaviors and practices as well as program coverage and disease prevalence. Health programs often aim to promote improvements in key behaviors proven to be essential for survival in the intermediate term and over the long term. The key outcome of health programs is an improvement in the knowledge, attitudes, and health practices of caretakers, households and communities and coverage, which

are critical for reducing overall mortality. (Gage et al. 2005)   These outcomes are most relevant for the prevention component of health programs.

Impact
Impact indicators specific to health and nutrition tend to be related to reducing malnutrition (or improving child level nutritional status), reducing morbidity and mortality (child or maternal), reducing specific disease incidence (TB, child vaccine preventable diseases).

14.2 Integrated Disease Surveillance and Nutrition Surveillance Systems
Household and community level data can come from population-based surveys such as:

- MICS-UNICEF's Multiple Indicator Survey-also a large, comprehensive survey including information on maternal and child health and mortality.

- DHS-USAID's Demographic and Health Survey-large, comprehensive including information on reproductive health, maternal and child health and mortality

- 30-Cluster Survey (WHO Control of Diarrheal Disease (CDD)/ARI/Breastfeeding Survey; WHO Immunization Coverage Survey/PVO KPC Survey

- CENSUS-based Household Information Systems

Health systems data can come from:

- Routine Health Information System Data

- Health Facility Surveys (HFS)-these surveys usually focus on outpatient services and referral services. Survey methods include WHO integrated HFS, BASIC integrated HFA, CORE adapted and integrated HFS, USAID-SPA

- Other program reviews may be available and might include routine surveillance data, reviews of activities and indicator tracking tables etc.

Surveillance is the ongoing process of systematic collection, collation, analysis, and interpretation of data with prompt dissemination to those who need to know for relevant action to be taken. (Gage et al. 2005) Disease surveillance systems (nutrition surveillance systems exist as well, to a lesser extent) are essential to control communicable diseases, which are the most common causes of death and disability in developing regions of the world. They track outbreaks, however are important for evaluations of health programs. For example, measles surveillance systems permit further evaluation of immunization coverage as well as for the implementation of appropriate programs and to improve disease control when effective. As well, nutrition surveillance systems are gaining momentum in the developing world and often occur in conjunction with the government (ministry of health) in areas where development programs are in operation. This provides nutritional data for programs to set targets and helps in vulnerability assessments. As well, this data enables a country (and programs) to track trends in a country or region.

Information flow in an integrated disease surveillance system (IDS)

An ill person seeks medical attention. Information about the patient is recorded in a register. The register is updated daily to include information for both inpatients and outpatients. At a minimum, the following data are collected: the patient's ID number, date of onset, date of presentation at the facility, date of discharge (inpatient only), village (location), age, gender, diagnosis, treatment, and outcome (inpatient only).

If the clinician suspects a disease or condition that is targeted for elimination or eradication, or if the disease has high epidemic potential, the disease is reported immediately to the designated health staff in the health facility and at the district level. The health facility should begin a response to the suspected outbreak. At the same time, the district takes steps to investigate and confirm the outbreak. The investigation results are used to plan a response action with the health facility.

Periodically, once a month, weekly, quarterly, or annually, the health facility summarizes the number of cases and deaths for each routinely reported IDS condition and report the totals to the district. The health facility performs some analysis of the data such as keeping trend lines for selected priority diseases or conditions and observing whether certain thresholds are passed to alert staff to take action. One action that is taken if an outbreak is suspected is to obtain laboratory confirmation. Laboratory specimens are obtained and the following data are documented: type of specimen, date obtained, date sent to the lab, condition of specimen when received in the lab (good or poor), and lab results. At the district level, data are compiled monthly for each of the IDS conditions. The district prepares analyses of time, place, and characteristics of the patients such as age and gender for both outpatients and inpatients. The results are sent to either the regional level or the central level.

The district uses the data to plot graphically the routine surveillance trends and epidemic curves for IDS conditions. In addition, the district maintains a log of suspected outbreaks reported by health facilities. This list documents the nature of the potential outbreak, the number of possible cases, the dates of investigations and actions taken by the district. It also includes any findings of investigations led by the district, regional, or national levels.
The district surveillance focal point provides disease-specific data and information to each disease prevention program.

14.3 Nutrition

For M&E, nutrition programs that seek to improve household food security may have to draw on indicators from other sectors. Similarly, nutrition indicators may be used as outcome indicators in an integrated food security program, or they may be used as impact indicators for a "stand-alone" nutrition program. See annex 1 for a standard list of nutrition indicators. Please also refer to section six and seventeen. Considerations for nutrition are:

- If nutrition is included in a "package of services", it may be difficult to attribute which program component has affected child nutritional status.

- Contextual factors, particularly related to the mother, are widely recognized for their influence in child nutrition, such as: Women's education (literacy), women's status, political factors, environmental and development (water and sanitation), access to health care

- Coverage, Targeting, Intensity and Content are the four factors that comprise effectiveness in terms of interventions on child nutrition.

- Efficacy versus effectiveness-efficacy commonly refers to the effectiveness of a program under controlled circumstances (for example a pilot site/level) and the change that can be attributed. Effectiveness refers to larger scale programs that can still attribute impact to the program interventions. These distinctions must be noted.

15. M&E Considerations for Micro Enterprise Programs

Micro and small enterprises (MSEs) are important income sources for poor and vulnerable people in developing countries. Large numbers of entrepreneurs, family members, and employees participate in MSEs. Enhancing the productivity and value added of these micro and small enterprises can increase income, wealth, and wellbeing of micro-entrepreneurs, those who work for them, and their communities.

Monitoring and evaluation of micro enterprise development programs is conducted at four distinct but related levels (Wesselink, B. 1996). These include 1) participating enterprises; 2) associated households; 3) product markets, value chains and clusters, and 4) business service markets. The critical questions to be addressed at each level are outlined below:

1) Participating enterprises.
   - Do the interventions raise enterprise revenues and profits?
   - Do they enable MSEs to increase the value of their assets or net worth?
   - Do they help MSEs to upgrade their operations and/or link into more lucrative value chains?
   - Do they reduce risk for enterprises participating in value chains and clusters?
   - Do they allow MSEs to perform sustainably in new markets?

2) Associated households
   - Do the interventions raise household incomes?
   - Do they enable households to increase their assets or net worth?
   - Do they help poor clients to improve nutrition?
   - To whom do program benefits accrue (enterprises, households, men and women)?
   - How rapidly are the benefits realized?
   - Are the benefits sustained?

3) Product markets, value chains and clusters
   - Do the interventions help to expand product markets?
   - Do they result in greater innovation and/or improved inter-firm cooperation?
   - Do they improve product market stability?

- Do they improve product quality and/or introduce new products?

4) Business service markets
- Do the interventions help to expand service markets?
- Do they improve service market stability?
- Do they improve the quality of business services and/or introduce new services?
- Impacts of different types of business services (training, advice, marketing assistance, etc.)?
- Is the availability of financial services (supplier credit, microfinance, etc.) a necessary condition for adequate utilization of business services?
- What can we learn about the secondary distribution of information to other enterprises from firms that participate in BDS services?

16. M&E Considerations for Reproductive Health Programs

Reproductive health refers to the health and well-being of women and men in terms of sexuality, pregnancy, birth and their related conditions, diseases and illnesses. Many programs reaching youth are trying to achieve reproductive health goals that relate to critical sexual and reproductive health outcomes, such as:

- fertility: the number of pregnancies a woman has in her lifetime;
- illness: caused by sexually transmitted infections, reproductive tract infections, HIV and/or nutritional status;
- mortality: primarily related to pregnancy and childbearing, including infant and maternal mortality, and also including AIDS-related deaths; and
- nutritional status: which impacts both women's health and that of their infants.

M&E results from a reproductive health (RH) program can help stakeholders and the community to understand the progress and the critical needs that may inhibit the progress. Monitoring and evaluation results enable communities to inform local leaders about needs and to advocate for funding. Results point to ways in which we can develop new and better systems of support for reproductive health and identify additional community resources (Adamchak et al, 2000).

Measuring a program's access and coverage can be complex.
Access to reproductive health programs concerns the extent to which program participants can obtain appropriate reproductive health services at a level of effort and cost that is both acceptable to and within the means of a large majority of youth in a given population. (e.g. convenient hours and location; affordability; perception of privacy, feeling of safety and confidentiality, etc.)

Assessing individual reactions to a program can be difficult.
One measure of quality is how the reproductive health program is received by stakeholders, staff and participants. Assessing how the program is received by these groups will contribute to the understanding of how to overcome social resistance to reproductive health programs. It will also help to determine whether the program is headed in the right direction and to identify problems in time to correct them.

Measuring influences on behaviors that didn't occur is difficult.
Many RH programs are concerned with preventing unhealthy behaviors and influencing developmental pathways. They are often concerned with measuring events that did not occur because of the program intervention.

Measuring behaviors at a variety of developmental levels can be problematic.
Reproductive health programs are concerned with reaching young people throughout a developmental transition. Measuring outcomes on sexual behavior can be problematic. Some young people may not have heard about certain sexual behaviors and therefore have problems answering questions about them.

Some changes may not be measurable for a long time, and others may be hard to measure at all.
It may be several years before changes can be observed in the reproductive health status of people, as opposed to the relatively short amount of time it takes to observe such outcomes as changes in levels of knowledge. Moreover, some changes in outcomes may occur long after the program is over; for example, a program that promotes delay of first sex among youth ages 10 to 12 may not be able to observe its results for several years after participants take part in the program. It is therefore important to track trends in such behaviors.

Attributing changes in outcomes to a particular program's strategy and activities is difficult.
Measuring changes in outcomes alone is not enough to conclude that the changes occurred as a result of the program. Other events, like shifting economic or social conditions, may also affect outcomes that you are measuring. There may also have been other program activities directed at the target audience, such as a mass media campaign, going on at the same time.

Some types of evaluation may require funds beyond a youth program's resources.
Outcome and impact evaluations can be costly, especially when measuring numerous outcomes or those that are more difficult to assess. If programs cannot rely on existing data sources, they may need to collect quite a bit of new information about the youth populations they reach. Developing survey instruments, conducting correct sampling procedures and collecting data from individuals can all be expensive. Programs that do not have in-house evaluation expertise may also have the added cost of technical assistance or hiring external evaluators.

Tips for Addressing the Challenges of Monitoring and Evaluating Youth Programs
1. Monitor the system that is set up to deliver reproductive health program.
2. Base your program activities, and thus your evaluation effort, on theory.
3. Review what is known about the factors that influence health outcomes.
4. Test and document the elements that contribute to your program's effectiveness.
5. Engage in a genuinely participatory process.
6. Ensure that data collection effort addresses ethical concerns.
7. Be creative in asking sensitive questions.
8. Define objectives realistically and provide enough time to measure changes.
9. Use a combined qualitative-quantitative approach.
10. Use monitoring and process evaluation data to support the outcome and impact evaluation.

11. Learn by trial and error.
12. Limit evaluation costs when possible.
13. Build on the advantages of evaluating reproductive health programs.

17. Integrating Cross-Cutting Issues into Data Collection

It is increasingly important that M&E systems account for the impacts of a number of cross-cutting issues. For example, the strategies used by households and communities to obtain adequate food and income are often set against a backdrop of pervasive chronic illness, social inequality and social or political instability. For this reason it is important to consider specific methods of assessing the impact of cross-cutting issues such as HIV/AIDS, gender and conflict on vulnerability experienced by target households and communities. While detailed data on each of these cross-cutting issues can be obtained through primary data collection, much of the contextual information needed to develop livelihood profiles is available through secondary data analysis.

17.1 HIV/AIDS

The incorporation of information on chronic illness is vital to understanding how livelihood strategies can increase susceptibility to HIV exposure and transmission as well as the livelihood factors that can increase vulnerability to post-AIDS infection impacts on income and food production. Illness and death as a result of HIV/AIDS invariably results in declines in food crop production associated with the loss of labor as well as a decline in household cash income. Therefore, HIV/AIDS should be considered in all health and nutrition surveys. In areas that are especially hard hit by the epidemic a separate complementary study should be conducted. The list presented below includes the type of information required in a complementary study of vulnerability to HIV/AIDS (TANGO 2004b).

- **Morbidity and mortality** within the household, particularly chronically ill household heads and adults

- **Dependency ratios**, including information about the presence of **orphans** and the number of contributing adults

- **Costs** associated with health care and funerals

- **HIV prevalence** by affected community

- **Identification of risk factors** to assist in determining appropriate targeting and interventions

- **Cultural attitudes and practices** around sexuality, HIV/AIDS, and reproductive health (through focus group discussions)

- **Intravenous drug use** and by whom

- **Gender-based violence** (through separate female/male focus groups)

- **HIV/AIDS policies** at the local and national levels

Resources for AIDS affected families (educational opportunities, skill building, and income generating opportunities).

To understand the impact of HIV/AIDS on the food insecurity of the community, it is important to account for the effects on availability, through production; access, through income; and on utilization, through changes in dietary diversity and intake. In addition, these impacts have intra-household implications with differential impacts on women (i.e., widows and single headed households), children, orphans, and the elderly. The economic consequences of HIV/AIDS can accelerate gender inequality. For example, when a household looses a productive male adult, food security, access to assets, and coping strategies may disintegrate quickly for the surviving widow and her children (ACDI/VOCA 2006).

17.2 Gender
In most development contexts, men and women are impacted differently in terms of their vulnerabilities, capacities, needs and coping strategies. Women may lose a spouse as a result of conflict or natural disaster, or may be required to take on additional tasks if men have out-migrated to seek employment. Failing to take gender into consideration during the assessment process can increase inequality as well as place undue burdens upon either women or men (TANGO 2004b).

Qualitative and quantitative tools can be modified to capture gender-related information during vulnerability assessments and baseline surveys. Tools used for gender analysis should be able to clearly identify associations between gender and specific issues facing populations in emergencies (e.g., security, labor allocation, access to credit, and inclusion in social networks). Gender can also be disaggregated during the tabulation phase of data analysis.

17.3 Conflict
There are several important benefits of incorporating an analysis of potential conflict into a larger assessment of vulnerability. Most importantly, an accurate assessment of potential conflict can help to minimize violence, deprivation or humanitarian crises that threaten the sustainability and development of affected communities. Second, an understanding of prevailing sources of conflict can help to inform short-term relief strategies and guide the implementation of longer-term development programs aimed at reducing the likelihood of future conflict (Davies 2000).

It is important that vulnerability assessments are capable of identifying latent or low-level conflicts or instabilities before there is an acute impact on community living conditions. In addition to identifying the key factors driving the instability, the assessment should also consider the effectiveness of preventative strategies used to avoid conflict, as well as their sustainability.

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Annexes

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Annex 2: Sampling

Annex 3: Monitoring Indicators for Risk and Vulnerability

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Annex 1: Components of a Humanitarian Information System

Component	Frequency of Analysis	Information Categories/ Questions Addressed	Forward Linkages	Backward linkages
1. Baseline Vulnerability and Poverty Assessment	**Infrequent** (Every 5 years, or when context changes)	• What are the basic livelihoods of groups? • What are known or likely hazards: natural and environmental, social, economic and political? • What is the likelihood of these occurring, and what indicators would predict? • Who are the most vulnerable groups? • What capacities, services and resources (physical, human, social) exist to mitigate vulnerability? • What are coping and risk minimization strategies? • Baseline information against which to analyze trends?	• Defines critical hazards, and therefore defines contents of early warning • Provides the information against which early warning trends can be analyzed • Provides analysis of livelihood systems, strategies and assets for both contingency planning and development planning	• Must incorporate previous lessons learned
2. Early Warning	**Continuous**	• Indicator trend analysis: is there a problem shaping up? • Where and how quickly is it developing? • What are the geographic dimensions of the problem? • In what areas should an in-depth assessment be concentrated?	• Provides the basis for geographic targeting and deployment of needs assessment • May provide direct information to program design and Context Monitoring	• Must be linked to baseline information (see Ethiopia case study)
3. Needs Assessment	**As needed**	• What is nature and dimensions of the problem? • How long is it going to last? • Who are the most vulnerable groups? • What and how much is needed; what is the best response? • To what extent is local coping capacity and provision of services overwhelmed? • What are major logistical and resource considerations?	• Information to intervention (program design) and targeting, therefore directly linked to both Program Monitoring and Impact Evaluation. • May also provide information that serves as a baseline for Context Monitoring	• Must be informed by good early warning, though is often informed by a variety of other sources of information (see Burundi case study)
<< Programmatic Intervention (based on information generated, but not part of Information System *per se*) >>				
Component	**Frequency of Analysis**	**Information Categories/ Questions Addressed**	**Forward Linkages**	**Backward linkages**

4. Program Monitoring	Continuous (While program is on-going)	• Are inputs accounted for (logistical accounting)? • Are outputs achieved (end-use monitoring)? • Pipeline analysis: is the pipeline "flow" adequate for meeting upcoming requirements?	• Program input and output information is a pre-requisite to evaluating the impact of interventions	• Must ensure that assessed needs are fulfilled by program outputs • Must cross-check on targeting criteria and efficiency, and thus feed back into reformulating needs assessments
5. Impact Evaluation	Regular Intervals (While program is ongoing)	• Is the intervention achieving the intended result? • What adjustments are necessary (response, quantity, targeting)?	• Information about the impact of specific interventions is a critical input to overall Program Evaluation • If programs do not achieve the desired impact, the implications of Context Monitoring for transitions are changed	• Impact cannot be evaluated in the absence of good information about program activities and outputs • Impact evaluation ultimately determines whether assessed needs have been met • Impact indicators can be systematized to become early warngin indicators in the absence of interventions (food security indicators, for example)
6. Context Monitoring	Continuous	• What are the possibilities for exit, recovery, or transition for longer-term responses? • What are institutional capacities and vulnerabilities? • What are the risks of transition? • Does situation require re-assessment?	• Informs the possibility of transition, and thus informs the rest of the HIS cycle • Systematic exploration of institutional structures provide context for understanding conflict risks	• Must be predicated on assessment of impact • Strong backward linkages to early warning—much of the same information requirements • Must inform the requirement for on-going needs assessment
7. Program Evaluation and Lessons Learned	Periodic	• How can overall program (information system, preparedness, response) be improved? • Are humanitarian principles being upheld by programs? • What lessons can be learned from experience and mistakes?	• Reformulation of the Information System itself	• Should examine each of the components of entire system for both accuracy of information and relevance of information

Source: Maxwell and Watkins in CARE 2003.

Annex 2: Sampling

Sampling Frame (Adapted from IFAD's Practical Guidance for Impact Survey's, 2005)

The sampling frame is used to select representative communities (clusters) within the project area. The sampling frame is the actual set of units from which a sample has been drawn, i.e., a list of all the communities in the project area. The clusters, selected randomly, represent the total population. No units from non-selected clusters are included in the sample; these are represented by the units in the selected clusters. In this example, the clusters are selected based on an approach involving probability proportionate to population.

During the second stage, households within the selected clusters are randomly picked to form a final sample. The procedures for selecting clusters and households are described in the steps below. It is important to be thorough during the sampling process, as the thoroughness of the process determines how well the sample represents the population as a whole.

Step 1: Organizing Population Data

The sampling frame in this example is constructed using population data from the project area. All rural communities in the project area are listed by region, sub-region, or municipality and in alphabetical order; population figures are then added. It is important to make sure that the population figures are up to date and that data are available for all communities.

Table 1 depicts how the data on population should be organized so that clusters can be selected on the basis of probability proportionate to size. In many project areas, the lists of villages will be considerably longer than the list in this example.

Note: Data for all the villages are not shown in the example.

Table 1: Population data

Region	Subregion	Village	Population	Cumulative Population	Cluster
DINGUIRAYE					
	BANORA				
	1	Banora	590		
	2	Boubere	1638		
	3	Boukara	481		
	4	Diarendji	1195		
	5	Kolla	894		
	6	Loppe Sountoun	1131		
	7	Matagania	2499		
	8	M'Bonet	1094		
	9	Nafadji	1526		
	10	N'Baloufara	460		
	11	Senema Tombo	456		
	DIALAKORO				
	12	Dares Salam	950		
	13	Dialakoro	3900		
	14	Fello Lamou	888		
	15	Mossoko	1077		
	16	Watagala	1194		

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Region	Subregion	Village	Population	Cumulative Population	Cluster
	LANSANAYA				
	67	Dayegbhe	1073		
	68	Hansanaya	671		
	69	Lansanaya	824		
	70	Santiguia	1201		
	71	Tambanoro	890		
	72	Wouyagbhe	1018		
	SELOUMA				
	73	Bossere	1372		
	74	Fadia	627		
	75	Kobala	1503		
	76	Selouma	2470		
	77	Walawala	2220		
		TOTAL	94731		

Step 2: Adding Cumulative Population

The population data are then cumulated. As demonstrated below, the population of Banora (590), plus Boubéré (1 638), is equal to a cumulative population of 2 228. When the population of Boukaria (481) is added, the cumulative becomes 2 709. This process is continued until the list is complete. The cumulative amount must equal the total.

Table 2: Cumulative Population

Region	Subregion	Village	Population	Cumulative Population	Cluster
DINGUIRAYE					
	BANORA				
	1	Banora	590	590	
	2	Boubere	1638	2228	
	3	Boukara	481	2709	
	4	Diarendji	1195	3904	
	5	Kolla	894	4798	
	6	Loppe Sountoun	1131	5929	
	7	Matagania	2499	8428	
	8	M'Bonet	1094	9522	
	9	Nafadji	1526	11048	
	10	N'Baloufara	460	11508	
	11	Senema Tombo	456	11964	
	DIALAKORO				
	12	Dares Salam	950	12914	
	13	Dialakoro	3900	16814	
	14	Fello Lamou	888	17702	
	15	Mossoko	1077	18779	
	16	Watagala	1194	19973	

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	LANSANAYA				
	67	Dayegbhe	1073	81935	
	68	Hansanaya	671	82606	
	69	Lansanaya	824	83430	
	70	Santiguia	1201	84631	
	71	Tambanoro	890	85521	
	72	Wouyagbhe	1018	86539	
	SELOUMA				
	73	Bossere	1372	87911	
	74	Fadia	627	88538	
	75	Kobala	1503	90041	
	76	Selouma	2470	92511	
	77	Walawala	2220	94731	
		TOTAL	94731		

The sampling frame is basically completed at this point. Now, it will be used to assign the distribution of clusters (villages).

Clusters

To assign the clusters, it is first necessary to determine a sampling interval (SI) and to select a random number.

Sampling interval

The SI will be used systematically to assign clusters from the sampling frame. The SI is equal to the total population of the project area (94 731 in this case), divided by the number of clusters (30).

Example

SI = Total Population/ No. of Clusters

SI = 94731/30   therefore **SI** = **3158**

Random number

The random number is used to determine the starting point for the first cluster. It should have a value between zero and the SI, which is 0 – 3158 in the example.

The random number can be generated through an appropriate computer program (such as SPSS or Epi Info™) downloaded from the web (www.random.org/nform.html) or simply taken from, for instance, a currency note.

Initial cluster

For example, in this particular case, the random number happened to be 1980. The first cluster corresponds to the village that has a cumulative population equal to or greater than the random number (1980), which is Boubéré in the hypothetical project area. The second cluster corresponds to the village that has a cumulative population equal to or greater than the random number, plus the SI (1980 + 3158 = 5138), which is Loppé Sountoun.

Example
Cluster # 1 corresponds to a cumulative population of 1 980 (Boubéré)
Cluster # 2 = 1 980 + 3 158 = 5 138 (Loppé Sountoun)
Cluster # 3 = 5 138 + 3 158 = 8 296 (Matagania)
Cluster # 4 = 8 296 + 3 158 = 11 454 (N'Baloufara)
Cluster # 5 = 11 454 + 3 158 = 14 612 (Dialakoro) and so on

The table below shows how clusters are selected for the sample population data. Note that 30 clusters will be identified because the SI was derived from the population data, divided by 30 (clusters). Larger towns may be assigned two or more cluster numbers.

Table 3: Clusters

Region	Sub region	Village	Population	Cumulative Population	Cluster
DINGUIRAYE					
	BANORA				
	1	Banora	590	590	
	2	Boubere	1638	2228	1
	3	Boukara	481	2709	
	4	Diarendji	1195	3904	
	5	Kolla	894	4798	
	6	Loppe Sountoun	1131	5929	2
	7	Matagania	2499	8428	3
	8	M'Bonet	1094	9522	
	9	Nafadji	1526	11048	
	10	N'Baloufara	460	11508	4
	11	Senema Tombo	456	11964	
	DIALAKORO				
	12	Dares Salam	950	12914	
	13	Dialakoro	3900	16814	5
	14	Fello Lamou	888	17702	
	15	Mossoko	1077	18779	6
	16	Watagala	1194	19973	

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Region	Sub region	Village	Population	Cumulative Population	Cluster
	LANSANAYA				
	67	Dayegbhe	1073	81935	26
	68	Hansanaya	671	82606	
	69	Lansanaya	824	83430	
	70	Santiguia	1201	84631	27
	71	Tambanoro	890	85521	
	72	Wouyagbhe	1018	86539	
	SELOUMA				
	73	Bossere	1372	87911	28
	74	Fadia	627	88538	
	75	Kobala	1503	90041	
	76	Selouma	2470	92511	29
	77	Walawala	2220	94731	30
		TOTAL	94731		

Households within the Cluster

The survey team will visit 30 communities (clusters) during the fieldwork. In each cluster, 30 households will be surveyed. There are two methods for the selection of the households: the household list method and the random walk method. During the planning stage, the method for the selection of the households should be discussed, and the decision about the method used should be noted in the final report.

Annex 3: Monitoring Indicators for Risk and Vulnerability

Indicator 1. Coping Strategies Index (CSI)
Definition: The Coping Strategies Index (CSI) is a relatively simple and efficient indicator of household food security that correlates well with other more complex measures (Maxwell et al. 1999; Maxwell et al. 2002). The CSI measures behavior: the things that people do when they cannot access enough food. There a several fairly regular behavioral responses to food insecurity – "coping strategies" for short – that people use to manage household food insecurity. These coping strategies are easy to observe, and much quicker, simpler, and cheaper to measure than actual household food consumption levels. Previous research demonstrates, however, that the CSI is a good proxy for income status and food budget shares, as well as caloric intake.

The CSI measures the *frequency* and *severity* of a household's coping strategies for dealing with shortfalls in food supply. Information on the frequency and severity is combined into a single CSI score. The CSI gives a quantitative score for each household that is a cumulative measure of the level of coping—and therefore the measure of food insecurity. In brief, the higher the numeric score of the CSI, the more coping a household has reported— and therefore the more *food insecure* it is. A lower score means less coping was reported, and therefore the more food secure it is.

Appropriateness: Comparing CSI scores and averages gives a good comparison of overall household food security and establishes the baseline for monitoring trends in emergencies, and for measuring the impact of interventions (food aid).

> *Coping Strategies Index*
>
> **Population Considerations –** In designing the CSI, it is important to consult with the range of social and livelihood groups included in the program area to ensure that the list of coping strategies is adapted to the local context, and that each strategy is weighted appropriately. While women are likely to be the most knowledgeable informants, men should be consulted as well.
>
> **Program Type –** The CSI was originally conceived as an impact indicator for emergency programs. However, the CSI can be used for all Title II program types. To track the impact of longer-term development interventions, it is important to consider certain caveats, discussed below, such as sensitivity of the index to short-term changes.

Designed as a measure of short-term consumption shortfalls, this indicator is more appropriate for transitory than chronic food insecurity, and is particularly suitable for use in emergency situations. Experience shows that if the tool is properly constructed, the CSI is a highly accurate rapid indicator of household food security—the list of reported behaviors is straightforward to understand, and simple and quick to use. The CSI captures notions of both adequacy and vulnerability, and correlates well with other more complex measures of food security.

Data Requirements: While the CSI requires an initial investment of time to adequately adapt the tool to the local context, it is relatively quick and easy to implement, analyze and interpret. The indicator is constructed through a four-step process. First, the assessment team needs to develop a context specific list of coping strategies. It is important to adapt the list to local circumstances and practices, a process that requires several focus group discussions. The behaviors that people rely on generally fall into one of four categories:

1. **Dietary change**: from a more expensive preferred food to a less preferred option;

2. **Increase non-sustainable strategies to increase food supply**: such as credit or, under more extreme circumstances, consuming seed stocks;

3. **Reduce the number of consumers**: send children elsewhere at mealtime or, under more extreme circumstances, the break up of households, and;

4. **Rationing**: reducing portions, skipping meals or feeding some, but not all members of the family or, under more extreme circumstances, skipping whole days without eating.

Second, the team needs to determine how often households employ these strategies as coping mechanisms by determining relative frequency categories. Five categories are recommended, ranging between "all the time" and "never". Intermediate categories can be adjusted depending on local conditions and the amount of required detail. Third, since the CSI tool uses a count of coping strategies that are not equal in severity, each strategy needs to be multiplied by a weight that reflects their level of acuteness. The assessment team should meet with a minimum of six to eight focus groups, representing sufficient diversity within the culture or geographic area to reach a consensus on the relative severity of each listed strategy. Finally, the severity weights are combined with the relative frequency scores and summed to derive an overall household score.

Results can be compared up to the level at which coping strategies are found to be commonly shared. Index values should not be combined or compared if the variable elements are different.

> The CSI was developed in Uganda and Ghana, and has been used for early warning and food security monitoring and assessment in several other African countries, including Kenya, Ethiopia, Burundi, and Eritrea. In Eritrea, CARE, the World Food Programme, and the Government collaborated to incorporate the CSI into a country-wide study of household food insecurity and vulnerability. The survey collected the information necessary to construct the CSI and gathered baseline index scores. Using this information, survey teams are monitoring the food security situation in the context of drought-related food shortfalls.

Timing: The periodicity of data collection depends on how the CSI will be used. If the goal is to measure intervention impact, then timing is determined by both the program cycle and seasons of food shortages. For emergency applications, measurement timing depends on the nature and magnitude of a situation or emergency. In slow onset emergencies, for example, the CSI may be implemented every six months to monitor changes in household food security. In severe, rapid onset emergencies, it may be necessary to collect CSI data more frequently. As a long-term food security indicator, the baseline and impact evaluation data collection should be conducted at the same time of year/ harvest cycle to factor out short-term influences such as seasonality (see Caveats, below). It is also important to use specific reference periods such as "the last 30 days", rather than the "past month" or "last month" as the latter terminology often confuses respondents.

Caveats: The CSI is highly sensitive to short-term influences such as seasonality, or the effects of minor or major shocks. Scores may regularly change throughout the year. When using the CSI to track the impact of longer-term development interventions, it is important to make sure that short-term influences such as seasonality are factored out of the analysis.

Since this indicator is based on contextual data, in areas of chronic vulnerability, making comparisons between different localities may be problematic.

Households use both short-term consumption coping strategies and longer-term strategies to ensure that they have enough to eat. While a complete analysis of household food security would require a detailed analysis of livelihoods and assets, the CSI provides an adequate, rapid indicator. For the purposes of implementing the CSI, it is important to include only consumption coping strategies, rather than livelihood coping strategies. Consumption strategies are readily available, reversible, and do not depend on the asset holdings of the household. For example, if asset sales are included in the CSI interview, the response "never" could be attributed to a lack of need to sell to meet household food requirements, or a lack of assets to sell.

Vulnerability: A major aspect of vulnerability is the ability of households to cope with stress and shock. Households employ coping strategies to ensure future income generating capacity, rather than only to maintain existing consumption levels (Corbett 1988; de Waal 1989; Haddad et al. 1991; Maxwell and Frankenberger 1992). A study on alternative indicators of chronic and acute food insecurity in India found that households employ a range of coping strategies long before dropping into acute food insecurity (Chung et al. 1997). Research in several African countries has demonstrated that the CSI is a good indicator of future vulnerability (Maxwell et al. 2002). Households using a larger array of coping strategies and/or strategies considered to be more severe in their impacts are usually more vulnerable (Hoddinott 1999). This being the case, the CSI can be valuable in targeting the most

Indicator Score Sheet	
	Coping Strategies Index
Cross Comparison Difficulty	Medium
Imp. Time Demands	Low
Technical Capacity	Medium
Contextualization	High

Complementarity: Depending upon the program setting and the application of the CSI, the tool can be used with a variety of food security indicators. Combining the CSI with *dietary diversity* provides an adequate measure of overall household food access. Using the CSI in conjunction with the *assets index* or *debt-to-asset ratio* can provide greater insight into longer-term household vulnerability.

vulnerable households for food security programming. In fact, a primary application of the CSI is as a food security assessment tool, which can be used to help in targeting interventions to the most vulnerable households.

Indicator 2. Household Asset Index

Definition: From a food security perspective, asset ownership is important because assets buffer or ensure household consumption when incomes are insufficient. Assets are generally viewed as a proxy of wealth. As household incomes increase, additional income may be used to acquire assets. In times of hardship these assets are sold to fill in income gaps. By tracking sales and acquisitions of assets this indicator serves as a proxy for income levels.

This indicator is a measure of the value of selected assets. The presence of assets in a household is noted and the value of all the assets in a household are summed. Based on the overall value of assets, households receive a score relative to other households in the community or region.

> ### *Household Asset Index*
>
> **Population Considerations –** This will not be a robust indicator in refugee populations where people have divested of assets before leaving their homes.
>
> **Program Type –** In development programs, ownership of household assets is tracked to demonstrate wealth generation. In relief operations, asset protection objectives also may make this indicator useful

Appropriateness: This indicator has a wide application and is appropriate to use in most evaluations. As a baseline indicator the asset index can be used to discriminate wealth categories. Wealth categories in turn can be used to evaluate the effectiveness of program targeting, whether the intended beneficiaries are actually receiving the benefits. In addition to providing baseline information this indicator is useful for tracking changes through time. In this sense, it is not only the value of the asset sold or purchased, but also its productive capacity (TANGO International 2003c).

Ownership of assets is often positively correlated with household income and assets acquired in non-crisis years represent stores of value that can be used for future liquidation and food purchase. Livestock is often among the assets most sensitive to change in reaction to food surplus or shortage. The indicator is thus an inexpensive proxy for household income, for which data are difficult to collect. Collection of this information is relatively low-cost and does not require a high level of skill. It is important, however, to consider context (see Caveats, below).

Caveats: During asset selection it is important to differentiate between assets that that are accrued during times of plenty and sold to cope with times of shortage, those that are regularly liquidated, such as small livestock, and key productive assets (Corbett 1988). Reduction of productive assets increases future food insecurity (Jodha 1978). Appropriate assets to track might include productive assets (e.g., oxen, farm or handicraft implements), assets of domestic utility (e.g., kitchen utensils), or luxury items such as jewelry or radios.

This indicator is specific to local conditions. The assets of choice in one community may not be appropriate in another. In research of the weighted asset score in Mali and Malawi, Morris et al. (1999) found a lower correlation between the asset score and the total value of household assets when livestock were included along with household items. In these rural contexts, few households manage livestock in addition to growing crops. Thus, the list of assets must be context specific.

In developing the list of assets, Morris et al. (1999) deliberately omitted housing quality and land

value. While these indicators represent measures of wealth, in many rural contexts markets for housing and land
sales may not exist, making valuation difficult or impossible. While this information may be important to collect and analyze separately, it may not be appropriate to include in the asset index.

The prices of assets will fluctuate with supply and in times of regional hardship asset prices will drop. While prices will likely be the same within a region, assure that the prices assigned to all assets within the set are calculated at the same time. Take care to value used assets differently from new assets.

> SCF/Ethiopia, FHI/Ethiopia, REST/Ethiopia, and CARE in Bangladesh, Honduras and Madagascar are all developing income proxies based on household assets.
> CARE/Bangladesh uses asset values to establish wealth-ranking criteria for targeting and monitoring changes in wealth over time.

Data Requirements: The first step is to define a set of representative assets. This occurs during the initial phase of understanding the local context through focus group work or free-listing techniques. The types of assets may include both productive and non-productive assets. The best assets to track are those that are among the first to be purchased as households are accumulating money and the first to be sold when hardship strikes.

After selecting the asset set, assign economic value to each asset based on local market prices. Sum the value of all the selected assets within a household. In order to compare this indicator across regions and programs it is necessary to assign each household to a wealth category based on the total asset value and relative to other households in the study.

To track changes through time collect data on the type of asset sold or purchased. To understand the magnitude of the food insecurity, include not only the economic value but the productive value of the asset as well. Households that liquidate productive assets are in more severe situations of food insecurity than those that liquidate assets with less impact on future vulnerability.

Because there is a large variation in the type of appropriate assets to track this indicator requires a medium to high level of contextualization. The technical capacity required is limited. The keys to effective use of this indicator are selecting the proper assets and assigning accurate value to each. For cross comparison purposes this

Indicator Score Sheet	
Household Asset Index	
Cross Comparison Difficulty	Low
Imp. Time Demands	Low
Technical Capacity	Low
Contextualization	High

Complementarity: This indicator complements the *debt-to-asset ratio* and allows for a more precise interpretation of the rations. It also complements the *provisioning indicators* by providing information on what households are doing to maintain consumption levels. Also use in conjunction with *consumption indicators* to see whether increased income is translated into increased food access.

indicator works well once households are assigned to categories.

See Morris et al. (1999) for a household asset score as a proxy for wealth, based on a weighted sum of the *numbers* of different items owned by a household.

Timing: This indicator can be used to compare pre and post-intervention asset bases. Rebuilding of the asset base will only be sustainable once a household is assured
that a given source of income is stable and non-transitory and the timing of post-intervention measurement should reflect this. Used on a seasonal basis, this indicator will give insight into the seasonal changes in food insecurity within the population.

Vulnerability: This indicator tracked through time gives insight into the level of vulnerability to food insecurity of a household. Many assets are forms of insurance/savings and asset sales are associated with periods of acute shortage or need (Corbett 1988). Sales of assets can be classified on a severity scale – sale of productive assets is a more severe response signifying higher short and long-term vulnerability.

Indicator 1. Dietary Diversity

Definition: Dietary diversity is the sum of the number of different foods or food groups consumed by an individual or household over a specific time period. The indicator is a proxy for quality of diet and is highly correlated with adequate caloric and protein intake, quality of protein consumption, and household income (Hoddinott and Yohannes 2002a; Ruel 2002). Using dietary diversity as a proxy for income assumes an availability of a wide range of foods within the program area at economically attractive prices.

Appropriateness: The indicator can help distinguish energy availability and nutritional adequacy and thus is a useful indicator of food security. The indicator is useful in a variety of contexts, including urban and rural areas, poor- and middle-income countries, and across all seasons (Hoddinott and Yohannes 2002a; Ruel 2002). Dietary diversity is recommended as an accurate alternative to more costly and technically demanding indicators such as increased percentage of household consuming daily caloric intake. There is strong empirical evidence to support the use of this indicator as a proxy for income as well as food access.

Data Requirements: Dietary diversity is an attractive indicator in part because it does not require special skills or high expense to collect. The first step in measuring dietary diversity is to collect information on local consumption patterns to identify a diet that, according to the community, signifies food security.   This is accomplished either through secondary data reviews or exploratory research with focus groups and/or at local markets. One result of this first phase will be a list of all locally consumed foods.

> ### *Dietary Diversity*
>
> **Population Considerations –** Dietary practices can vary within a household and vulnerable groups can be excluded from project benefits. The dietary diversity of women as compared to men is more indicative of overall household food security (Bonnard 2001). Women are the most appropriate respondents for information on diet and consumption.
>
> **Program Type –** Suitable for development/rehabilitation programs that seek to increase household income.

When this indicator is used as a direct measure of food security, food groups should be based on economic value (see Hoddinott 2002 for discussion of food groups, *forthcoming*) which can serve as a proxy for wealthy and poor households. As a measure of consumption, foods are grouped not by economic value but by nutritional composition. It is important to note that unreported consumption of wild/gathered foods can sometimes confound results. In addition, foods obtained outside of the home are generally not included so as to more accurately capture the diversity across household members (i.e., it may be only one member who purchases food from a street vendor). However, if whole households frequently obtain food outside of the home, these foods should be included (Ruel 2002).

Portion size is also critical to arriving at an accurate estimate of true dietary diversity. Minimum portion sizes to be included in the count must be determined to avoid overstating the level of diversity. Basic household information, including household size and composition, age, education, and location should also be collected to assist with interpretation of the data. For example, tastes may vary with age and education.

The optimal recall period is based on context specific factors. It depends in part on the magnitude of daily variation and levels of recall errors, and it also relates to the level of analysis, whether it will be done at the household or population level. However, it is recommended that PVOs use a recall period of either 24 hours, or three to seven days (Hoddinott and Yohannes 2002a), although research suggests that the 24 hour recall period may underestimate the variability of intake (Drewnoski et al. 1997 in Ruel 2002).

There are two principal methods for measuring dietary diversity: Dietary diversity scores (DDS) and food variety scores (FVS). There are tradeoffs in precision between these two methods. DDS are faster and easier to collect but, because foods are aggregated by type, the measure is not as sensitive to change as FVS, which counts individual food types separately (see Ruel 2002). Field experience show that questions about the number of food or food groups consumed over a given reference period typically takes under 10 minutes per respondent, and such questions are relatively straightforward and non-intrusive (Hoddinnott and Yohannes 2002a). Information should be collected from a statistically valid sample of representative households from the population of interest. The best sources of this information are women, whether wives or heads of households.

Dietary scores can be calculated in two ways. The first is by summing the number of types of foods consumed. The second is a weighted sum that accounts for the number of times a given food is consumed (Hoddinott 1999). Cutoff values for rating high and low diversity may need to be determined locally. FANTA (Hoddinott and Yohannes 2002b) has suggested developing targets based on an average dietary diversity value from the top 25 percent of households in the area. In this way, the targeted level of dietary diversity is achievable in the local population.

The level of aggregation should reflect the use of the data. For example, collecting information by food group may provide better information on dietary quality. However, changes in income may result in substitutions within food groups (such as maize rather than millet) that would not be captured in a food group measure. Because dietary diversity differs by context it is difficult to make comparisons across households in different localities.

Refer to Swindale and Ohri-Vachaspati (1999) and Hoddinott (2002) for guidance on measuring dietary diversity, including data collection methods, sample questionnaires, and calculating dietary diversity.

> Dietary diversity is increasingly being used as an indicator of food consumption and food access. It is currently used by ADRA/Ghana, ACDI/VOCA/ Uganda and Rwanda, Africare/Uganda, CRS/Rwanda, and TNS/Uganda. FHI/Bolivia and ADRA/Ghana have also tried to look at changes in consumption of foods rich in Vitamin A.

Timing: The timing of data collection should be based on knowledge of local food supplies and seasons of shortage. The indicator will correlate strongly with seasonal food availability. The availability of certain foods such as fruits can fluctuate significantly throughout the year. The study team should especially avoid data collection during exceptional times such as holiday seasons when food consumption may be exaggerated or strictly limited.

Caveats: One difficulty associated with this indicator, as noted above in the discussion of data requirements, is the inability to set targets for changes in diet because dietary diversity varies in different contexts. Another issue involves determining minimum intake values before counting the item as a food. For example, some spices with relatively limited nutrient content are often added to traditional dishes. This indicator should be adapted to capture changes in food access with respect to the program objectives and interventions. Including soft drinks on the list will not indicate improved nutritional status, but it may be associated with increased income (Swindale and Ohri-Vachaspati 1999).

Vulnerability: Low levels of dietary diversity may or may not indicate vulnerability, depending on the type of vulnerability being researched. In certain cases, economically secure households have a less diverse diet in which a preferred staple food is consumed on a daily basis. Furthermore, dietary diversity is culturally specific. A number of studies across countries, however, suggest an association between dietary diversity and socioeconomic status (see Ruel 2002 for a summary of these studies), which may contribute to an understanding of a household's vulnerability to shocks and food insecurity. Generally, dietary diversity is a good indicator of vulnerability because of populations' tendency to decrease the number of items consumed as they become more food insecure.

Indicator Score Sheet

	Dietary Diversity
Cross Comparison Difficulty	Medium
Imp. Time Demands	Low
Technical Capacity	Low
Contextualization	High

Complementarity: Dietary diversity is a good indicator of consumption levels and caloric availability and is closely correlated with food access. Since levels of dietary diversity are driven in part by the availability of different foods, it is important to combine this measure of access with another proxy indicator of income/ food access such as the *asset index* or *crop and livestock income*.

Indicator 2. Number of Daily Eating Occasions

Definition: In addition to its frequent use as a food security indicator, this indicator serves as a proxy for gauging household caloric and protein intake. An important assumption, and one that should be tested during pre-program assessments, is that reduction in the number of meals consumed per day is among the earliest and most important coping strategies employed in targeted communities.

Appropriateness: This indicator is most useful for capturing information on coping strategies employed during transitory food insecurity situations. This indicator is not sensitive in regions where only one meal is customarily taken daily (Swindale and Ohri-Vachaspati 1999). Precision of responses is generally high as response options are few and the recall period is generally short.

Data Requirements: The data are inexpensive to collect and collection requires no special skills. Data collection does not require determining meal size or composition, which are more complicated to assess. An exploratory survey or review of secondary data is required to identify customary eating behaviors as well as expected variations in the area to be surveyed (Swindale and Ohri-Vachaspati 1999). In addition, it is important to define precisely how "a meal" will be defined. Respondents are simply asked to state the number of meals consumed for the day of the survey or during recent days. Analysis would calculate average number of meals for a group in question. Interpretation of results would have to take into consideration traditional local norms for food consumption (i.e., not assume that three meals per day is optimal and that anything less reflects food insecurity and include age and gender considerations).

> *Number of Daily Eating Occasions*
>
> **Population Considerations –** Women are usually best suited to provide accurate responses to questions concerning diet and consumption. In households where women work outside of the home, it will be important to interview other primary caretakers. It is also important to carefully consider cultural factors and differences between population groups, such as herders, that rely on frequent snacking or wild foods to supplement their diets.
>
> **Program Type –** This indicator is suitable for development/rehabilitation programs that seek to increase

Timing: Information collected for this indicator will change during the year based on events in the seasonal calendar. Timing the survey during times of hunger (e.g., the period before harvest) will capture a greater magnitude of difference between households, keeping in mind the caveats discussed below. It is critical to measure this indicator during the same month throughout the life of the program.

> The number of eating occasions per day is a useful indicator of food access, as long as differences in context are taken into account. Definitions of the term "eating occasion" or "meal" make it difficult to compare across locations. In some parts of Zambia, for example, people define an eating occasion through the consumption of rice. ADRA/Ghana uses "meals per day during the lean season" as a measure of second level food security impact.

Caveats: There are two primary issues to consider when using the number of daily eating occasions. The first is that of cultural influences, which may determine optimal number of meals per day. In settings where it is common to consume fewer than three meals per day, this may not be the most appropriate measure. Assessing changes between one and three or four meals per day is more informative than differences between one and two meals per day. In these contexts, it is more likely that households adjust the quantity of food consumed rather than the frequency.

Secondly, the definition of "eating occasion" varies across cultural contexts. While the term "eating occasion" is recommended over the use of "meal", it is still important to consider cultural factors that define an "eating occasion" and account for this when implementing the data collection and interpreting the results. In some cases, for example, an "eating occasion" is defined by the volume or the particular food or foods consumed. Some cultural or livelihood groups, such as pastoralist herders, may significantly supplement their diets with wild foods or frequent snacks. Prior to the harvest, subsistence farm families may rely on green maize or beans in the place of formal meals. In contexts where frequent snacking takes the place of formal meals, the number of daily eating occasions may be difficult.

Vulnerability: The number of daily eating occasions is a strong indicator of household strategies to cope with short term food insecurity. However, it is less sensitive to changes in situations of chronic food insecurity. Because of two factors mentioned above (local traditions for appropriate number of meals per day and the potential for frequent between-meal snacking) this indicator may not be especially pertinent to assessing levels of vulnerability in a community.

Indicator Score Sheet	
	Number of Daily Eating Occasions
Cross Comparison Difficulty	Medium
Imp. Time Demands	Low
Technical Capacity	Low
Contextualization	High

Complementarity: Because the definition of "eating occasion" varies across locations, and the indicator is not sensitive to changes in quantity as well as frequency, it is recommended that the number of daily eating occasions indicator is used in conjunction with *dietary diversity* (Swindale and Ohri-Vachaspati 1999).

Indicator 3. Months of Adequate Food Provisions

Definition: This is a measure that estimates the number of months per year that households are able to adequately meet their food needs, either through production or purchase, and identifies the months that household experience shortages. The indicator captures the effects and relationships between a variety of factors including production and income generating strategies, storage techniques and purchasing power. As such, "months of adequate food provisions" provides an accurate and comprehensive reflection of household food security (Bonnard et al. 2002). In addition to providing the number of months of food insecurity, the information can be used to better target programming to specifically address food shortfall in the most critical months.

Appropriateness: Because this indicator measures both stocks as well as purchases it is appropriate to use in most situations (Chattopadhay 1991). Stocks include both crops and livestock.

This indicator captures information on production, storage and purchasing power. The information required is easy to collect and does not require special skills. However, the frequency of data collection will significantly impact the accuracy of the data.

> ### *Months of Adequate Food Provisions*
>
> **Population Considerations –** Situations in urban areas will be difficult to assess particularly when employment is unstable. Self-provisioning for populations heavily dependent on markets will reflect market price fluctuations. HIV/AIDS affected households shift from stable provisioning to more unstable rapid turn-around provisioning.
>
> **Program Type –** This indicator is suitable across the range of program types. It is especially useful in programs that seek to identify the timing and severity of seasonal food gaps. This indicator is helpful to use at the beginning of a program to help target the neediest populations.

Caveats: While in comparison with other indicators "months of adequate food provisions" is a relatively simple indicator, there are still issues that complicate data interpretation. First, it is essential to define from the household's perspective what is meant by adequate. The purpose is to identify food insecurity and not whether a household has food stocks the entire year. If households are not consuming a sufficient amount of quality food, they do not have adequate food provisions. Adequate provisions also means that households are self-sufficient in food access without resorting to coping strategies. Households that maintain their provisions through selling assets, eating wild foods or other strategies that indicate food insecurity do not have adequate food provisions. Households that have limited access to food may define their minimum needs differently than households with greater access. This lowering of minimum requirements needs to be addressed in the data collection to avoid mis-classifying some of the more food insecure households.

It is also essential to understand why the food gaps or lack of adequate provisioning occur. This means that data collection needs to be applied in such a way as to understand whether provisioning shortages happen on a regular or seasonal basis or whether a shortage was in response to a particular event such as drought.

> This indicator is being used by Africare in all eight of its DAPs, tracking the months of household provisioning in an effort to capture the combined effects of several agricultural interventions and strategies.

Data Requirements: Data requirements for this indicator are simple. Ask people how many months out of the year they are able to adequately supply their household consumption needs either through production or purchasing. This can be done by asking the household in which months they can eat until they have satisfied their hunger. In Chad, an Africare program established that households responded this way when they were able to eat three meals a day. They restricted consumption when they could eat twice and severely restricted consumption when they could only eat once a day. Because food insecurity may be seasonal developing and understanding of the various activities that impact food access is critical. In agricultural environments it will be useful to have an understanding of when agricultural activities take place. Understanding the seasonality of employment in the region will also help to collect more accurate data. This can be done either through a quantitative survey or through PRA exercises. Time demands for this indicator are low and it is comparable across regions and programs.

Timing: As with any type of data collection the sooner data are collected after the event of interest, the higher the data accuracy. Less frequent data collection is acceptable, in part because respondents are asked to recall events rather than more specific details such as production values, and error will be low. However, data should be collected at the same time(s) of year to reduce confounding factors.

Vulnerability: Used in conjunction with indicators that look at coping strategies, "months of adequate food provisions" gives a very clear picture of the vulnerability of a household to food insecurity. In conjunction with production and income indictors

Indicator Score Sheet

	Months of Adequate Food Provisions
Cross Comparison Difficulty	Low
Imp. Time Demands	Low
Technical Capacity	Low
Contextualization	High

Complementarity: Although this indicator provides timing and severity of food insecurity, it does not identify the causal factors. Use this indicator in conjunction with income diversity and production indicators to develop an overall understanding of why households are experiencing food shortages and what are the best approaches for reducing food insecurity. Also use in combination with dietary diversity and the number of meals per day.

it gives a clear picture of why particular households are vulnerable, and it gives a measure of the severity of vulnerability. Households that are unable to meet their consumption needs are vulnerable, and the frequency of the shortages gives a measure to the severity of the problem. The number of months that households are unable to eat enough to satisfy their hunger can be used as an indicator of the vulnerability of a household. Fore example, food secure households satisfy their hunger 12 months of the year, a food insecure household between 9 and 12, and a severely food insecure household less than 9.

Annex 5: Potential Indicators for Use in Health and HIV/AIDS

Input   Number, or proportion, or program sites with functional weighing scales
              Metric tons of food distributed
              Number, or proportion, of program sites with at least one service provider
              trained in nutritional care and support of PLHA

Process   Proportion of beneficiaries aware of beneficiary criteria and who understand
              the purpose of the program
              Proportion of nutrition counseling sessions that met a fixed criterion for
              quality (e.g. a counseling quality checklist)

Output   Number of OVC receiving food
              Number of chronically ill individuals receiving food
              Actual beneficiaries receiving food assistance as a percentage of planned
              beneficiaries disaggregated by sex and age group
              Number of home-based care groups formed
              Number of household affected by chronic illness that are provided inputs
              and training in labor-saving agricultural production techniques (or
              household gardens)
              Number, or proportion, of PLHA who received nutrition counseling in the
              past three months

Outcome   Proportion of PLHA beneficiaries consuming food at least five times per
              day on the previous day
              Proportion of PLHA beneficiaries who know appropriate dietary responses
              to symptoms and medication side effects
              Proportion increase in enrollment in PMTCT (or ART) services
              Proportion of households affected by chronic illness that are using labor-
              saving agricultural production techniques (or household gardens)
              Proportion increase in school attendance (by OVCs)

Impact   Proportion of adult PLHA beneficiaries with BMI < 18.5
              Average percentage weight change among adult beneficiaries over the past
              three months
              Prevalence of malnutrition (weight/age) among children under 5 years of
              age born to HIV-infected mothers in the PMTCT program
              Percentage of beneficiaries alive and still on ART 12 months after initiating
              treatment
              Percentage of beneficiaries performing moderate to intense physical activity
              (activities to be defined locally) for a fixed period of time (e.g. 45 minutes)
              on the previous day
              Percentage change in Quality of Life scores

Sources: FANTA 2006b, C-SAFE 2005, WFP 2005

Annex 6: Potential Indicators for Use in Micro & Small Enterprise Development

Context	• Portfolio at risk on the total loan portfolio of Non Bank Financial Institutions in the area
	• Repayment rate on the total loan portfolio of Non Bank Financial Institutions in the area
	• Value of savings in Non Bank Financial Institutions in the area
Output	• Number of people trained in productive skills
	• Number of technologies introduced/ disseminated
	• Number of enterprises established/strengthened
	• Number of new supervisory tools/ techniques introduced
	• Cumulative number of loans distributed
	• Aggregate value of loan disbursed
Outcome	• Change in productivity of selected commodities/ products
	• Change in sales of selected commodities/ products.
	• Change in area under sustainable management
	• % of clients adopting improved technology
	• Number of technologies adopted
	• Number of enterprises benefited from business development strategies
	• Sustainable producer associations/ members
	• Number of policies approved or revised to support small and micro enterprises finance
Impact	• Change in income from selected commodities and products
	• Wealth/investment index

Source: PRISMS 2006, IFAD (2004).

Annex 7: Potential Indicators for Use in Maternal & Child Health Projects

Prevention of Mother-to-Child Prevention of HIV

- Existence of guidelines for the prevention of HIV infection in infants and young children
- Number and percentage of health care workers newly trained or retrained in the minimum package during the preceding 12 months
- Prevention and care service points
- Women completing the testing and counseling process
- Percentage of HIV-positive pregnant women receiving a complete course of antiretroviral (ARV) prophylaxis to reduce the risk of MTCT in accordance with a nationally approved treatment protocol (or WHO/UNAIDS standards) in the preceding 12 months
- Percentage of HIV-infected infants born to HIV-infected mothers

Newborn Health

- Number of health facilities providing basic and comprehensive emergency obstetric care functions per 500,000 population
- Proportion of hospitals and maternity facilities designated as baby friendly
- Proportion of health workers competent in neonatal resuscitation upon completion of training
- Proportion of pregnant women attending antenatal clinics who are screened for syphilis
- Proportion of babies who receive eye prophylaxis care within one hour of birth
- Percentage of HIV-positive pregnant women receiving a complete course of antiretroviral (ARV) prophylaxis to reduce the risk of MTCT according to nationally approved (or WHO/UNAIDS) guidelines in the past 12 months
- Proportion of pregnant women who received at least two antenatal care visits
- Proportion of pregnant women receiving at least two doses of tetanus-toxoid vaccine
- Proportion of pregnant women receiving intermittent preventive treatment or malaria prophylaxis, according to national policy
- Proportion of pregnant women who know two or more newborn danger signs
- Proportion of deliveries occurring in a health facility
- Proportion of deliveries with a skilled attendant at birth
- Maternal mortality ratio
- Proportion of newborns who receive thermal protection immediately after birth
- Timely initiation of breastfeeding

- Exclusive breastfeeding rate
- Proportion of women who receive two high-dose supplements of vitamin A within six weeks of giving birth
- Preterm birth rate
- Proportion of live births with low birth weight
- Late fetal death rate (
- Perinatal mortality rate
- Cause-specific perinatal mortality rate
- Number of neonatal tetanus cases
- Birth weight specific mortality rate
- Neonatal mortality rate

Immunization

- Proportion of infants born protected against neonatal tetanus
- BCG coverage
- DTP1 coverage
- DTP3 coverage
- OPV3 coverage
- Measles coverage
- HEPB3 coverage
- Hib3 coverage
- Dropout from DTP1 to DTP3
- Fully immunized child (FIC)
- Vaccine wastage rate

Integrated Disease Surveillance and Response

- Proportion of health facilities submitting weekly/monthly surveillance reports on time to the district level
- Proportion of districts submitting weekly/monthly surveillance reports on time to the next level
- Proportion of cases of diseases selected for case-based surveillance which were reported to the district using case-based or line listing forms
- Proportion of suspected outbreaks of epidemic-prone diseases notified to the next level within two days of surpassing the epidemic threshold
- Proportion of districts with current trend analysis (line graphs) for selected priority diseases
- Proportion of reports of investigated outbreaks that include case-based data recorded and analyzed
- Proportion of outbreaks of epidemic-prone diseases with laboratory results

- Proportion of confirmed outbreaks with recommended response
- Attack rate
- Case fatality rate for outbreaks of epidemic-prone diseases

Integrated Management of Childhood Illness: Health Facility

- Child checked for three danger signs
- Child checked for the presence of cough, diarrhea, and fever
- Child's weight checked against a growth chart
- Child's vaccination status checked
- Index of integrated assessment of sick child
- Child under two years of age assessed for feeding practices
- Child needing an oral antibiotic and/or antimalarial is prescribed the drug(s) correctly
- Sick child not needing antibiotic leaves the facility without antibiotic
- Caretaker of sick child is advised to give extra fluids and continue feeding
- Child needing vaccinations leaves facility with all needed vaccinations
- Caretaker of child who is prescribed ORS and/or oral antibiotic and/or antimalarial knows how to give the treatment
- Sick child needing referral is referred

Diarrhea, ARI, and fever

- Proportion of households with access to an improved source for drinking water
- Proportion of households using an improved toilet facility
- Proportion of households with access to essential handwashing supplies
- Proportion of households storing drinking water safely
- Proportion of households treating drinking water effectively
- Proportion of households where drinking water has sufficient levels of residual chlorine
- Proportion of households where the caretaker of the youngest child under five reported appropriate handwashing behavior
- Proportion of households that disposed of the youngest child's feces safely the last time s/he passed stool
- Period prevalence of diarrhea
- Child with non-bloody diarrhea treated with antibiotics

- Oral rehydration therapy (ORT) use rate
- Proportion of children aged 2-59 months with diarrhea in the last two weeks who were treated with zinc supplements
- Period prevalence of acute respiratory infection needing assessment
- Care seeking for ARI in children 0-59 months of age
- Period prevalence of history of fever
- Child sleeps under an insecticide-treated net
- Child with fever receives appropriate antimalarial treatment
- Caretaker knows at least two signs for seeking care immediately
- Number of malaria cases among under-fives
- Malaria death rate among under-fives

Growth Monitoring and Nutrition

- Sick child checked for three danger signs
- Sick child's weight checked against a growth chart
- Sick child under two years of age assessed for feeding practices
- Caretaker of sick child is advised to give extra fluids and continue feeding
- Proportion of hospitals and maternity facilities designated as baby friendly
- Exclusive breastfeeding rate
- Timely initiation of breastfeeding
- Complementary feeding rate
- Mean dietary diversity of foods consumed by children aged 6-23 months
- Proportion of children aged 6-23 months with good young child feeding practices
- Proportion of households with access to essential handwashing supplies
- Proportion of households where the caretaker of the youngest child under five reported appropriate handwashing behavior
- Sick child aged 6-23 months is offered increased fluids and continued feeding
- Proportion of children living in households using adequately iodized salt
- Proportion of children aged 12-59 months who were dewormed in the past six months
- Prevalence of night blindness in children
- Vitamin A supplementation
- Vitamin A deficiency (serum retinol concentration)
- Proportion of children aged 6-59 months with anemia
- Low weight-for-height/length (wasting)
- Low height/length-for-age (stunting)
- Low weight-for-age (under weight)

- Under-five mortality rate

Mortality

- Late fetal death rate
- Perinatal mortality rate
- Cause-specific perinatal mortality rate
- Birth weight specific mortality rate
- Neonatal mortality rate
- Infant mortality rate
- Child mortality rate
- Under-five mortality rate
- Under-five mortality rate
- Cause-specific mortality rate

Gage, et al., 2005

Annex 8: Potential Indicators for Use in Reproductive Health Projects

Input indicators
- Percentage of health personnel trained in midwifery
- Percentage of public sector expenditures on contraceptive commodities
- Percentage of service delivery points offering at least two methods of family planning.
- Percentage of service delivery points (SDPs) which routinely screen and provide referral for infertility
- Percentage of trainees provided with knowledge and skills on RH in a given year
- Percentage of service delivery points stocked with family planning commodities according to needs.
- Number of referral facilities providing essential and emergency obstetric care per 100,000 married women in the reproductive age group
- Number of service delivery points offering family planning services per 10,000 women in the reproductive age group.
- Existence of the national population and reproductive health policy

Process indicators
- Proportion of service providers trained in family planning and reproductive health
- Percentage of births attended by trained health personnel
- Percentage of clients given counseling on family planning at SDPs during a year
- Percentage of pregnant women who had at least two prenatal visits attended by trained health personnel during the last completed pregnancy
- Percentage of contraceptive supplies that are wasted
- Percentage of communication material disseminated to target audiences
- Percentage of training programs on RH that achieves the learning objectives
- Percentage of follow-up visits by contraceptive users to the total number of continued users of a particular method
- Proportionate share of contraceptives distributed to users by NGOs

Output indicators
- Contraceptive prevalence rate
- Number of new acceptors of modern methods of family planning
- Percentage of women in reproductive ages with knowledge of the modern methods of contraception
- Proportion of high-risk births to women
- Percentage of women aged 35 years and above with knowledge of the need for annual screening for breast and cervical cancer

- Proportion of children aged 9-12 months who are fully immunized
- Prevalence of breast cancer among women aged 35 years and over
- Unmet need for family planning
- Mean desired family size

Impact indicators
- Total fertility rate (TFR)
- Maternal mortality ratio
- Neonatal mortality rate
- Adolescent fertility rate
- Infant mortality rate
- Prenatal mortality rate
- Annual population growth rate
- Life expectancy at birth
- Prevalence of RTIs/STDs by type in a defined target population
- Prevalence of HIV infection in a defined target population

United Nations, 2003

Annex 9: Example of Topical Outline for Use in Qualitative Assessments

I. Contextual Information

Access to Infrastructure (Transects, community maps and group interviews)
- Condition of existing infrastructure? (roads, schools, drinking water, transport, irrigation, communication, sanitation)
- Who benefits from this infrastructure?
- Do people pay fees or taxes to use this infrastructure?
- Distance to the administrative capital and time required to travel.

Historical Information (focus group)
- What shocks (environmental, economic, social, political) have affected the community during last ten years?
- Have there been any changes in women's status or decision-making power over the last 10 years? What are these changes?

Social Information (Venn Diagrams, Wealth Ranking and focus groups)
- What is the level of participation of women and of poorer households in social gatherings, community meetings and in development activities?
- Describe cultural/social trends (marriage, land renting, etc.).
- Do women have ownership or usufruct (right of using and enjoying all the advantages and profits of the property of another without altering or damaging the substance) rights?
- What are the inheritance practices relating to men and women? Do boys and girls get equal treatment under the same cultural environment.
- Who are the most vulnerable groups in the community? Who are the most vulnerable individuals?
- Do women have control over the income they earn?
- Inequalities in work load, wage rate, access to economic resources, between women and men.
- Are there socio-cultural practices that work against women, children, minorities and the underprivileged?
- What are the different types of the organizations that work in the community? What are their activities? Who benefits? Describe any impact from these activities.
- What are the community-based groups currently operating? What are their activities? Who benefits? Describe any impact from these activities.

Economic Information (focus group)
- What are the major occupations or livelihoods in the area currently? What were the major occupations/livelihoods 10 years ago?
- Describe differences in wages and labour by gender.

- With the same amount of money are people able to buy more goods and services now compared to last year?
- What are the types of livestock owned by different groups within the community?
- Has there been a significant loss of livestock over the last 10 years? What was the cause? Have the stocks recovered?
- Are there are current threats to livestock? What is being done to protect livestock against these threats?
- Describe the fisheries resources in the area?
- Describe the migration trends over the last 10 years.
- What are the major agricultural crops produced locally?
- Are there local market facilities? If not, where do people sell/buy their products?
- What types of financial institutions exist to support the economic activities of people?
- Access to loan, sources, costs, and terms.
- In the past 10 years, have there been any economic changes or shocks that have affected your employment opportunities? If so, what were these changes and how did it affect your income earning opportunities?

II. Access to Resources

Natural Resource Information (Transects, maps and focus groups)
- Where do you get the drinking water? Are they are protected from pollution? Who is responsible for getting it? What is the time required?
- What water-borne diseases are prevalent in the community? (Guinea worm, Diarrhea, etc.)
- Land type, soil fertility, hazards (flooding, drought, etc.)
- Patterns in access to land, water resources, pastures, and other community resources.
- Land tenure system.
- Trends in land availability.
- Constraints and opportunities for getting access to natural resources
- What changes have occurred in the household access to agriculture land and agriculture wages opportunities during the last ten years?

III. Access to Institutional Structures and Organizations

Relationship with Local Government, Community Based Organizations (focus groups)
- Do you or your family participate in any food assistance programs? If so please describe these?
- Is it adequate?
- What is needed? Or not being provided?
- Any ideas about why services are not being delivered?

IV. Livelihood Strategies

Livelihood Strategies (focus groups, seasonal calendar)

- What are the main sources of income and work available for each livelihood group?
- What opportunities exist in the community for livelihoods?
- What are the major risks associated to the different livelihood strategies perused by different occupation groups.
- What is the seasonality of work/income generating activities?
- What are the gender differences in access to work, types of work, and income generating activities?
- Do people migrate for work? If so what do they do and where do they go? Which household members migrate? How long are they gone? How important are remittances to household income?
- Are the current patterns of migration normal for this time of year?
- What are the major risks to the livelihood in the community, and how will these risks be managed?

Coping Strategies (focus groups, seasonal calendar)
- How do people cope when their income or agricultural production is not enough?
- Which months are the leanest times in terms of food and income?
- What happens to consumption patterns during the lean season? (Adjustment of meals, types of food eaten, etc.)
- What are substitute foods when food is in short supply?
- When food is in short supply, do some family members receive preference in food access? Who and why?

V. Well Being or Livelihood Outcome Information

Food Security Situation (focus groups, seasonal calendar)
- How do you manage getting access to food in times of scarcity?
- How many months can you meet your own consumption from your own production or from your own cash?
- What do you think the food security situation will be in the next 6 months? Is this normal for your community?
- What are the priorities for your community to improve food security?

Human Capital - Education (focus groups, some household case studies)
- What types of schools does the community have access to? (both public and private)
- What is the highest education level attainable in the schools?
- Tell us about the quality of education.
- Is there any informal education?
- What sorts of skills are found in the community? Where do people go to get these skills?
- Describe local levels of literacy, dropout rates –noting gender differences
- Are there certain times of the year when dropout rates are more likely? When are they? Who is most likely to drop out and why?

Human Capital - Health (focus groups, seasonal calendar, some household case studies)

- Describe the types of diseases experienced by the community over the last one year. Is this normal for your community?
- Describe the seasonal variations in disease and illness.
- Does the community have access to a health clinic? What types of health facilities are available locally? Who has access to these services? What are the costs to seeking care (time included)?
- Where do you go when you are sick?
- What could be done to improve the health situation in your community?
- What sanitation facilities most of the people have access to (toilet, hand washing, garbage disposal)?

Human Capital – Social (focus groups)
- Do people get social support when they run out of food or income? If so, from whom and in what form?
- Do some groups have more social support than others?
- Has the level of social support changed over the last 10 years?

Shelter (focus groups)
- What is the quality of the housing in the community? Does this vary by social group? (floor, walls, roof)
- What are the sanitary conditions of the houses?

Environment (focus groups, seasonal calendar)
- What is the status of water access for household consumption (quality, distance)? What are the seasonal variations?
- What is the status of water access for consumption by livestock (quality, distance)? What are the seasonal variations?
- Have the community sanitary conditions gotten better or worse in the past 10 years? Why?
- Describe the rainfall pattern over the last year. Is this different from that of the previous 10 years?
- Where do most people dispose human waste? How do people dispose of waste water and other solid wastes?

VI. Risks and Vulnerability

Hazards (Open-ended questions: focus group, key informant interviews, visual inspection)

- Can you provide a list of factors that increases your vulnerability?
- How frequent your community expose to those shocks and how severe they are? How long do they last?
- What types of occupational groups or social groups are likely to be affected most for each of these shocks?

- What types of Early Warning Systems does the community have to mitigate the effects of these disasters/catastrophes?

HIV/AIDS (Open-ended questions: focus group, key informant interviews)

- What do people know about HIV/AIDS and STIs?
- Do you know anyone with these diseases or anyone who has died from these diseases?
- How people in this community get information about HIV/AIDS and STIs?
- What do most people think the modes of transmission are?
- Is HIV/AIDS curable?
- What do people think about the causes of these diseases?
- How do community members behave towards people known to be infected and affected?

Conflict (Open-ended questions: focus group, key informant interviews)

- Is there a history of conflict in this community? (intra and extra community)
- What are the types of conflicts? (Chieftaincy, religious, ethnic and cross-ethnic, generational)
- How the current conflict situation is different compared to past.
- Are there tradition systems for conflict resolution? What institutions are involved in conflict resolution?

Annex 10: Qualitative Assessment Tools
Qualitative Interviews

🖾 *Group Interviews* are conducted to obtain general background information on a particular community. They usually involve a relatively large, but manageable group of community members and are often gender segregated in order to capture differing views. Group interviews should be directed according to a topical outline and should allow sufficient time for the free and open expression of community members.

🖾 *Key Informant Interviews* may be conducted simultaneously or immediate following group interviews. They are typically held with the community's legal, political and/or natural leaders and authorities. They may also included individuals noted for their unique perspective and/or high degree of vulnerability, such as widows, educated girls, ethnic minority leaders, elders, school teaches, and health post attendants. Key informant interviews should result in the development of more detailed community profiles and a wealth of information useful for cross-checking information gained in other stages of the assessment.

🖾 *(Participatory) Focus Group Interviews* are conducted among groups representative of the primary livelihood systems and wealth ranking categories in the particular community under study. Focus Groups are identified and formed based on the information obtained through Group Interviews and Key Informant Interviews and are typically desegregated by gender. Again, the discussions are guided by a topical outline but should remain flexible in time and structure.

🖾 *(Participatory) Semi-structured Household Interviews* can be viewed as case studies that identify differences among the households of a particular community and allow for comparisons of households of both similar and different livelihood systems. Community samples typically include three to six households opportunistically sampled to represent various livelihood systems and levels of food security.

Interactive Collection Tools

Interactive data collection tools are typically less structured than interviews, depend on the direct participation of community members, and are especially well-suited for analysis of agricultural, ecological and social systems within a particular community. Among the many interactive tools, the most common are transect walks, seasonal calendars, community maps, Venn diagrams, and wealth ranking.

Transects are typically conducted by walking through the community with an informed local participant to locate important food and livelihood security resources, pockets of poverty and discrimination, environmental assets and hazards, as well as geographic opportunities and constraints. During the transect walk, in-depth interviews may be held with individuals met and identified as useful key informants, or with small (focus) groups. However, be careful not to forget the aim of getting an overview of the whole community, and don't allow yourself to be unduly influenced by the individuals you happen to meet first. It may be better to invite them to a subsequent focus group meeting.

Seasonal calendars are useful for identifying changes in climate, cropping patterns, labor access, food procurement and major expenditures that determine critical times for household food security. The calendars are drawn by groups of local representatives, either on the ground (using sticks, stones, etc.) or on large sheets of paper. It can be useful to compose calendars with groups of men and women separately as they are often responsible for different activities and may have differing views of which times of year are the most difficult. It may also be useful to develop maps with different groups that represent different socio-economic groups and livelihood types.

Community maps are similar to transect walks in that they rely on the direct input of community members that are intimately familiar with their surroundings. They differ in that in addition to agricultural and ecological zones, they typically include useful information on housing, roads, water, schools, churches and/or mosques and other infrastructure. Participatory mapping often conveys a sense of the institutional context and social structure within the community.

Venn diagrams are typically used to identify the institutional relationships in a given community. They are particularly useful for understanding the informal social networks that vulnerable households rely on for buffers from periodic shocks. They may also help to assess the degree to which may be empowered, or disempowered by certain institutions, and identify potential conflicts by determining local stakeholders that may be negatively affected by future interventions.

Wealth ranking is used to get an understanding of local perceptions of the different wealth groups within a community and place every household in one of these groups. It not only helps to identify who is poor, it identifies the ways in which they are poor and suggests ways in which their situation can be improved. Wealth ranking can also be helpful in assessing food needs and comparing changes in wealth over time.

Annex 11: Example of Community Questionnaire

One interview per community

Questions related to IDPs are relevant if IDPs are living in the community. If not, then do not ask those questions.

Date *mm* **/__/ __/** *dd* **/__/ __/** 2006

  District _____   Dcode **|__|**

                    Perfecture_____ Pcode **|___|**

                        Village_____ Vcode**|__|__|**

Section 1: Demographic and Community Information

Current Population (Approximate %)
1.0a - Population of ***Residents***   **|__|__|__|__|__|**

1.0b – Number ***Resident*** households   **|__|__|__|__|**

1.0c – Percent Female headed households (***Residents***)   **|__|__|** %

1.0d - Population of **IDPs/Refugees**   **|__|__|__|__|__|**

1.0e – Number **IDPs/Refugees** households   **|__|__|__|__|**

1.0f – Percent Female headed households (**IDPs/Refugees**) **|__|__|** %

1.1a – What are the main tribes of ***Residents*** living in this community?
(i)_____ **|__|__|**   (ii) _____ **|__|__|**
(iii)_____ **|__|__|**   (iv) _____ **|__|__|**

1.1b – What are the main tribes/nationalities of **IDPs/Refugees** living in this community?
(i)_____ **|__|__|**   (ii) _____ **|__|__|**
(iii)_____ **|__|__|**   (iv) _____ **|__|__|**

1.2 – In the past 2 years, have more people moved to your community, or have there been more people that moved away?
More arrivals………………………………1
More departures……………………………2
About the same of both…………………3
Neither arrivals nor departures……….4

1.3 - For about how many years has this community existed?

                    YEARS: |__|__|__|

1.4 Does your community have a mosque?

            1 = Yes
            2 = No (if no, skip to ???)

1.5 What is the condition of the mosque?

    1 = Poor
    2 = Good
    3 = Excellent

1.6 Is the practice of Zakat prevalent in your community? *(This is relevant if it is a Muslim community)*

    1 = Yes (if Yes, skip to ??)
    2 = No

1.7 If not, why not?

Basic Community Information

1.8 Which of the following social groups or organizations are present in your community? *(circle all that apply)*

Credit groups………………………………….1
Savings and Loan groups……………..……2
Farmers Associations……………….…….3
School-related groups…………….……..4
Mosque committee…………………….…..5
Community-based organizations…..6
Health Groups……………………………….7
Other (list)_____..……8

1.9 What types of development activities are currently taking place or have taken place in the last 6 months in your community? *(circle all that apply)*

NGO activities…………………..1   Please describe_____
Government activities………2   Please describe_____
Other activities………………..3   Please describe_____

1.10a How have the following events affected your community in the last year?

1.10b How are the following events likely to affect your community in the current year?
                        A = Not at all
                        B = Minorly Affected
                        C = Moderately Affected
                        D = Severely Affected

Shocks	1.10a Last year	1.10b This year
Insecurity affecting the community/conflict		
IDP Influx		
Returnee Influx		
Major Pest Infestation / locusts		
Drought and Major Dry Spells		
Floods or Excess Rain		
Wind Damage		
Poor Production		
Human Disease Epidemic		
Livestock Disease Epidemic or Loss		
Shortage of food		
Hampered Physical Access to Roads or Transportation		
Increased Prices for Food and other Necessities		
Other ___(specify)_____		

Section 2 – Economy and Infrastructure

Using the following codes, please answer the following questions

---

1 = Cereals/staple crop farming	2 = Cash crop farming (tobacco, vegetables, etc)	3 = Sale of livestock and livestock products
4 = Trading /Small Business	5 = Non-ag. Wage Labour	6 = Agricultural labour
7 = Skilled Labor	8 = Remittances	9 = Handicrafts
10 = Blacksmiths	11 = Leatherwork/Tannery	12 = Sale of Fish
13 = Other *(Specify)*	14 = Other (Specify)	

2.0a – _In order of importance_ what are **currently** the major income sources of the **Residents** of this community?

1ˢᵗ [   ]   2ⁿᵈ [   ]   3ʳᵈ [   ]   4ᵗʰ [   ]

2.0b – _In order of importance_ what are **currently** the major income sources of the **IDPs/Refugees** of this community?

1ˢᵗ [   ]   2ⁿᵈ [   ]   3ʳᵈ [   ]   4ᵗʰ [   ]

2.1a - Do you think life for the people of this community is better or worse than it was two years ago? *(Circle answer)*

1 = Better   2 = Worse   3 = No change

2.1b Why? WRITE THE THREE MAJOR RESPONSES

(a) _____

(b) _____

(c) _____

2.2a - Is the road that comes to (or passes by) this community impassable by trader's truck during certain times of the year?

YES……….1   NO……..2 *(skip to 2.3a)* [   ]

2.2b – During which month does the road become impassable? For how many months is the road impassable?

MONTH ? [   ]   **NUMBER OF MONTHS:** [   ]

2.3a - Is there a permanent (daily) market in this community? (circle)

YES………………..1   NO………………..2

2.3b - Is there a rotating market in this community? (circle)

YES………………..1   NO………………..2

2.4a - During certain times of the year, do **Residents/IDPs/Refugees** in this community temporarily leave to look for work elsewhere?

1 = Yes   2 = Never *(skip to 3.0a)*   3 = Currently Not

2.4b - Where do most of them go? *(circle all that apply)*

1 = Community in this state   **2** = Community in other perfecture

3 = Community outside perfecture   **4** = Other country

2.4c - What type of work do they look for during these times of the year?

Agricultural wage labour………………1   Non-agricultural wage labour………2
Employment/Salary……………………3   Livestock herder……………..………….4

Trading……………………………………….5   Other (specify)_____6

2.4d – Each year, how long do they work away from the community before returning?

|___|___|weeks/months (circle one)

What ages are most of the people who find seasonal work outside the community?   List ages for both males and females below. Enter N/A if either group does not travel for seasonal work.

2.4e Males   **2.4f** Females

Section 3 – Land Use & Food Production

3.0a What proportion of **Resident** households in this community is cultivating land for agricultural production?

1. Almost all
2. Half of households
3. Less than half of households
4. Very few
5. None

3.0b - For those **Residents** not cultivating, what are the reasons for not cultivating? *(Circle all that apply)*

1 = No access to land   2 = Lack of labour
3 = No seeds and tools   4 = Rely on other income sources
5 = Insecurity   6 = Poor rains
7 = Distance to farms   8 = Others (specify) _____

3.0c - For **Resident** households cultivating, how do most access the land?

1. Sheikh allocation
2. Inherited
3. Squat by permission
4. Sharecropping
5. Rent
6. Other (specify)_____

3.0d – What are the tenure arrangements used by **Residents** in this community? *(Percentages)*

d1 Owner **|___|___| %**   **d2** Labourer working for landowner **|___|___| %**

d3 Borrowing/ Renting/ Sharecropping **|___|___| %**

3.0e – Compared to last year, how is the total area planted by **Residents** this year different?

1 = Increased   2 = Decreased   3 = Remained the same

3.1a What proportion of **IDP/Refugee** households in this community is cultivating land for agricultural production?

1 = Almost all
2 = Half of households
3 = Less than half of households
4 = Very few
5 = None

3.1b - For those **Refugees/IDPs** not, what are the reasons for not cultivating? *(Circle all that apply)*

1 = No access to land   2 = Lack of labour
3 = No seeds and tools   4 = Rely on other income sources
5 = Insecurity   6 = Poor rains
7 = Distance to farms   8 = Others (specify) _____

3.1c For **Refugee/IDP** households cultivating, how do most access the land?

1. Sheikh allocation
2. Inherited
3. Squat by permission
4. Sharecropping
5. Rent
6. Other (specify)_____

3.1d – What are the tenure arrangements used by **Refugees/IDPs** in this community? *(Percentages based on proportional piling)*

d1 Owner |___|___| %   **d2** Labourer working for landowner |___|___| %

d3 Borrowing/ Renting/ Sharecropping |___|___| %

3.1e – Compared to last year, how is the total area planted by **Refugees/IDPs** this year different?

1 = Increased
2 = Decreased
3 = Remained the same
4 = Did not plant

What is the date of first planting? *(Convert from local calendar)*

3.2a - Normal year: |___| *week* |___|___| *month*

3.2b - This year: |___| *week* |___|___| *month*

3.3 – What types of soil are found in agricultural areas surrounding this community? *(Percentage based on proportional piling)*

Sandy |___|___|%   Clay |___|___|%   Wadi |___|___|%

3.4a – **Currently**, what are the main constraints to good agricultural production for people in this community?

(1)_____ |___|___|
(2)_____ |___|___|
(3)_____ |___|___|

3.4b - What are the suggestions to solving these problems for agricultural production for people in this community?

(1)_____ |___|___|
(2)_____ |___|___|
(3)_____ |___|___|

3.5 Currently, what proportion of households in this community has a *jubraka*?

1 = Almost all
2 = Half of households
3 = Less than half of households
4 = Very few
5 = None

Section 4 -Livestock and pasture

4.0a – **Today,** what type of livestock are owned by **Residents** in this community? *(circle all that apply)*

Cattle…………………………..1
Sheep…………………………2
Poultry…………………………3
Goats……………………………4
Donkeys………………………5
Horses…………………………6

Camels...........................7

4.0b – What happened to any livestock lost by **residents** during the last year? *(Circle all that apply)*

1 = Looted   2 = Abandoned   3 = Killed   4 = Sold   5 = None lost

4.1a – *Today,* what type of livestock are owned by *IDPs/Refugees* in this community? *(circle all that apply)*

Cattle...............................1
Sheep..............................2
Poultry.............................3
Goats................................4
Donkeys...........................5
Horses.............................6
Camels...........................7

4.1b – What happened to any livestock lost by **refugees/IDPs** during the last year? *(Circle all that apply)*

1 = Looted   2 = Abandoned   3 = Killed   4 = Sold   5 = None lost

4.2 – What are the main sources of water for livestock? *(Circle all that apply)*
1 = Streams/ponds   2 = *Hafir*
3 = Hand pumps   4 = Other_(list)_____

4.3a – For **all community members**, what are the problems facing the livestock **today**? *(Circle all that apply)*

1 = Not enough pasture   2 = Not enough water
3 = Lack of veterinary treatment   4 = Lack of vaccination
5 = Theft/looting   6 = Other_(list_____

4.3b - What are the suggestions to solve these problems for livestock raising for people in this community?

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

4.4a – What are the main sources of feed for livestock? *(Percentages)*

a1 Crop Residue **|__|__|__|% a2** Purchased Fodder **|__|__|__|%**

a3 Natural Pasture **|__|__|__|%**

4.4b – How is the pasture situation for livestock feeding?

1 = Excellent   2 = Good

3 = Average   4 = Poor

Section 5 - Health

5.0a Is there a functioning health centre/clinic in the community?

YES.........1 *(skip to 5.1)*   NO..........2

5.0b If not how far is the nearest one? _____ *(Minutes walking)*
Name of the location_____

5.1 What are the major health problems for **children** in this community? List them in order of importance.

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

5.2a What are the major health problems for **male adults** in this community? List them in order of importance.

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

5.2b What the major health problems for **female adults** in this community? List them in order of importance.

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

5.3 What are the main problems with health services for the people of this community? List them in order of importance.

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

Is there an HIV/AIDS program in the community?

      YES………1   NO……….2

Is HIV/AIDS is an issue in the community?

      YES………1   NO……….2

Section 6 - Education

6.0. Are there any functioning schools in this community?   YES………………1 *(skip to 6.2)*
      NO……………………2

6.1. If not how far is the nearest one? ……………….. *(Minutes walking).*
Provide also the name of the location_____

6.2 What is the number of male and female teachers at this school?

    6.2a Male Teachers   6.2b Female Teachers

6.4 Which of the following types of schools, if any does your community have access to?

	Yes = 1 / No = 2
6.4a Girls School	
6.4b Boys School	
6.4c Mixed School	
6.4d Madrassa / Koranic School	

6.4 If your community has access to a mixed school, does the mixed school have separate toilet facilities for female students?

1 = Yes   2 = No

6.5a About what proportion of the ***Resident*** boys of primary school age are attending?

Almost all of the boys………………..1
More than half, but not all…………2
Half of the boys…………………………3
Less than half……………………………4
Only a few boys…………………………5
None……………………………………………6

6.5b About what proportion of the ***Resident*** girls of primary school age are attending?

Almost all of the girls…………………1
More than half, but not all……………2
Half of the girls…………………………3
Less than half……………………………4
Only a few girls…………………………5
None……………………………………………6

6.5c What are the main reasons why ***Resident*** children in this community are not attending primary school? *List them in order of importance.*

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

6.6a About what proportion of the ***Refugee/IDP*** boys of primary school age are attending?

Almost all of the boys………………..1
More than half, but not all…………2
Half of the boys…………………………3
Less than half……………………………4
Only a few boys…………………………5
None……………………………………………6

6.6b About what proportion of the ***Refugee/IDP*** girls of primary school age are attending?

Almost all of the girls…………………1
More than half, but not all……………2
Half of the girls…………………………3
Less than half……………………………4
Only a few girls…………………………5
None……………………………………………6

6.6c What are the main reasons why ***Refugee/IDP*** children in this community are not attending primary school? *List them in order of importance.*

(1)_____ |__|__|
(2)_____ |__|__|
(3)_____ |__|__|

6.7 What are the most serious schooling problems/needs from the point of view of the people of this community? *List them in order of importance*

(1)_____ |__|__|
(2)_____ |__|__|

(3)_____ |__|__|

6.8 What are the community's main sources of drinking water?
(circle all apply)

       Piped ………………………………………………1
       Tubewell/borehole with pump…………2
       Protected dug well……………………………3
       Open/unprotected well…………………4
       Protected spring…………………………………5
       Rain water……………………………………………6
       River/stream………………………………………7
       Pond/lake/dam….…………………………………8
       Tanker/bladder……………………………….9
       Other_(list)_____……………10

Section 7 – Food Aid and External assistance

7.0a – **Today**, are any households in this the community receiving any type of food assistance?

       YES…………………1   NO………………………2 *(Skip to Section 8)*

7.0b – If yes, who are they?

       1 = Residents   2 = Refugees/IDPs   3 = Both

7.0c - If yes, what type of assistance? *(Circle all that apply)*
       a) General food distribution   **b)** Supplementary/therapeutic feeding
       c) Vulnerable group feeding   **d)** School feeding
       e) Food for Work   **f)** Seed and tool distribution
       g) Other_(list)_____

7.0d – Who is providing the food aid? *(Circle all that apply)*

       1 = ICRC   2 = Government of Sudan

       3 = World Food Programme   4= FAO   5 = OICI   6 = Other _(list)_____

Section 8 – Price information (key informants and merchants)

8.1 - For the following items in the chart below, please provide the following information for each item: the common retail unit of measure and the price during the last month.

Item	Retail Unit	Price per retail unit	Price per unit 6 months ago	Price per unit 1 year ago
Rice	**8.1a**	**8.1b**	**8.1c**	**8.1d**
Corn	**8.1e**	**8.1f**	**8.1g**	**8.1h**
Casava	**8.1i**	**8.1j**	**8.1k**	**8.1l**
Cooking oil	**8.1m**	**8.1n**	**8.1o**	**8.1p**
Sugar	**8.1q**	**8.1r**	**8.1s**	**8.1t**
Beans	**8.1u**	**8.1v**	**8.1w**	**8.1x**
Water	**1 jerry can** *(20 litres)*			

8.2 - Livestock prices

	Current price/head	Price same time last year
Cattle	8.2a	8.2b
Sheep	8.2c	8.2d
Goats	8.2e	8.2f
Donkey	8.2g	8.2h

8.3 - Other prices

	Current price	Price same time last year
Fodder (bundle/heap)	8.3a	8.3b
Firewood (small)	8.3c	8.3d
Firewood (large)	8.3e	8.3f
Charcoal (small)	8.3g	8.3h
Charcoal (large)	8.3i	8.3j

8.4 – What is the cost of milling one sack of grain?

4a. Cash (francs) |___|___|___|___| **4b**. In kind |___|___|___|___|

8.5a – What are the *current* main cereal suppliers for this location? *(Percentage based on proportional piling)*

a1 Commercial merchant |___|___| %   **a2** Local stock |___|___| %

a3 GoS supply (Zaka, etc) |___|___| %   **a4** Food aid |___|___| %

8.5b – **Last year**, what were the main cereal suppliers for this location? *(Percentage based on proportional piling)*

b1 Commercial merchant |___|___| %   **b2** Local stock |___|___| %

b3 GoS supply (Zakat, etc) |___|___| %   **b4** Food aid |___|___| %

8.6a – Where is most of the *current* commercial cereal supply coming from? *(Percentage based on proportional piling)*

a1 Same locality |___|___| %   **a2** other locality |___|___| %

a3 Other states |___|___| %   **a4** Other country |___|___| %

8.7 – How does the current supply of cereals compare to last year?

1 = Increase   2 = Decrease   3 = Same/similar to last year

8.8 – What are the main issues in cereal supply, if any? *(Circle all that apply)*

      1 = Transport   2 = Insecurity   3 = No local production

      4 = Rains   5 = Other_(list)_____

Section 9 – Community Priorities

9.0a – For *Residents* of the community, what are the main three priorities?

      (1)_____ |__|__|
      (2)_____ |__|__|
      (3)_____ |__|__|

9.0b – For *Refugees/IDPs* of the community, what are the main three priorities?

      (1)_____ |__|__|
      (2)_____ |__|__|
      (3)_____ |__|__|

Annex 12: Example of Qualitative Data Matrix

LIVELIHOOD STRATEGIES	
Context	*Information*
Major Livelihood Strategies (On-farm and off farm income)	Fishing is the major livelihood activity of the poor. They do not have many other sources of income due to a shortage of capital. Very few people pull a rickshaw. Normally the poor work in their village, they rarely go outside for work. The poor women will go to the Sundarbans to collect firewood and crabs. Richer households engage in rice cultivation and shrimp farming. Some people collect firewood from the Sundarbans. They negotiate with people so that the police do not harass them. Middle poor households are also engaged in PL and fishing, but they may also be engaged in small business. Some are engaged in buying fish from other fishing families and selling it to other communities. In terms of agriculture, they plant one rice crop: farmers plant rice in seedbeds in July, transplant rice in August; and harvest during the second half of November. PL saline water shrimp stocking begins in mid January. Households partially harvest during the last week of April; they restock shrimp at this time. Final harvesting is during the month of August. Some farmers continuously stock PL from January to June. The continuously harvest from end of April to August.
Major risk and coping strategy	Natural disasters such as cyclones occur in April. Flooding occurs in September and October. During this season, nets can be damaged from the heavy water flow. If the net is damaged, fishers may have to take a loan from the moneylenders to buy new nets. Illness can also be a major risk. The incidence of diarrhea and small pox is highest in March and April. Fevers are common in January and September. Dysentery occurs in the month of Feb. Another risk is theft of their boats. The rate of interest of a loan can also be a major risk for households. Police harassment is also a major risk. For middle poor households, the major risks are boat theft, damage of nets due to water flow, and illness. Most people do not have good risk management strategies.
Investment	Households collect fishing material from Mongla. There is no bank in the village to take a loan for the equipment. In the past, fishers were able to get loans for fishing equipment from the government, but many people defaulted on the loans so the program was discontinued. (See key informant interviews.)
Mutual support	Social cohesion has declined because of the increase in poverty. While the middle poor are invited to the village shalish (village court), they often cannot afford the time to participate. Poorer households do not have time to participate. Social conflicts do arise over who participates in loan programs and NGO activities.

LIVELIHOOD STRATEGIES	
Context	*Information*
Food security	The poor eat dal 3-4 times per week, and they consume vegetables 6 days per week. The poor may eat egg 1 time per week. They eat fish 2-3 times per week when fish are available and they eat meat very rarely. For the poor, they have food shortages from June to March (10 months). During the rainy season, food shortages are particularly high. Sometimes the middle class farmers experience food shortages for 7 months, but for poor households shortages are more severe. The middle poor experience acute food shortages in the rainy season, and these households may experience some food shortages periodically throughout the year. During the rainy season, the poorer households reduce consumption to one meal a day. Middle poor will take a loan from relatives to cope with the food shortage. In times of food crisis, women suffer the most. After the children and husband eat, there is little for the women to eat.
Education	The poorer households (primarily Muslim) cannot send their children to school do to a shortage of money. The middle poor have trouble sending children to intermediate school and they can't afford good clothing for their children, which is troublesome.
Health	Twenty percent of the households suffer from serious diseases. The middle poor cannot afford medical treatment for all of the family members during the time when illness is most severe. There is a family health clinic in the village, and heath staffs visit the village a couple times a week. Access to safe drinking water is the biggest health problem.
Shelter	Middle poor have access to tin roofs. Poorer households live in small thatched structures on government Khas land or borrowed land. They have very poor housing security.
Social	Sometimes there is conflict but residents try to resolve the problem from within the village. If they cannot solve it then they go to the UP chairman. If that does not work then they go to the police station or the courts. There are cases of divorce but the number is very low. Divorce rates are higher among Muslim families, but households were unwilling to talk about it. Hindus rarely divorce.
Environment	Fish supplies are decreasing. Siltation is increasing, and environmental degradation is getting worse. Bio-diversity is decreasing dramatically. Soil salinity is also getting worse.
Safety	Husbands and other younger men sometimes abuse women. Sometimes the miscreant violates women. The police also periodically harass villagers, who often have to pay a bribe to avoid harassment.
Nutrition	Females from poorer households are often malnourished. The poorer households suffer from acute food shortages for many months of the year. As well, the elderly are particularly vulnerable.
Focus Group Discussion for only women group	Women's mobility has increased in recent years. The NGOs and government have created many opportunities for women. Unfortunately they still have limited say in household decisions; they eat last, and are still abused by their husbands. Women have gotten together to protest divorces, but they have not been successful in stopping them.

Annex 13: Preparatory Tasks for Vulnerability Assessments

Assessment Team Recruitment and Training

The composition of the assessment team depends on the context, the complexity of the assessment and the scale of the assessment. Assessment teams typically rely on the combined efforts of an assessment coordinator, field supervisors, and enumerators (interviewers), each of which play an important role. It is the coordinator's responsibility to manage the assessment process from beginning to end. Among the many tasks required of the coordinator, effective management of information and personnel are the most important. Supervisors are responsible for overseeing the work of enumerators and managing the logistics of primary data collection. As collectors of information, enumerators occupy the central position in the assessment process. They are responsible for asking the questions, accurately recording information gained, as well as reviewing completed interviews to ensure legibility for data input and analysis. Assessment teams typically range from 6 to 35 individuals, depending on the scope the assessment. Supervisors coordinate the efforts of individual assessment teams which include four to six enumerators for collecting group, focus group, and household data.

If the assessment requires multiple teams, each should be as balanced as much as possible with respect to technical skills, language capabilities, and gender. It is also important to include individuals representing different disciplinary backgrounds and organizations. Multi-disciplinary and gender-balanced teams not only strengthen the diagnostic process and encourage cross-fertilization of ideas, they facilitate the inter-organizational sharing and learning that ultimately enhances problem analysis and future programming. Additionally, inclusion of individuals representing various agencies (government, NGOs, community groups) enables effective scaling up and scaling down of future interventions.

Training of assessment team personnel is an ongoing process overseen by the assessment coordinator and supervisors. Prior to going to the field, the team typically participates in a four to five day assessment workshop. The primary purposes of the training workshop are to introduce key concepts that form the basis of the data collection procedure, developing and refining appropriate assessment methodologies, training in their application, and reviewing logistical arrangements. Again, the inclusion of representatives of multiple agencies in assessment training will improve communication between stakeholders and strengthen the capacity of participants to conduct future assessments without external assistance.

Field Testing and Revisions

Assessment instruments such as quantitative questionnaires and topical outlines should be pre-tested before field visits start. This is often done as a part of assessment training and normally requires at least two full days. The pre-test should be conducted on a small number of households or respondents, preferably similar in characteristics, such as ethnicity and language, to the respondents in the assessment. The objectives of a pre-test are to:

> ➢ Determine if questions are appropriate to the context of the emergency;

> ➢ Find appropriate wording in local languages of key concepts and words;

> ➢ Calculate the average time needed to interview a household (all pre-test interviews should be timed, with start and end times noted on the first sheet of the questionnaire); and

> ➢ Determine if questions are clear to the enumerators.

After the pretest field teams will need to meet to review the outcome of the tests and discuss the implications for modifying the assessment instruments. It is not unusual to modify 10-20% of the questions as a result of the pretest.

Developing an Analysis Plan

An analysis plan is a short document that summarizes how the data will be analyzed. It usually specifies what statistical tools will be used to summarize the data and what types of statistics will be derived for key variables. A good analysis plan will contain, at a minimum, the following:

- ✓ Objectives of the analysis;

- ✓ A short, concise overview of the conceptual analytical framework;

- ✓ Description of the sampling strata and units of analysis;

- ✓ Primary analysis topics and how they will be addressed, with a short description of the rationale for analysis;

- ✓ Statistical summaries for major indicators;

- ✓ Details of how qualitative data will be analyzed and linked to quantitative findings.

A detailed analysis plan may even propose summary tables that will be filled in during the analysis. The analysis plan should be developed by the person responsible for analyzing the information. The advantage of developing such a plan is that is forces the analyst and others to consider how the information will be explored before it is collected. This often influences the way information will be collected for some indicators.

Assessment Logistics

Logistics is a critical part of any assessment, and it is important to carefully plan all logistical aspects taking account of logistic realities. The critical aspects of logistics include:

- ✓ **Equipment** – can include such items as scales and measuring boards if children are to be weighed and measured, hand-held PDAs if used for data entry, GPS for location mapping, maps and compasses, pens, tents and sleeping bags, rain gear, etc.

- ✓ **Transportation** – each team will need at least one vehicle and driver, plus adequate fuel. Additional transportation may also be required to shuttle supervisors to different sites and/or deliver completed questionnaires and qualitative notes to central data entry stations. In some cases an extra vehicle will be needed for advance visits to inform villages that a survey team will be arriving in the coming days.

- ✓ **Accommodations** – need to plan for either hotel accommodations or for team members to stay in villages.

- ✓ **Health and Nutrition** – Contingency plans need to be made in case of illness. Proper nutrition and rest will improve the chances of an incident-free assessment. Every vehicle should carry First-Aid kits.

- ✓ **Finances** – petty cash and DSA will be needed for hotels, meals, gasoline, etc. In some cases it is necessary to pay enumerators part of their salary if the assessment lasts for more than one month.

- ✓ **Data Management** – arrangements need to be made for accumulating and protecting completed questionnaires, and transporting them to processing centers.

In planning for the amount of time that will be required in the field, keep in mind that enumerators can be expected to conduct 4-6 household-level interviews per day if livelihoods are being explored. The average number per day will depend, of course, on the distance teams have to travel to the sites and the accessibility of household respondents. For planning purposes, however, use five interviews per day. The amount of field time can be adjusted by either increasing or decreasing the number of enumerators (keeping in mind that this may also change the number of supervisors required). A survey of 1,000 households would take approximately 200 person-days. If 20 enumerators are hired, this would translate into about 10 field days (or 20 field days with 10 enumerators, 5 field days with 40 enumerators, etc.)

Logistics can also be influenced by the sampling strategy. Cluster sampling, for example, is often used to decrease the number of sites that are visited. Although clustering increases the number of households needed, it is often desirable in terms of logistics because it limits the number of sites and narrows down the geographic extent of households that are included in the sample.

Keep in mind that an expanded assessment is fatiguing, and that enumerators become tired (and sometimes bored) with the routine of a survey, so when possible it may be better to hire more enumerators and keep the number of field days shorter. This also means that the information collected will be available sooner.

For large-scale expanded assessments it is useful to activate a core support team. This team includes assessment coordinators and technical assistants from participating NGOs and other technical support groups. This group of core team members:

- ➢ Provides support to survey teams in the field;

- ➢ Transfers data collection instruments from the field to the point of data entry (if necessary); and

- ➢ Regroups weekly throughout the data collection phase to ensure quality control across sampling zones.

Conducting the Assessment

The process of assessment team recruiting and training should ensure that individual team members possess the knowledge and skills to necessary for conducting an accurate and comprehensive assessment of food security. Before arriving in the community, each individual team member should clearly understand their roles and responsibilities as part of the overall team. Ideally, a Field Manual summarizing the protocol and providing guidance on the tools used in the assessment should be developed and distributed to each enumerator as part of the "briefing package". The manual will help to standardize implementation across the sample.

The Assessment Supervisor and Field Coordinator need to take responsibility for ensuring that data is managed and organized systematically throughout the data collection process to allow for timely processing and analysis. As part of the collection phase, it is important to; 1) Conduct regular debriefing sessions with enumerators to assess and make necessary adjustments to data collection (interview) processes; 2) Confirm logistical arrangements (appointments, travel arrangements); and 3) Allocate sufficient time for processing and cleaning the data.

1. Data Collection Process

Step One: Before the arriving to conduct the assessment, it is important to let the community know that the assessment team is coming to visit them on the scheduled day. This can be done by sending out a Country Office Field Representative prior to the team's arrival. It is also important to notify local authorities that the assessment is going to take place and in which communities, although care must be taken not to politicize the assessment process.

Step Two: Contact local community leaders to explain the purpose of the study. Care must be taken not to raise expectations among the population about follow-on projects or programs.

Step Three: Conduct interviews with groups, key informants and community service providers. Topics typically include community infrastructure, land tenure arrangements, sources of credit, marketing, typical labor arrangements, and government programs in the area.

Step Four: Ask community leaders to accompany the team in a walk to conduct a community transect so that the team can become familiar with the physical surroundings of the community.

Step Four: The team then breaks up into sub-teams for qualitative and quantitative data collection. Members of qualitative teams will focus on data collection methods such as constructing the community map, drawing a seasonal calendar, creating Venn diagrams, and facilitating a wealth ranking exercise. Similarly, quantitative teams will coordinate to conduct household interviews and other quantitative data collection activities. It is unlikely that these activities will occur simultaneously and should be sequenced according to a program schedule agreed on by the assessment team and community leaders.

Step Five: Once the data have been collected, the assessment team returns to a central location and begins entering qualitative information into matrices and quantitative information into data analysis packages.

During data collection it is advisable to conduct periodic random reviews of data collection forms. Forms can be reviewed by a data collection supervisor, by an independent auditor, or by data collection personnel (who can check other members' forms). Check for errors in coding, missing information and legibility.

Field work should proceed according to a time schedule, and it is important that each interviewer understands and follows field procedures and how to handle various problems that may be experienced during the field work.

Problems Typically Encountered during Fieldwork

- Locating sample households

- Problems in locating a household, or non-response
    - **No one at home at time of the call**
    - **Assigned household inaccessible**
    - **The house is all closed up and neighbors say that no one lives there**
    - **The dwelling is non-residential**
    - **The dwelling is a building with several apartments**

- Identifying and interviewing eligible respondents
    - **No eligible respondents**
    - **Eligible respondent not available**
    - **Respondent refuses to be interviewed**
    - **Interview not completed**

Data Entry

Step One: Assessment teams regroup following fieldwork to check questionnaires and discuss relevant issues that may arise.

Step Two: Supervisors should cross-check qualitative collection tools and/or questionnaires for completeness nightly.

Step Three: Qualitative data should be organized using matrices or templates. A matrix contains an outline of headings for the specific measurement objectives and information requirements. Matrices completed by individual team members or assessment teams (in a large assessment with multiple teams) can then be consolidated into a single matrix.

Step Four: After all of the notes from the team members are entered into matrices, the team reviews the information together to identify key trends, issues and areas where the interview process can be improved.

Step Five: Quantitative surveys should be entered into an analytical software package in a central location by a trained data entry team. A template (or data mask) should be developed that reflects the survey to make the transfer of data into the software as smooth as possible.

Quantitative Data Analysis Software

> **There are some software packages that can be used to create a data mask. Consider using** SPSS Data Builder **(good but expensive),** CSPro **(available for free from** www.census.gov/ipc/www/cspro**),** MSAccess **or** EpiInfo **(**www.cdc.gov**).**
>
> **The data mask should include ways to decrease error. The use of drop-down boxes and radio buttons are one way to reduce error because the data entry person is restricted by the choices in the lists and boxes.**
>
> **Variables with pre-defined or predictable ranges should be bound. For example, if a yes or no question is coded by the numbers 1 and 2, respectively, then the data entry variable should be defined as having a range of 1 to 2. Any other code entered will be rejected.**

Data Cleaning

Data should be thoroughly cleaned and edited before any analysis begins. There are several techniques for cleaning data, but using a data mask as described above will minimize the amount of cleaning that is required. One way to clean data is to look for outliers. Outliers are data points that fall well outside of the "normal" responses, and the best way to discover them is to plot a scatter graph of the data (or use a frequency distribution). Suppose you were looking at agricultural land ownership and every household was within the rage of 0-50 acres. If there were, for example, several households with over 100 acres they would be considered outliers, because they lay outside the normal range. Just because something is outside of the normal range, however, does not mean it is wrong, so when outliers are discovered you must go to the original data forms to see if there was an entry error. If errors do exist you must then decide what to do with the data. Another form of error checking is based purely on logic – knowledge of what a reasonable response should be given the characteristics of the respondent. Data should make sense and be consistent within cases.

Discrepancies in logic may require a second look at the original questionnaires for problematic cases. For example, a household with no children should not have responded to questions about child education or health. Similarly, households that practice agricultural production should provide some response to questions about access to land.

Annex 14: How to Develop M&E Plan

The detailed M&E plan may be part of the project implementation manual, an annex to it or a separate document. Irrespective of where it can be found, the implementation guidelines and M&E Plan must be closely linked and, above all, coordinated. Contradictions or ambiguities in the two sets of guidelines must be avoided.

As the detailed M&E Plans may contain an overwhelming degree of detail, summaries for all project participants are helpful to keep everyone focused on their responsibilities. A good way to summarize specific inputs is in an M&E timeline for everyone who plays an important M&E role. Ideally, these timelines should be integrated within weekly and monthly activity timelines so that M&E becomes an integrated part of activities.

Year	Activity	Responsible Person and/or Unit
Y1, 3-4th quarter	•Participatory irrigation scheme appraisal in all schemes	> District team/planning facilitators
Y2, 1st and 2nd quarter	•Farmer and scheme-level baseline survey (questionnaire)	> Project management/consultant
	•Study on scheme costs	>Project management/ consultant
	•Financial viability survey of 24 schemes	>Planning facilitators
Y2, 3rd and 4th quarter	• Environmental screening/ scoping	> Consultant
	• Training needs assessment	> Training coordinator
	• Service performance assessment of selected rural district councils and support agencies	> Consultant
	• Institutional mapping and SWOT analysis	> Consultant
	• Context assessment	> Monitoring expert

(Source: IFAD, (undated))

Indicative Contents for an M&E Plan

A documented plan is critical for keeping track of activities and resources. The M&E plan provides the conceptual and, above all, practical basis for planning, monitoring and evaluation within the project. The M&E plan typically describes objectives, strategies, methodologies, work plan, activities in detail and the technical tools to be used. The document also defines the main concepts related to M&E, the revised log Frame, and the M&E matrix.

The M&E Plan is usually the reference point for stakeholders throughout the project life. Hence it needs to be comprehensive enough, at the macro level, to provide a clear picture of the overall project intentions and how the M&E system will serve this (IFAD, undated))..

Topic	Description
Purpose and Scope	• Project overview and objectives, rationale and justification for the design of the M&E system • How the M&E system will support project management and meet the reporting requirements and information needs of different stakeholders • Summary of overall experience of M&E undertaken with key stakeholders • Discussion of extent of participation, balance between qualitative/quantitative approach, resource intensiveness and the intended poverty focus of the M&E system
Approach	Overview of how stakeholders will be involved, what learning-oriented approaches will be used and, in general terms, what information gathering and analyzing methods will be used; for example, the extent of use of participatory approaches, geographic information systems, computer-based information systems or baselines surveys.
Revised logical Framework, plus indicators, information needs and sources	Precise definition of all indicators and information needs for all levels of the objective hierarchy: • Assessment of the information needs and interests of all key stakeholders • Assessment of indicators of exogenous factors and assumptions (e.g., climate, prices, outbreak of pests and disease, economic situation, policy environment) • Assessment of information needs and indicators for relevance and end-use and for technical and resource feasibility •Selection of indicators

Management Information system and reporting	• Purpose of the management information system • Organization of information gathering and synthesis: - For each expected information product – who, what, when and where - Schedule of information production – who, what, when, to whom, for what purpose - How computerized networks and manual archiving systems are expected to function, with/to whom, for which data - Outline of data storage needs • Expected reporting outputs, for example: - Informal communication and feedback channels - Report flows – deadlines and frequencies - Annual Work Plan (AWP) – outline of the AWP format, including output/activity plans, training plan, procurement plan, contracted services plan - Half Yearly progress reports for the project as a whole and each component, village-based reviews - Recurrent supervision missions
The M&E work plan (processes and events) and timing of activities	Precise definition of methods to be used with different stakeholder groups for two core purposes: *1. M&E of resources, activities and implementation for effective project operations:* • Project resources: transport use, allowances, register of assets, register of services/technical assistance • Project activities: training (workshops, study tours, etc.), construction (technical or social infrastructure), Scheme organization, trials and demonstrations, credit lines, etc. • Other monitoring activities *2. M&E of outcomes and impact for guiding the project strategy, for example:* • Proposed surveys: baseline/household, component, staff • Participatory annual assessment and planning workshops • Other annual evaluation and beneficiary assessments, reviews and planning sessions • Mid-term review and project completion report • Feasibility of methods in terms of technology and resources • M&E work plan schedule: integrated schedule of key events and reporting/decision-making moments • Critical events agenda

Establishing Conditions and capacities	**M&E organization:** • Necessary institutional and stakeholder linkages for M&E • Existence (or not) of a specific M&E unit and how it relates to the project structure and hierarchy of authority **Human resource needs:** • Number, capacities and responsibilities of different stakeholders in M&E, including project staff and primary stakeholders • Incentives for different stakeholders • Training needs of stakeholders and staff **Resource needs:** • Vehicles and equipment • Technical assistance
The M&E budget	Detailed budget allocation
Appendices	• Original and revised log frames • List of proposed indicators • Outline formats for data collection, annual and biannual schedule of activities, etc. • Outline formats for preparing: quarterly, half yearly and annual reports; a summary of main project achievements; status reports on project inputs and resources, project outputs and results; evaluation studies – summary of findings and recommendations • Baseline survey questionnaire • Staff job descriptions and details of allowances • Technical Assistance terms of reference • M&E work plan • Detailed budget of M&E

(Source: IFAD, (undated))

M&E Matrix

Using M&E matrix is an effective way to develop a detailed plan. To make M&E plan operational you need detail information that can be summarized in the M&E Matrix. Following is an outline of the M&E Matrix.

Information Needs and Indicators	Baseline Information Requirements Status and Responsibilities	Data- Gathering Methods, Frequency and Responsibilities	Required Forms, Planning, Training, Data Management, Expertise, Resources and Responsibilities	Analysis, Reporting, Feedback and Change Processes and Responsibilities
Changes in % of households who are able to meet minimum nutritional requirements (disaggregated by type of household, season, location)	Per cent of households with food security under average seasonal conditions at start of project – *estimated at 40% from 2005* survey	Sample household nutrition surveys: baseline, mid-term, project completion, three years after completion	Nutrition survey to be included in household survey Nutritionist with M&E experience to provide specialist input	Household survey information, PME, Annual monitoring survey, and field observations Yearly workshop with key stakeholders on food security
…..				

Step 1. Identifying Information Needs and Indicators

Identify useful indicators and other information needs for which you will need to collect data. Only data that help answer your questions with regards to the indicator are necessary. This helps avoid collecting information that is difficult to use to guide the project strategy and operations.

Step 2. Knowing What Baseline Information You Need

Many baseline studies suffer from information overload and lack of use. When deciding whether you need to collect baseline data for a particular performance question, ask yourself if you need to compare information to be able to answer the question. If not, or if information already exists, then you will not need to collect baseline data.

Step 3. Selecting Which Data Collection Methods to Use, by Whom and How Often

Once you have decided what information is needed and what indicators will be used, you need to decide which methods will be used for gathering the data. You have many options: methods that are more qualitative or more quantitative, more or less participatory, and more or less resource intensive. Each will provide information of varying degrees of accuracy and reliability.

Deciding which methods to use requires balancing these different factors. When you examine the consequences of a particular performance question or indicator, you may need to change it if it is impractical or too expensive. This includes looking at who will be using the method and how often it will be applied. For example, if you have no existing capacity to use your preferred method, you need to plan training – or choose another method if you have no resources for this.

Frequency of collection also needs to be established. This will vary per question and indicator. If data for one critical indicator needs to be collected often, then you may need to reduce the frequency of another less important indicator or delete it altogether.

Step 4. Identifying the Necessary Practical Support for Information Gathering

For a method to lead to the information you require, you will need to organize the conditions to make it work. These are often forgotten in the focus on identification of indicators but are critical to success. For each method, consider if and how you need to:
- develop forms to record data;
- develop forms, filing systems and databases for collating and storing information;
- train staff, partners or community members who will be involved;
- check and validate data;
- organize external M&E or research expertise that may be needed;
- agree on responsibilities for different tasks;
- ensure everyone has sufficient financial resources and equipment.

Step 5. Organizing Analysis, Feedback and Change

In the rush to get out and start collecting data, many M&E units pay insufficient attention to the process of *using* the information for analysis and directing changes in the project. To make sure that data will be used – and not just collected – think about how you will organize the analysis of information for each performance question. Sometimes a performance question cannot be answered without prior analysis of several bits of information. Who will do it? When will it happen? Also consider what form information should be in so that it can be used by different stakeholders. For example, will it be useful to present information visually, in graphs or maps? Or do you need to organize several community meetings to get more feedback on the initial analysis of the information? Most importantly, consider how the generated information can be used to check progress and make improvements as the project proceeds.