To set the stage for the development of an effective monitoring and evaluation plan, it is necessary to determine what planners hope to achieve through the project, how resources and activities will be used to meet project goals and objectives, and the ways in which monitoring and evaluation will be used to enhance the project's capacity to accomplish these and other aims. A project task manager who sets in motion a well-organized M&E system will often find that system providing the multiplier benefit of sharpened objectives, better articulated assumptions, and greater clarity in project staff’s understanding of the project.

**Pre-Design Tasks**

The clarification of nutrition project goals and objectives presupposes a general understanding of malnutrition problems and their causes in the targeted geographic areas. This information, often collected through surveys, may be supplemented with secondary data collection, focus group sessions, and interviews designed to identify the constraints and resistance points that the project will need to overcome. Examples of positive deviance, i.e. households who have found means of improving nutritional levels despite prevailing social or economic constraints, may also be studied to inform project design. Although not technically part of the M&E process, this preparatory information-gathering and synthesis will lead to the development of appropriate inputs and activities as well as the establishment of realistic objectives. These steps, in turn, will permit identification of specific indicators of project efficiency or effectiveness that are essential for a properly functioning M&E system.

**Clarifying Project Goals and Objectives**

Whether one is developing an M&E plan during the design phase of a project, establishing a system after implementation has begun, or evaluating an ongoing project, the clarification of goals and objectives is es-
sential. Monitoring and evaluation staff should never assume that project goals and objectives are clear or realistic, even if a project has been implemented for years. Additionally, while some goals and objectives remain constant throughout the life of a project, others may evolve or need to be redefined periodically. In practice, goals and objectives often need to be clarified or sharpened in response to the requirements of an M&E system.

To establish or clarify goals and objectives, which provide the primary focal points for monitoring and evaluation efforts, it is important to be able to differentiate between the two concepts and understand how they are used in project planning and M&E.

**Goals** are the broad aims of the project, the significant, longer-term changes that planners expect to occur in people’s lives. The reduction of severe protein-energy malnutrition, the improvement of childcare practices among young mothers, the enhancement of food security in single parent households, and the significant reduction of iodine deficiency disorders are all examples of project goals. Because goals do not specify concrete expectations for achievement or the criteria which will be used to measure project success, it is necessary to break down goals into objectives and, in turn, activities (outputs) which will contribute to achieving these objectives.

**Objectives** are operationalized goals which specify the results and the level of change expected. Objectives allow a comparison of what is eventually accomplished in the project with what designers had originally set out to achieve. In order to be useful for M&E, objectives should adhere to the following key criteria:

These guidelines for developing clear, useful objectives have been applied to the following nutrition and nutrition-related project examples. As illustrated, it may be useful to specify not only impact objectives, but also the outcomes and/or outputs necessary to achieve them.
GOAL 1: Reduce malnutrition in children under two years of age

- Objective 1.1: Reduce the prevalence of wasting (WHZ < 2) in children under two years from 30% to 10% in five years
- “Required Outcome” 1.1.1: Increase the percent of infants, aged 6 months to 9 months, who receive complementary foods (in addition to breast milk) from 20% to 80% in five years
• Objective 1.2: Reduce the prevalence of low birth weight infants (< 2,500 g) from 190 per 1,000 to 130 per 1,000 in five years
  • “Required Outcome” 1.2.1: Increase the average daily caloric intake of pregnant women from 1800 to 2100 calories within this time period
  • “Required Output” 1: Provide daily calorie-dense food supplement to 90% of pregnant women with BMI < 18.5
  • “Required Output” 2: Provide nutrition counseling messages on the importance of increased food consumption and rest to 90% of pregnant women

GOAL 2: Significantly reduce vitamin A deficiencies in the target area

• Objective 2.1: Reduce the prevalence of keratomalacia in the area covered by the project by fifty percent (from 20% to 10 %) by the end of the third project year
  • “Required Output” 2.1.1: Increase the coverage of the massive dose vitamin A supplement program from 25% to 75% by the end of the third project year

Mapping the Project

Once the project’s goals and objectives have been established, the focus of M&E turns to the identification of project inputs and outputs and their conceptual linkages to desired outcomes and impacts. A critical step for project planners and M&E design staff is to organize this information logically into a model of the project, using the M&E framework discussed in the overview. While such a model can take the form of a matrix, graph, or set of mathematical equations, a conceptual framework in the form of a diagram or map works particularly well for nutrition projects.  

8. Such a conceptual framework is sometimes referred to as a dynamic model, a cause-and-effect model, or an input-output model.
To initiate this process, a list of the project’s main activities should be compiled. In the simplified nutrition counseling project that is modeled above, the provision of nutrition information to target families is the project’s primary activity. All of the project resources required to generate this activity, i.e., the design, production and delivery of educational materials, and the in-service training of community workers, should be listed under the input column. It should be noted that these inputs may themselves be processes which in some projects should be carried out sequentially. Where this is the case, the conceptual framework should be accompanied by a flow chart indicating the sequence and timing of these input processes. Table 2.1 illustrates an input process which might
Table 2.1 Using a Two-Bar Gantt Chart to Plan and Monitor Main Phases in a Salt Iodization Program*

<table>
<thead>
<tr>
<th>Phase</th>
<th>1996</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>Revised (weeks)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Iodine Deficiency Disorder Prevalence Map</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Disaggregated Tables (Amount &amp; Type of Salt Consumed)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Consensus Supporting Advocacy and Mobilization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Legislation Passed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Quality Standards Established</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Monitoring Plan Designed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Training of Government and Factory Staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Plant Iodization Equipment Installed and Tested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Marketing Plan Implemented</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Iodized Salt Made Available in Markets</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
<tr>
<td>Factory and Community-based Monitoring Initiated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>Completed</td>
</tr>
</tbody>
</table>

Note: Column headings indicate year and quarter.
*A monitoring system for a salt iodization project might include the following: internal (factory level) quality assurance; external physical inspection of salt using rapid test kit for presence or absence of iodine and rough levels or using titration method through a laboratory for accurate levels in parts per million; examination of factory production and distribution records; community level testing through schools; and examination of individuals in schools or health centers for clinical signs of IDD.

Source: Adapted from Valadez & Bamberger (1994).
take place in a salt iodization project. Next to the inputs one should specify any inherent assumptions or expectations about the quality and effectiveness of the inputs themselves that may influence the success of project activities. In the example used here, one such assumption is that community nutrition workers (CNWs) will be motivated to incorporate the specified messages into their work with the community. By identifying and then monitoring the assumptions on which project success rests (both for inputs and outputs), managers can more easily pinpoint and fix faulty links in the process.

Moving further to the right on the map, the project’s services to be delivered are listed as outputs along with their assumptions. Ideally, output assumptions are derived from pre-project research on local attitudes, and the population’s motivation and ability to participate in the project and make behavioral changes. If such research has been well designed and implemented, it will inform project design and reduce the likelihood of unmet output assumptions.

The flow of outputs leads, in turn, to the intermediate outcomes and final impacts that the project is expected to achieve. Typically in nutrition projects, the outcomes will be stated as behavioral changes while impacts will be stated as changes in nutritional status. Often outcomes and impacts are derived directly from the objectives of the project. As indicated earlier, however, not all interventions will have intermediate outcomes. This is particularly true in the cases of Vitamin A supplementation and some cases of on-site feeding where service delivery—the output—should, assuming sound design, lead directly to the desired impact with no intermediary step necessary. In contrast, such intermediate actions or

9. Developing and pre-testing messages is sometimes referred to in communications projects as formative evaluation. The term “evaluation” used for such pre-project activity and implying assessment of customs, beliefs, and understandings of a population is sometimes confusing. In this manual we limit the use of the word “evaluation” to assessments of project effectiveness.
outcomes are necessary in an iron supplementation program for women (i.e. daily compliance) and in take home supplement activities (i.e. actual consumption by the target woman or child)\textsuperscript{10}.

Finally, long-term benefits should be listed in the right-hand column even though these are not usually assessed as part of project M&E.

This conceptual framework is fully compatible with the logical framework (log frame) model used by many development agencies. In that model, the goals to be achieved, the project purpose (i.e., steps to achieving the goals), outputs and inputs create the vertical structure of the log frame while a narrative summary, objectively verifiable indicators of whether the goals, purpose, outputs or inputs have been achieved, means of verifying the indicator and important assumptions provide the horizontal. This grid structure assists planners to design each step of the program model, beginning with the desired impact and then working backward through each step needed to achieve it.

While the log frame is a comprehensive tool for organizing project details, it is much more complicated to use and explain to stakeholders than the conceptual framework. The conceptual framework offers a useful and easily interpreted method for organizing a project.

Although this discussion has progressed through the framework from left to right, it should be clear from this discussion that the process of sound

\textsuperscript{10} This nutrition counseling example assumes a “behavioral change communications” (BCC) project which seeks to change a specific identified set of sub-optimal behaviors, as opposed to more generalized “nutrition education” which seeks to provide information to recipients, often on a broad array of subjects, but without specified behavioral change objectives. An M&E system for a BCC activity would identify as outcomes the specific behaviors to be changed, leading, in the impact column, to particular nutritional status improvement expected as a result. In the case of a broader based nutrition education project without specified behavioral change objectives, an M&E system would be limited to assessing inputs and outputs, and then assessing whether knowledge had increased as a result (an output assumption).
project design should move in the opposite direction, i.e., specification of objectives (impacts and sometimes outcomes), followed by specification of the goods or service delivery (outputs) necessary to achieve these objectives, followed by specification of the inputs necessary to bring about the outputs.

**Determining Information Needs**

**What needs to be included in the M&E system?**

Now that each component of the project has been identified, the framework forms the basis for a project's M&E plan and can be used to ensure that all the essential components of the project are covered. (We shall see, in Section 9, that the conceptual framework can be revisited at the point of analysis to identify weak links inhibiting project effectiveness). It is generally not practical or feasible, however, to monitor and/or evaluate every detail that appears on the framework. Rather, it is necessary to prioritize information needs, decide which pieces of the framework should be studied on an ongoing basis, which can be left unchecked or checked only occasionally unless a problem arises, and what questions can be better answered through the use of special studies.

In designing a monitoring and evaluation system there are often difficult choices to make in deciding which indicators ought to be regularly monitored as opposed to being less frequently evaluated. Does it make sense, for example, to include changes in practices, an outcome variable in a nutrition education project, in an ongoing monitoring system or only in an evaluation? What about knowledge levels and attitudes that ultimately affect changes in practices?

In such cases there may be tradeoffs between a desire to have such information on an ongoing basis in order to make adjustments in the inputs as necessary, and the burden that such ongoing data collection may place on already overworked local level staff. Both ease of collection and ongoing need for the data are likely to be prime criteria in making
such decisions. Where data are both necessary and difficult to collect internally on a regular basis, a contract with a local consulting firm, a nutrition institute or a university may be the answer.

Once decisions are made on what information needs to be collected, both monitoring and evaluation plans need to be developed. Each should specify tasks to be undertaken, individuals responsible, and expected timing (including, where appropriate, duration and expected starting and completion dates). Annex 3 provides a list of tasks that might be included in such plans. The evaluation plan might well utilize the Gantt Chart discussed earlier in this section.

**What information is better collected and analyzed in special studies?**

Questions often arise in a project that are best answered through special studies (sometimes referred to in the M&E literature as diagnostic studies) rather than through routine monitoring and evaluation. Besides providing very specific information, special studies offer project staff several important advantages. First, it is possible to hire experts who specialize in the task at hand (e.g. cost-effectiveness analysis, assessment of nutrition communication, female education, or participatory assessment techniques). Second, by relegating sub-tasks to special studies, particularly the more difficult or time consuming ones, the M&E system can be a more manageable undertaking for project staff. Finally, if the collection and analysis of data are divided into smaller pieces, quality control is often easier to maintain.

Special studies can be closely linked with M&E and included as part of the overall assessment plan, or they can be separate. Below are various types of studies which have been employed in nutrition projects in conjunction with monitoring and evaluation.

- **Disaggregation studies**: As will be discussed in Section 3 (Designing a Monitoring System), disaggregated information on at-risk groups (e.g. girls, religious or ethnic minorities, or female-headed households) and non-participants can be extremely important for improving target-
ing and for tailoring project inputs and implementation to meet the needs of subsets of the population.

- **Longitudinal studies**: A second approach to studying special at-risk groups involves longitudinal data collection on a sample of individuals from particular population subgroups. This strategy was used successfully by the first Tamil Nadu Integrated Nutrition Project (TINP I) in India (see the Field Insight below). High-risk groups to be tracked may include groups with potentially high rates of non-participation (e.g. time-constrained female-headed households, those living at some distance from the service site, or low caste or minority religion households) or those who are less likely to be able to benefit from project inputs (e.g. extremely food insecure households).

- **Program constraints assessment**: At some point during project implementation, and particularly if M&E demonstrate that implementation is not running smoothly, it may be useful to carry out a participatory, qualitative stock-taking of the project. In this special study, constraints inhibiting project effectiveness are identified and the information organized to permit the identification of technical, policy, research, and training means of addressing them\textsuperscript{11}.

- **Operations Research**: In order to address a particular implementation problem, outside institutions are sometimes contracted to carry out relevant operations research in project areas. If, for example, project monitoring reveals unusual resistance among mothers with respect to caring practices, operations research might test a nutritional message targeting mother-in-laws and measure its effect on the motivation and ability of mothers to improve caring practices. While not formally a part of M&E, such operations research is often triggered by information from project monitoring and is closely associated.

\textsuperscript{11} Given the emerging importance of this methodological tool, the Program Constraints Assessment (PCA) is described further in Annex 1. See also Levinson et al., *Nutrition Program Constraints Assessment: Gauteng Province, South Africa* for more information on this type of study.
• **Qualitative studies:** There may be important aspects of a project which are not amenable to quantification and cannot be easily included into either ongoing monitoring or periodic evaluations. These could include the extent and quality of community mobilization and community participation, attitudes about complementary feeding practices, job satisfaction of field workers, and intra-household resource allocation. It may be easier to study such issues using qualitative research methods such as Participatory Rural Appraisal\(^\text{12}\) (PRA), Rapid Rural Assessment (RRA)\(^\text{13}\), focus groups, or Knowledge, Attitudes and Practice (KAP) surveys\(^\text{14}\). Conducting such studies require specialized training.

Once goals and objectives are clearly specified, a conceptual framework firmly established, and initial decisions made on those indicators which best lend themselves to ongoing monitoring, periodic evaluation or special studies, it is possible to begin designing each of these systems. Section 3 discusses design of the monitoring system.

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12. PRA enlists people from the project area to appraise local conditions, identify development constraints and provide strategies to address them adequately. It stresses the important insights community members can bring to a project if given the opportunity.

13. RRA involves community members in a series of techniques including developing chronologies of local events; making case studies of people or situations; mapping of the area; and using ranking and scoring methods. These techniques can provide a wide range of results quickly and accurately. In nutrition programs, RRA can be useful in linking factors influencing nutritional status unique to the project area. Such qualitative data can usefully supplement and contextualize the quantitative data more regularly collected by M&E systems.

14. KAP surveys are administered to assess knowledge, attitudes and practices related to specific topics. Nutrition related topics include knowledge of which foods contain vitamin A, attitudes toward introduction of complementary foods, and feeding practices when children are ill. KAP surveys can provide valuable information in assessing the needs of communities and determining whether messages are being understood.