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USAID'S INFANT & YOUNG CHILD NUTRITION PROJECT

Nutritional Impact Assessment Tool

A TOOL FOR MAXIMIZING THE POSITIVE IMPACTS OF AGRICULTURAL INTERVENTIONS
ON NUTRITIONALLY VULNERABLE AND FOOD INSECURE POPULATIONS

GUIDANCE

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IYCN USAID's Infant
& Young Child
Nutrition Project

About the Infant & Young Child Nutrition Project

The IYCN Project is the flagship project on infant and young child nutrition of the United States Agency for International Development (USAID). Begun in 2006, the five-year project aims to improve nutrition for mothers, infants, and young children and prevent the transmission of HIV to infants and children. IYCN builds on 25 years of USAID leadership in maternal, infant, and young child nutrition. Our focus is on proven interventions that are effective during pregnancy through the first two years of life.

The Infant & Young Child Nutrition Project is funded by the United States Agency for International Development. The project is led by PATH and includes three partners: CARE, The Manoff Group, and University Research Co., LLC. For more information, please contact info@iycn.org or visit www.iycn.org.

For more information

Please visit iycn.org/agriculture for additional IYCN resources developed to help agriculture project designers achieve improved nutrition and food security for women and children around the world.

- Achieving Nutritional Impact and Food Security through Agriculture (fact sheet)
- Nutrition and Food Security Impacts of Agriculture Projects: A Review of Experience
- Integrating Household Nutrition and Food Security Objectives into Proposed Agriculture Projects: Illustrative Guidance

Contact info@iycn.org with questions about using the tool.

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Nutritional Impact Assessment Tool

A tool for maximizing the positive impacts of agricultural interventions on nutritionally vulnerable and food insecure populations



Introduction to the Nutritional Impact Assessment Tool

What is it?

The PATH-led Infant & Young Child Nutrition (IYCN) Project has developed the Nutritional Impact Assessment Tool for project designers to use during the design phase of agricultural projects. Much as environmental and gender impact assessments are now standard practice in project planning to prompt consideration of the project’s likely impacts in those areas, a nutritional impact assessment prompts consideration of a project’s impacts on the nutrition of vulnerable groups.



Who should use it?

The steps of the tool are:

Step 1:	List project objectives and activities.	Outlines the objectives of the project, and the activities that are expected to achieve the objectives.
Step 2:	Define food insecure population groups.	Identifies groups within the project area that are more vulnerable to potential negative impacts due to current food insecurity.*
Step 3:	Determine the nutritional status of nutritionally vulnerable groups.	Describes current levels of nutrition indicators for girls/women of reproductive age (15–44 years) and children younger than 2 (or younger than 5 if data are not available for children younger than 2) within each food insecure group identified. These groups are usually the most nutritionally vulnerable in a population.
Step 4:	Create alternative approaches.	Describes one alternative approach (sets of activities) for achieving project objectives, as well as a “do nothing” approach (what the situation would be over the same period of time if no activities are implemented).
Step 5:	Estimate expected outcomes.	Compares estimated nutritional impacts on vulnerable groups within food insecure groups across the three approaches: proposed, alternative, and “do nothing.”
Step 6:	Modify the approach as needed.	Enables modifications to proposed activities to offset potential negative nutritional impacts, or to choose an alternative approach that meets the project objectives and increases the nutritional impacts.
Step 7:	Assess alternative approaches.	Summarizes the selected approach, and provides a space for designers to justify selecting an approach even if it is not the approach that yields the greatest nutritional impacts.
Step 8:	Design a mitigation plan.	Establishes nutritional or food security indicators to be monitored during the project, with trigger levels for implementing a mitigation plan, and develops the mitigation plan.
Step 9:	Develop a review plan.	Provides a mechanism for external review, incorporation of feedback from the review, and final approval.

* See glossary for definitions.

What is the purpose?

The Nutritional Impact Assessment Tool provides a simple process, guiding designers to collect existing data on nutritionally vulnerable and food insecure groups in their project areas. The tool further operationalizes a process for considering the nutritional and food security impacts of proposed activities on these groups, and helps designers to develop alternative sets of activities as well as a “do nothing” alternative. The “do nothing” approach conveys what the situation in the project area would be over the same period of time if no activities took place. Program designers can use the remaining steps in the tool to choose the approach with a neutral or positive impact on nutrition and food security, and/or to develop a mitigation plan for a project’s unforeseen consequences.

The tool encourages a formal, independent review of the assessment and mitigation plan, which can improve the rigor of the data collection and analysis and establish ownership among stakeholders beyond the project designers and implementers.

Who can use the tool?

The tool is intended primarily for agricultural, food security, and livelihoods project designers. It provides an opportunity to link with nutrition and health practitioners and planners as well as academics and policymakers to strengthen assessments, protect nutrition and food security through project design, and develop mitigation plans that respond to unforeseen negative impacts.

Why is the tool necessary?

Decades of project evaluations and research have shown that agricultural programs that focus on increasing production, developing value chains and high-value crops, and increasing incomes do not necessarily have positive nutritional and food security impacts on vulnerable populations. Sometimes the impacts are even negative. The following principles, which are the product of an extensive review of nutritional and food security impacts of agricultural interventions, can help agricultural project designers develop activities that do have positive impacts and avoid those that may have negative ones.

Achieving food security

The following principles can help agricultural projects to be more effective in promoting household food security for vulnerable populations:

1. *Give priority to agricultural activities that generate employment.* Increasing the employment of unemployed and underemployed population groups almost always translates into improved food security.
2. *Carefully watch the effect on food prices.* Policies or interventions that affect food prices have an impact on food security; how much usually depends on whether poor households are net sellers or net purchasers of those commodities. Lower prices are a boon for net purchasers but can hurt net sellers; higher prices help net sellers but cut into the incomes of net purchasers.
3. *Be particularly careful with projects that promote cash-crop production.* Contrary to conventional wisdom, the introduction of cash crops frequently has a negative effect on household food security. Achieving positive effects often depends on whether the land and labor used is in surplus and on the variability in the supply prices of basic food crops.

4. *Encourage small-scale agricultural processes and beware of projects that involve labor-displacing mechanization.* Agricultural interventions that displace labor through large-scale mechanization are more likely to negatively affect food security.
5. *Increase production of food eaten by at-risk population groups.* The poor tend to disproportionately consume specific foods—often less-desirable staple crops available at a low price. When their production decreases, poor households must pay more for those foods, or may be forced to consume more expensive crops.
6. *Involve women.* Improvements in women’s income are more likely to translate into improved food security than are improvements in men’s income. However, activities that target women’s income must balance the time required for child and family care.

Maximizing nutritional impact

Breaking the cross-generational cycle of malnutrition requires a focus on the first 1,000 days of life, from pregnancy through 23 months (2 years). Studies show that preventing malnutrition during this brief period has a lasting impact on health and productivity. To maximize positive nutritional impact on vulnerable groups during this critical window of opportunity, projects can:

1. *Integrate nutrition counseling.* Including nutrition counseling through agricultural extension can be highly useful, particularly when women are counseled.
2. *Incorporate home gardens.* Women are usually responsible for home gardens, and therefore, have greater control over household food consumption decisions than their husbands.
3. *Introduce micronutrient-rich crop varieties.* Agricultural projects that utilize micronutrient-rich plant varieties have major potential for ensuring needed nutrients and improving nutritional well being.
4. *Ensure that vulnerable household members consume the foods produced.* Even when a household has access to adequate food, cultural norms sometimes prevent the consumption of particular foods.
5. *Support agricultural tasks performed by women.* These tasks include weeding, harvesting, processing, and preservation. In general, nutritional benefits increase when women can strike a balance between the time they give to agricultural tasks and the time they give to child and family care.

Avoiding harm

No mother, child, or other vulnerable person should be harmed by efforts to improve agricultural production, but in some cases, projects can have unintended negative impacts on the food security or nutritional status of at-risk populations. Here’s why:

- *Smallholders may not be able to participate in improvements.* An analysis of “green revolution” effects on small farmers in Uganda found that while increased production on small farms more frequently translated into improved food security, most small farmers lacked the means to use new technologies and missed out on the economic gains enjoyed by the rest of the farming community.¹
- *Mechanization may disproportionately favor larger farms.* Evidence from Bangladesh, the Philippines, and West Java indicated that introducing tillers for rice production displaced labor and benefited larger farmers at the expense of smaller producers.²⁻⁴
- *Benefits of price supports can be unequally distributed.* In Honduras, price supports for maize benefited larger, land-owning families, while smaller, net-purchasing farmers suffered from the higher prices. Similarly, sugar price supports in Jamaica increased employment, but the higher price of consumption outweighed the economic benefits of increased employment.^{5,6}

- *Without intentional support, the landless may not benefit.* A project that introduced high-value crops in northwest Bangladesh failed to have any positive effect on the food security of landless laboring families because local landholdings were too small to allow the families to hire significant additional labor. Inadequate local electric power also prevented processing from taking place.⁷
- *Time or physical constraints can limit women's ability to feed their children properly.* Work that requires mothers to be away from home for long periods of time is associated with poorer nutritional status of their children.⁸

When to use the tool?

The Nutritional Impact Assessment Tool is designed to fit into the project planning phase, after designers and other stakeholders have completed an initial situation analysis, agreed upon project goals and objectives, and begun planning specific activities. Gathering the data needed to complete the assessment in conjunction with any initial situation analysis conducted for project planning may be helpful.

The assessment cannot be completed until project goals, objectives, and specific activities are agreed upon, at least in preliminary form. At this time, designers are typically gathering targeted information to fill gaps in existing data, test assumptions, and ensure effectiveness of specific activities in reaching objectives and goals. Waiting until procurement and hiring have already begun, on the other hand, would make modifying the project design in response to the assessment difficult.

How long does it take to complete the assessment?

Completing the assessment requires data-gathering to identify food insecure groups in the project area, to describe the nutritional status of girls/women and children younger than 2 years (or 5 years) of age, and to compare the nutritional status of these groups to the general population.

After obtaining the data, Steps 1 through 8 can be completed in one to two days. An ideal approach is to convene a one-day workshop for the participation of the design team to complete Steps 1 through 7 and achieve consensus on the main elements of the mitigation plan (Step 8). For this approach, workshop preparation would require approximately one day, and writing of the mitigation plan would require another day following the workshop. The design team should include expertise in nutrition, health, and gender, with a livelihoods specialist if possible.

Once the assessment and mitigation plan are complete, the tool requires a formal review process. The time required for this review will depend on how quickly reviewers return their comments and on the extent of any modifications that reviewers may require.

Where can I find the data I need to complete the assessment?

To be useful, data should be disaggregated to a level that is meaningful for the specific project area. Because the sample size used for national surveys usually does not allow individual estimates for areas smaller than the largest sub-national regions or largest administrative units, obtaining these disaggregated data can be difficult for all but the largest projects. Smaller surveys conducted by nongovernmental organizations (NGOs) or for local projects in the same project area or nearby may provide the most relevant and useful information. An important first step to obtaining this type of data

is to inventory active and completed projects from the project or nearby areas and local NGO activities to determine if they can provide useful food security and/or nutrition data. When no local data can be found, a rapid assessment will need to be conducted.

Data on food insecure groups in the project area can be found in bilateral and multilateral agency data, such as the United States Agency for International Development's (USAID) FEWS NET (Famine Early Warning Systems Network), or food security assessments from the Food and Agriculture Organization or the World Food Programme (see additional resources on pages 13 and 14). The World Bank Living Standards Measurements Surveys often contain disaggregated data that can be useful for this step. NGOs or academic organizations may have previously applied methods for measuring food insecurity at the household level that also identified food insecure groups within larger populations. Such methods include the Household Economy Approach and the Household Hunger Index with the Household Dietary Diversity Scale. Any of these methods may also contain information on the nutritional status of vulnerable groups (women and children less than 2 or 5 years of age).

Data on the nutritional status of women and children younger than 2 (or 5) years can be found from national Demographic and Health Surveys, conducted every four years in most countries; from other national surveys, such as the United Nations Children's Fund Multiple Indicator Cluster Survey or national nutrition surveys conducted by national governments; or from other surveys associated with academic research or NGO or multilateral projects. Some countries also have famine warning systems in place that may gather nutrition data regularly.

Post-emergency assessment and monitoring data may exist if the program is being designed in an area of chronic or recurring drought, flooding, conflict, or persistent food insecurity that occasionally contributes to high levels of acute malnutrition.

Obtaining appropriate data is often the most difficult step of the assessment. Food insecurity data specific to the project area may not be available, and even when it is, nutritional data specific to the food insecure groups in the project area may not exist. In these circumstances, the assessor will need to make the best judgment as to which population groups in the project area are most likely to be food insecure, and/or to apply the most appropriate estimates of nutritional status to these groups.

For more information on resources for improving the nutrition of vulnerable groups, see the last section of these guidelines.

Instructions for completing a nutritional impact assessment

STEP 1 List project objectives and activities

List the stated objectives of the project, along with planned activities to achieve the objectives. The activities leading to each objective are also referred to as “approaches” in Steps 4 through 7. For complex projects, a separate nutritional impact assessment may be necessary for each component.

STEP 2 Define food insecure population groups

Within the population targeted by the project, identify the groups most likely to be food insecure.

The specific demographic groups most prone to food insecurity vary from country to country (and sometimes even within a country), but broad functional groups likely to be food insecure may include:

- Small landowning households.
- Households selling labor, including landless households.
- Female- or child-headed households.
- Socially excluded households (ethnicity, caste, occupation).
- Households whose head is chronically ill.
- Households in the lowest socioeconomic (or income) quintiles.
- Households located in drought-prone regions or other fragile agro-climatic regions.

Also in this step, define the general population that will be compared with the nutritionally vulnerable and food insecure groups. Is it the national population, the rural population, the general population in the project area? To some extent, data availability may determine the definition of the general population.

Note: The general population should be the same for Steps 2 and 3.

STEP 3 Determine the nutritional status of nutritionally vulnerable groups

Nutrition data that can be used for this assessment include existing but consistent and disaggregated data on any of the following indicators:

- Anthropometric data; i.e., weight for age (underweight), height for age (stunting), and/or weight for height (wasting) data for children (data from children younger than 2 years are preferable, but less than 5 years is acceptable as well). Mid-upper arm circumference (MUAC) is increasingly used to screen populations for acute malnutrition (wasting) at levels requiring emergency intervention. It is a less desirable indicator for this assessment, but may be used if other anthropometric data are not available.
- Caloric intake data for children younger than 2 (or 5) years of age and/or for girls/women of reproductive age relative to recommended daily allowances.
- Dietary diversity scores for these same groups (see FANTA and knowledge, practices, and coverage resources on page 13).
- Vitamin A or iron status relative to the standards for children and/or girls/women of reproductive age.

Using existing data, identify three nutrition indicators for children and three for girls/women of reproductive age in the general population, as defined in Step 2. As data allow, estimate these same indicators for children and girls/women in each food insecure population identified in Step 3. Step 3 provides separate tables to compare these nutrition indicators for three food insecure groups with the defined general population.

Note: The accuracy of decisions guided by this tool depends on how representative and comprehensive are the estimates for nutritional status of the food insecure groups.

STEP 4 Create alternative approaches

This step involves first describing the proposed activities that will achieve project objectives, called the “proposed approach,” and then proposing two alternatives. The first alternative proposes different (or modified) sets of activities that would satisfy the same project objective. The second alternative is a description of the situation related to project objectives if no activities are undertaken—the “do nothing” approach.

Introducing an irrigated coffee cash crop, for example, might be one of the project activities in the proposed approach that contributes to an objective of increasing household incomes. The alternative approach might introduce rain-fed orange-fleshed sweet potatoes rather than coffee, also to satisfy the project objective to increase household incomes.

STEP 5 Estimate expected outcomes

In this step, the expected impacts of the planned activities will be qualitatively estimated for each of the approaches specified in Step 4. Since these impacts may be inconsistent for different aspects of nutrition (e.g., reduced vegetable availability could increase micronutrient malnutrition without substantially affecting protein-energy undernutrition), and may affect vulnerable groups differently (e.g., food price increases would affect the nutrition and food security of net-selling landholders and migrant pastoralists differently), they should be considered separately for each indicator and for each vulnerable group.

Using the principles for best practices presented in the “Why is the tool necessary?” section about factors that are likely to positively or negatively affect food security and nutrition, estimate the impact of each approach on each child nutrition indicator, then on each maternal nutrition indicator. The IYCN Project’s *Nutrition and Food Security Impacts of Agriculture Projects: A Review of Experience*, from which these principles were taken, provides a more in-depth discussion of the principles, along with examples of experience that supports them. Taking the proposed and alternative approaches described in the previous section as an example, introduction of irrigated coffee production may result in negative impacts on vulnerable groups among the food insecure because: (a) input costs are high, so poorer households may not be able to participate in the scheme, and (b) coffee is inedible, so households would be unable to benefit from consuming some of their own product. The introduction of orange-fleshed sweet potatoes likely would result in positive nutritional impacts since it is both a staple crop and a good source of beta-carotene (a vitamin A precursor), and households would be able to hold back a portion of production for their own consumption.

Estimating the impacts of the “do nothing” approach requires assessing historical trends for nutrition and food security in the project area to understand if the situation is improving, deteriorating, or static.

If trend data are not available, it is safe to assume that the “do nothing” approach would result in no change from the current situation.

Beginning on page 14 at the end of this document is a “decision matrix” to help guide discussion about the expected outcomes of agriculture interventions. It generalizes some of the findings from IYCN’s review of the experience of nutrition and food security impacts of agriculture projects, and should be used as a guide only because each situation requires its own analysis based on the nutritional situation and the mix of activities proposed by the project.

Example of estimating outcomes

A project with the objective of increasing household incomes introduces high-yielding varieties of maize, including the associated agronomic practices, does not explicitly target the poor, and includes no specific nutrition interventions such as a nutrition counseling component. The intervention results in higher maize production with market prices for maize falling as a result. In the project area, two insecure populations have been identified: pastoralists living in highland areas, and lowland households that are net sellers of maize. The nutrition indicators selected for modeling nutritional impacts are underweight and vitamin A deficiency for children younger than 5 years, and body mass index (BMI, a measure of fatness/thinness) for girls/women of reproductive age.

Without explicit targeting of the poor, the lowland households would be unlikely to afford the inputs required to adopt the new varieties, leaving their maize production level unchanged, but with reduced income due to the lower market price for the maize they sell. For these households, lowered income likely would have a negative effect on women’s nutritional status, and a negative, but probably less strong, impact on children’s nutritional status (young children consume far less food than adults, so children’s energy needs would be easier to meet than adults’). Thus, the prevalence of low BMI among women would rise, as may the prevalence of underweight among children. The prevalence of childhood vitamin A deficiency also would increase among these households, because with less overall income, fixed living expenses would consume a greater proportion of total income, leaving them less to spend on higher-value foods.

Among the pastoralist households, the number of childhood underweight probably would decline due to greater food availability (lower price for staple food), as would the prevalence of low BMI among girls/women of reproductive age. Childhood vitamin A deficiency would be expected to remain unchanged, since without a nutrition counseling component, families would be unlikely to use the income freed by the lower maize prices to purchase more micronutrient-rich foods.

With this analysis, the tables in Step 5 would look like the tables on the following page.

Clearly, the proposed approach would result in negative consequences for population group ‘A.’ This approach should be abandoned in favor of another, or modified to eliminate the negative impacts. No intervention should proceed if it is expected to cause negative impacts for nutrition. One modification might be to include targeted credit at a low interest rate for lowland households to ensure that they can participate in the production increase scheme.

Food insecure population group A	
Children <input type="checkbox"/> <2 or <input checked="" type="checkbox"/> <5 (check one)	
underweight →	Indicator 1 Negative
vitamin A status →	Indicator 2 Negative
	Indicator 3
	Overall impact estimate Negative
Girls/women 15–44 years	
BMI →	Indicator 4 Negative
	Indicator 5
	Indicator 6
	Overall impact estimate Negative

← households with small landholdings

Food insecure population group B	
Children <input type="checkbox"/> <2 or <input checked="" type="checkbox"/> <5 (check one)	
underweight →	Indicator 1 Positive
vitamin A status →	Indicator 2 No change
	Indicator 3
	Overall impact estimate No change to positive
Girls/women 15–44 years	
BMI →	Indicator 4 Positive
	Indicator 5
	Indicator 6
	Overall impact estimate Positive

← highland pastoralists

STEP 6**Modify the approach as needed**

This step provides an opportunity to revise project plans to minimize potential negative nutritional impacts on nutritionally vulnerable groups among food insecure populations. If the modeling in Step 5 indicates that an approach will result in negative impacts for children and/or girls/women of reproductive age in food insecure populations, modify the activities and repeat Step 5. This cycle of assessment (Step 5) and modification (Step 6) should continue until no expected negative nutritional impacts remain. Neutral impacts will be considered in Step 7.

While the key purpose of this step is to ensure that approaches produce negative impacts, it also provides an opportunity to introduce activities that can maximize positive impacts. For example, the example described in the box suggests targeted credit for lowland households as a way to prevent negative impacts for that group. The addition of a nutrition counseling component, however, could motivate pastoralist households to use the income freed by lower maize prices to purchase more micronutrient-rich foods, resulting in a positive impact on children's vitamin A status rather than the "no change" impact estimated from the current activities.

STEP 7**Assess alternative approaches**

This step summarizes results of the process so far. Each approach is ranked according to the impacts on nutritionally vulnerable groups among food insecure populations. Only approaches with positive or neutral estimated impacts should be considered in this step.

At this point, the final approach can be chosen. Any of the approaches that reach this step can be selected, but if the final selected approach does not have the greatest expected positive impact on nutrition, a justification should be given for selecting this approach rather than one that would be more desirable in terms of nutritional outcomes. Justifications might include: greater impact of the selected approach for the core objective, lower implementation costs for the selected approach, and so on.

STEP 8**Design a mitigation plan**

Despite careful design and assessments, projects may still have unforeseen negative consequences on nutritionally vulnerable groups within food insecure populations. This step enables designers to develop a plan so that negative impacts, if they arise, can be mitigated during the life of the project rather than identified at the end of the project.

A mitigation plan consists of the following:

1. Nutrition indicators monitored periodically to assess impacts. These may be the same indicators identified in Step 3.
2. A mechanism for monitoring nutrition indicators periodically to catch negative outcomes. This mechanism should contain defined triggers (levels at which the plan will be implemented).
3. Delineated roles and responsibilities (who will monitor indicators and who will decide to implement the mitigation plan).

4. Planned activities to arrest, and if possible, reverse negative nutritional impacts on vulnerable groups.
5. Plans for financing the mitigation plan.

Designers are encouraged to develop a mitigation plan in case negative consequences arise that might not have been predicted during the nutritional impact assessment in Step 5.

Example mitigation plan and process for agricultural project seeking to reduce household food insecurity and malnutrition

A five-year agricultural project in the northwest region of a South Asian country, assisted by a major international development agency, sought to take advantage of new and improved roads and bridges between the region and the capital city by producing high-value crops, in great demand in the capital city. The project design specified that improved household food security, and, in turn, reduced young child malnutrition in functionally landless households would result from increased on-farm employment opportunities and processing of a portion of the production. The project design team included a household food security objective and a nutrition objective: the food security objective aimed to reduce household food insecurity among functionally landless households by 20 percent using an adapted food insecurity scoring system, while the nutrition objective aimed to reduce the prevalence of moderate and severe underweight among children younger than 2 years. Planned project implementation would expand in three phases beginning in years one, three, and four.

Mitigation plan

Nutrition indicators: Household food insecurity scores and underweight among children.

Monitoring mechanism: Semi-annual food insecurity surveys and monthly growth monitoring and promotion data from ten sentinel sites in the project area. Mitigation action will be triggered by two successive six-month assessments revealing an increase of 10 percent or more over baseline in average household food insecurity scores or the percentage of underweight children less than 2 years of age.

Roles and responsibilities: A national university will be contracted to conduct and report on the semi-annual household food security surveys, and the project's monitoring and evaluation officer will compile monthly summaries of Ministry of Health records from the ten growth monitoring and promotion sentinel sites. The Project Director will be responsible for initiating implementation of the mitigation plan, with approval from the Minister of Agriculture and the donor's representative.

Planned activities

1. A rapid situation analysis will determine causes of the unexpected impacts.
2. Stop-gap measures will include temporary food-for-work activities, to strengthen agricultural infrastructure, and the provision of micronutrient-enriched food supplements for severely malnourished young children.

(continued on next page)

Example of mitigation plan (continued from previous page)

3. If inadequate implementation is responsible for the unexpected impacts, possible remedial actions will include re-training, hiring of additional staff, and others.
4. If inappropriate project design is responsible, a workshop will be organized to assess failures and design new approaches.

Financing

Subsequent expansion will be reduced to the extent required to finance remedial measures, including food-for-work and provision of food supplements for children.

STEP 9

Develop a review plan

Indicate the review process for the impact assessment, specifying which groups of stakeholders among partners, implementing organizations, donors, and the host government will sign off on the review, and develop a timeline for each response. The project should not proceed with implementation until all reviewers have approved the nutritional impact assessment.

Glossary

Body mass index (BMI) A ratio of weight corrected for height used to estimate thinness or fatness. It is calculated by weight in kilograms divided by the square of height in meters.

Household food security The state of having at all times physical and economic access to sufficient food for meeting dietary needs for a healthy and productive life.

Green revolution A term that describes the dramatic increase in agricultural production during the latter half of the 20th century, which resulted from development of high-yielding crop varieties, modern agronomic practices (including irrigation), inorganic fertilizers, and chemicals for controlling pests.

Micronutrient A nutrient required in very small amounts (as opposed to energy-yielding macronutrients like protein, fat, and carbohydrates).

Micronutrient malnutrition A physiological deficiency of one or more micronutrients.

MUAC Mid-upper arm circumference: Used to screen for acute malnutrition in children between 6 months and 5 years.

Price support An intervention to increase the price of a commodity or to maintain it at a desired level.

Protein-energy undernutrition A condition resulting from intake of protein and/or energy that is inadequate to meet physiological demands. It encompasses a continuum that progresses from normal status through mild and moderate to severe, and it can be either chronic (stunting) or acute (wasting).

Reproductive age An age range encompassing 15 through 44 years for females.

Stunting Height (or length for infants/children younger than 2 years) less than appropriate for age in comparison with reference standards. An indicator of chronic malnutrition. See the Additional nutrition and food security resources section for details on its measurement and interpretation.

Underweight Weight less than appropriate for age in comparison with reference standards.

Vitamin A deficiency Physiological deficiency of vitamin A.

Vulnerable group A group that lacks capacity to cope with shocks, combined with being at risk of a rapid deterioration in status because of shocks.

Wasting Weight less than appropriate for height in comparison with reference standards. An indicator of acute malnutrition. See the Additional nutrition and food security resources section for details on its measurement and interpretation.

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Additional nutrition and food security resources

Maternal, infant, and young child nutrition resources from the IYCN Project

<http://www.iycn.org/resources.php>

Guiding principles for complementary feeding of the breastfed child (Pan American Health Organization, 2003)

http://www.who.int/child_adolescent_health/documents/a85622/en/index.html

Guiding principles for feeding non-breastfed children 6-24 months of age (World Health Organization, 2005)

http://www.who.int/child_adolescent_health/documents/9241593431/en/

Guidelines on HIV and infant feeding 2010 (World Health Organization)

http://www.who.int/child_adolescent_health/documents/9789241599535/en/index.html

What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions (United Nations Administrative Committee on Coordination Sub-Committee on Nutrition, 2001)

www.unsystem.org/scn/Publications/NPP/npp19.pdf

LINKAGES Facts for Feeding Series

<http://www.linkagesproject.org/publications/index.php?series=5>

Indicators for assessing infant and young child feeding practices (World Health Organization, 2008)

http://www.who.int/child_adolescent_health/documents/9789241596664/en/index.html

Knowledge, practices, and coverage modules (USAID, 2009)

http://www.mchipngo.net/controllers/link.cfc?method=tools_modules_kpc2009

Anthropometric Indicators Measurement Guide (FANTA-2, 2003)

<http://www.fantaproject.org/publications/anthropom.shtml>

Months of Adequate Household Food Provisioning (MAHFP) for Measurement of Household Food Access: Indicator Guide, Version 4 (FANTA-2, 2010)

http://www.fantaproject.org/publications/hdds_mahfp.shtml

Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide, Version 2 (FANTA-2, 2006)

http://www.fantaproject.org/publications/hdds_mahfp.shtml

Dietary Diversity as a Measure of the Micronutrient Adequacy of Women's Diets in Resource-Poor Areas: Results from Five Countries (FANTA-2, 2009)

http://www.fantaproject.org/publications/wddp_countries2009.shtml

SMART (Standardized Monitoring of Assessment of Relief and Transitions) methodology for measuring mortality, nutritional status, and food security in crisis situations

<http://www.smartindicators.org/index.html>

Emergency Food Security Assessment Handbook (EFSA) - second edition (World Food Programme, 2009)

<http://www.wfp.org/content/emergency-food-security-assessment-handbook>

Comprehensive Food Security & Vulnerability Analysis (CFSVA) Guidelines - first edition (World Food Programme, 2009)

<http://www.wfp.org/content/comprehensive-food-security-and-vulnerability-analysis-cfsva-guidelines-first-edition>

FEWS NET (Famine Early Warning Systems Network) (USAID)

<http://www.fews.net/Pages/default.aspx>

Food Security Resources from USAID's Food and Nutrition Technical Assistance II (FANTA-2) Project

<http://www.fantaproject.org/focus/foodsecurity.shtml>

Supplement to the Nutritional Impact Assessment Tool

Decision matrix for estimating expected outcomes (Step 5)

The following table contains a “decision matrix” to assist in estimating the expected outcomes of a proposed agricultural intervention approach. It suggests probable outcomes for nutrition and food security based on the findings of the IYCN Project's *Nutrition and Food Security Impacts of Agriculture Projects: A Review of Experience*.

The outcomes suggested by the decision matrix are generalized and may not necessarily be appropriate for the specific project being proposed. It should not be used without first reading the *Review of Experience* document for a better understanding of the issues involved. The decision matrix is not prescriptive; rather, it is intended as a guide and a “check” for analysis conducted by the assessment team. As such, it may help to stimulate discussion concerning the outcomes expected from the activities being assessed.

Decision matrix for estimating expected outcomes

Intervention	Likely outcome
<p>Cash crop</p> <p>Is the land on which this crop is likely to be grown currently unused or underutilized?</p> <p>..... Yes</p> <p>..... No</p> <p>..... Is the crop which this crop will displace disproportionately consumed by food insecure households?</p> <p>..... No</p>	<p>Positive</p> <p>Negative</p> <p>Neutral</p>
<p>New food crop (or livestock)</p> <p>Is the land on which this crop is likely to be grown currently unused or underutilized?</p> <p>..... Yes</p> <p>..... No</p> <p>..... Is the crop which this crop will displace disproportionately consumed by food insecure households?</p> <p>..... Yes</p> <p>..... How does the nutritional value of the new food crop compare to the traditional crop it will replace?</p> <p>..... Better</p> <p>..... Worse</p> <p>..... Same</p> <p>..... Yes</p> <p>..... How does the market price of the new food crop compare to the traditional crop it will replace?</p> <p>..... More</p> <p>..... Less</p> <p>..... No</p>	<p>Positive</p> <p>Neutral if cost is same; Positive if cost is less</p> <p>Better</p> <p>Worse</p> <p>Same</p> <p>Yes</p> <p>More</p> <p>Less</p> <p>No</p> <p>Positive if cost is same or less; Neutral or Negative if cost is greater</p> <p>Negative</p> <p>Neutral if nutritional value is same; Positive if nutritional value is better</p> <p>Negative</p> <p>Positive if nutritional value is same or better</p> <p>Positive or Neutral</p>

Decision matrix for estimating expected outcomes, continued

<i>Intervention</i>	<i>Likely outcome</i>
<p>New varieties</p> <p>Can food insecure households afford seed and inputs associated with this new variety?</p>	<p>Same</p> <p>How does the nutritional value of the new variety compare with the traditional variety?</p> <p>..... Better Worse Yes No </p> <p>Are food insecure households net sellers of this crop, or do they depend on it for income?</p> <p>..... No </p> <p>Neutral depending on associated production and/or income increases Positive Negative Negative Neutral</p>
<p>Food price intervention</p> <p>Price support</p>	<p>Positive</p> <p>Sellers</p> <p>Do food insecure households tend to be net sellers or net purchasers of the crop to be supported?</p> <p>..... Purchasers Sellers </p> <p>Price control</p> <p>Negative Negative</p> <p>Do food insecure households tend to be net sellers or net purchasers of the crop to be supported?</p> <p>..... Purchasers Purchasers </p> <p>Positive</p>

Decision matrix for estimating expected outcomes, continued

Intervention	Likely outcome
Any intervention	
<ul style="list-style-type: none"> • Employment 	<p>Will the scheme increase employment among un- or under-employed?</p> <p>Yes</p> <p>Will nutrition counseling be provided?</p> <p>Yes</p> <p>No</p> <p>No</p> <p>Neutral to Positive</p> <p>Neutral to Negative</p> <p>Negative</p>
<ul style="list-style-type: none"> • Gender 	<p>Will the scheme reduce employment among un- or under-employed?</p> <p>Yes</p> <p>No</p> <p>Increase</p> <p>Will women need to be away from home for long periods of time (i.e., >4 hours)?</p> <p>Yes</p> <p>Has any facility been arranged for child care (e.g. crèches)?</p> <p>Yes</p> <p>No</p> <p>Negative</p> <p>Positive</p> <p>Neutral</p>
<ul style="list-style-type: none"> • Access 	<p>Can food insecure households afford the inputs necessary to participate in the intervention?</p> <p>Yes</p> <p>Decrease</p> <p>No</p> <p>Positive</p> <p>Negative</p> <p>Positive</p> <p>Neutral or Negative</p>

