Bringing women's and children's nutrition to the forefront of agriculture

USAID'S INFANT & YOUNG CHILD NUTRITION PROJECT

Achieving Nutritional Impact and Food Security through Agriculture

RESOURCES FOR LINKING AGRICULTURE, FOOD SECURITY, AND NUTRITION

PATH/Evelyn Hockstein

Agricultural projects have a profound effect on household food security and nutritional wellbeing. While the majority of agricultural projects result in improved lives and livelihoods, some do just the opposite. Research shows that when projects neglect to consider effects on nutrition and food security in the planning stages, they miss an opportunity to improve nutrition and health outcomes for women, children, and other vulnerable populations.

The US government's "Feed the Future" initiative, along with similar initiatives launched by other nations and multilateral agencies, brings renewed attention to the complex relationships between agriculture, food security, and nutrition, and to measures that strengthen these relationships. This fact sheet summarizes these relationships by offering examples of what works and what does not, serving as a resource for agricultural professionals involved in the design and planning of projects.

Good nutrition—what to consider

Food security, or uninterrupted physical and economic access to sufficient food for dietary needs and a productive and healthy life, is an important prerequisite for improving the nutrition of vulnerable groups such as women and children. However, good nutrition requires more than just having enough to eat. In addition to food security, the following factors contribute to good nutritional outcomes:

- **Essential nutrients in appropriate amounts.** Families need more than just staple foods; they need a mix of foods with the right amounts of essential nutrients required to maintain growth and health.
- **Equitable access to nutritious foods.** All members of a household, including women and children, need access to the nutrients they require. Children, who depend on their caregivers to make sure they stay nourished, need special consideration. Caregivers should understand how to prepare meals and feed children the right amounts of nutritious foods.

A window of opportunity

Malnutrition is an underlying cause of more than one out of every three child deaths in poor countries each year—and a major contributor to the burden of disease worldwide. Productivity losses, poor cognitive development, and increased health care costs in malnourished populations lead to significant economic losses. Yet these consequences are preventable through proven interventions.

Nutritional outcomes in the first 1,000 days of life, from pregnancy to 23 months, strongly influence adult nutritional status. Malnutrition that occurs during this critical window is largely irreversible, but children who stay well-nourished perform better in school and are taller, healthier, and more productive as adults. For every 1 percent increase in height, adults will experience a 4 percent increase in total agricultural wages.[1] Additionally, eliminating anemia has been shown to increase adult productivity by 5 to 17 percent, with the higher increases associated with the heavy manual labor common in agriculture.[2]

- **Knowledge of basic nutrition.** When individuals understand their nutritional needs and the needs of their children, they can make better decisions about how to spend their resources to achieve the best diets possible. Increased knowledge of women's and children's nutritional requirements among heads of households may also enable more equitable distribution of food.
- **Adequate health.** In order to properly utilize nutrients, individuals need to maintain good health. Understanding when to seek care, having access to high-quality health care services, and a healthy environment are all critical to achieving adequate health.

Achieving food security

Food security is a prerequisite for good nutrition. Here are ways that agricultural projects can be more effective in promoting household food security for at-risk populations.

1. **Give priority to agricultural activities that generate employment.** Increasing 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, 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 foods that are eaten by at-risk population groups.** The poor tend to disproportionately consume specific foods—often less-desirable crops. When the production of these crops decreases, poor households must pay more for the foods, or may be forced to consume more expensive crops.

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6. **Involve women.** Improvements in women's income are more likely to translate into improved food security than are improvements in men's income—as long as women have adequate time for child and family care.

Maximizing nutritional impact

Five ways agricultural projects can maximize nutritional impact on vulnerable groups

To maximize positive nutritional impact 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 wellbeing.
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.

Stories of success

- In Bangladesh, an improved vegetable program increased vitamin A consumption, decreased chronic malnutrition by 28 and 43 percentage points among girls and boys, respectively, and improved women's nutrition—all despite failing to produce measurable effects on household income.[3]
- Also in Bangladesh, a poultry production activity that counseled families on the nutritional value of consuming eggs increased egg production and egg consumption among children and women of reproductive age.[4]
- The introduction of orange-fleshed sweet potatoes in Mozambique coupled with nutrition counseling significantly increased vitamin A intake and status among children. The new sweet potato variety accounted for more than one-third of their vitamin A intake.[5]

Avoiding harm

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

1. **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.[6]
2. **Mechanization may disproportionately favor larger farms.** Evidence on tiller introduction for rice production from Bangladesh, the Philippines, and West Java indicates a general displacement of labor and benefits favoring larger farmers at the expense of smaller producers.[7–9]
3. **Benefits of price supports can be unequally distributed.** In Honduras, price supports for maize benefited larger, land-owning families, while smaller farmers who were net purchasers suffered under the higher prices. Similarly, sugar price supports in Jamaica increased employment, but the higher price of consumption outweighed the economic benefits of increased employment.[10,11]
4. **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 hiring of significant additional labor, and inadequate local electric power prevented processing from taking place.[12]
5. **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 for their children.[13]

Designing projects with the greatest benefit

To achieve both food security and a positive nutritional impact through an agricultural project, the following steps should be taken during the project design phase:

- **Be intentional about measuring impacts on food security and nutrition.** Assessing food security and nutritional status prior to an intervention permits targeting of the most vulnerable. Modeling the expected impacts on vulnerable groups at the design phase helps to ensure that they will benefit from the project. Assessment during key points of implementation—including post-intervention—helps improve effectiveness and avoid unintended negative effects.
- **Incorporate household food security and/or nutrition objectives into project design.** This will help ensure that food security and nutrition concerns are addressed. The Infant & Young Child Nutrition (IYCN) Project has developed guidance for project designers seeking to build food security and nutrition objectives into agricultural projects. **Please email info@iycn.org to request the tool.**

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- **Conduct a nutritional impact assessment during the project design phase.** When it is not possible to include nutrition objectives, incorporation of a nutritional impact assessment in the planning process can help to avoid unintended negative impacts. This process leads to more nutrition-friendly programming by identifying vulnerable groups within food insecure populations and estimating potential impacts based on expected shifts in land use, crop prices, food crop availability, and labor utilization. The IYCN Project has created a Nutritional Impact Assessment Tool to help agriculture project designers consider the likely impacts of their interventions on vulnerable populations. **Please email info@iycn.org to request this tool.**

For more information

Please visit **www.iycn.org/agriculture** for additional resources for agriculture project designers:

- 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
- Nutritional Impact Assessment Tool

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References

1. Haddad LJ, Bouis HE. The impact of nutritional status on agricultural productivity: wage evidence from the Philippines. *Oxford Bulletin of Economics and Statistics*. 1991;53(1):45–68.
2. Horton S, Ross J. The economics of iron deficiency. *Food Policy*. 2003;28(1):51–75.
3. Kumar N, Quisumbing AR. *Access, Adoption, and Diffusion: Understanding the Long-term Impacts of Improved Vegetable and Fish Technologies in Bangladesh*. IFPRI Discussion Paper 00995. Washington, DC: International Food Policy Research Institute; 2010.
4. Institute of Nutrition and Food Science, Dhaka University, Tufts University Friedman School of Nutrition Science and Policy. *Bangladesh Integrated Nutrition Project Garden and Poultry Projects: Process and Impact Study*. 2003.
5. Low J, Arimond M, Osman N, Cunguara B, Zano F, Tschirley D. A food-based approach introducing orange-fleshed sweet potatoes increased vitamin A intake and serum retinol concentrations in young children in Mozambique. *Journal of Nutrition*. 2007;137(5):1320–7.
6. Munyonyo R. *'Green Revolution' in Uganda: Potentials and Constraints for Different Categories of Farmers*. Uganda Martyrs University Working Papers. 1998;1(3).
7. Jabbar M, Bhuiyan M, Ban A. Causes and consequences of power tiller utilization in two areas of Bangladesh. In: International Rice Research Institute and Agricultural Development Council. *Consequences of Small-Farm Mechanization*. Manila, Philippines: International Rice Research Institute; 1983.
8. Aguilar A, Camacho E, Generalla A, Moran P, Sison J, Tan Y, Wick J. Consequences of small rice farm mechanization in the Philippines: a summary of preliminary analyses. In: International Rice Research Institute and Agricultural Development Council. *Consequences of Small-Farm Mechanization*. Manila, Philippines: International Rice Research Institute; 1983.
9. Saefudin Y, Siswosumarto H, Bernstein R, SriBagyo A, Lingard J, Wicks J. Consequences of small rice farm mechanization in West Java: a summary of preliminary analyses. In: International Rice Research Institute and Agricultural Development Council. *Consequences of Small-Farm Mechanization*. Manila, Philippines: International Rice Research Institute; 1983.
10. Garcia U Magdalena, Norton RD, Cambar MP, van Haeften R. *Agricultural Development Policies in Honduras: A Consumption Perspective*. Report prepared for the US Department of Agriculture Nutrition Economics Group and the US Agency for International Development Mission to Honduras; 1988.
11. Van Blarcom B. Consumption Effects of Jamaican Sugar and Rice Pricing Policies. Washington, DC: US Department of Agriculture Nutrition Economics Group; 1983.
12. Mirle C. *Predicting the Effects of Crop-Based Agricultural Programs on Household-Level Consumption in Rural Bangladesh: The Case of the Northwest Crop Diversification Program in Aditmari Upazilla, Northwest Bangladesh*. PhD Dissertation. Tufts University Friedman School of Nutrition Science and Policy; 2006.
13. Kulwa KBM, Kinabo JLD, Modest B. Constraints on good child care practices and nutritional status in Dar-es-Salaam, Tanzania. *Food and Nutrition Bulletin*. 2006;27(3):236–44.

ABOUT THE INFANT & YOUNG CHILD NUTRITION PROJECT

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