

Agriculture & Nutrition



CATALYZING INTEGRATION SERIES

Efforts to reduce extreme poverty and achieve the Sustainable Development Goals (SDGs) require an in-depth understanding and reflection of the interconnected nature of people's lives. Development solutions need to be as multi-faceted as the challenges they are designed to address. FHI 360 believes that an intentional, integrated approach to the design, delivery, and evaluation of programs has the potential to make an enduring difference in the lives we are dedicated to serve.

At its core, integration refers to activities in which actors from different sectors deliberately coordinate their work to maximize impact and progress toward common or complementary goals. Integration is most effective when it purposefully leverages opportunities to reach more people, offer better services, reduce inequality, or reduce costs.

FHI 360 has developed a **suite of resources** designed to advance integrated development approaches. Many of these resources also synthesize lessons learned and recommendations from integration across a diverse array of sectors. The *Catalyzing Integration Series* offers a closer look at integration between specific development sectors — including the rationale, evidence of impact, promising practices, key tools, and other technical guidance resources.

BACKGROUND

The nexus of nutrition, poverty, agriculture, and food securityⁱ is a complex web of relationships that needs to be considered when programming for nutritional impact and for agriculture that best serves local community needs. Meeting the nutrition and food security needs of individuals is not a simple endeavor.

The immediate determinants of nutrition status are nutrient intake and health status; however, beneath these, access to nutritious food and health services, clean water and sanitation, and proper care practices for women and children are the main underlying determinants of nutrition. This is all in turn affected by larger trends including the institutional, political, environmental, and socioeconomic settings.²⁻⁵ These underlying determinants are all affected by many sectors, including agriculture.



Malnutrition, as a problem with roots in many different areas, cannot be addressed only with nutritional interventions.

i. Food security is comprised of four dimensions: food availability, stability of food supplies, access to food, and food utilization.¹

If 10 of the best evidence-based nutrition interventions (e.g., folic acid supplementation, exclusive breastfeeding and complementary feeding, management of malnutrition) achieved 90 percent coverage, it is estimated that only 20 percent of the stunting in children would be averted. To address the other 80 percent of children, nutrition-specific and nutrition-sensitive interventions need to be utilized.⁶ In the past decade there has been growing interest from the international community to expand beyond traditional nutrition interventions to include nutrition-specific and nutrition-sensitive programs and policies to better address the complex underlying factors that support malnutrition in many places.^{7, 8, 9}

An impact pathway⁵ illustrating the relationship between agriculture and nutrition has been developed to better understand the ways in which nutrition and agriculture are related (see Figure 1), and to affect change through those relationships. Nutrition and agriculture are linked through:

→ **FOOD PRODUCTION:** Food production is a main pathway through which poor households take in nutrients and ensure food security. A combination of food production for consumption, income, and local food access determines food security for many households. Improving access to nutritious foods by growing them individually, replacing crops that are already grown with varieties that are more nutritious, and improving



nutrition knowledge and behavior change can all affect this pathway.⁵

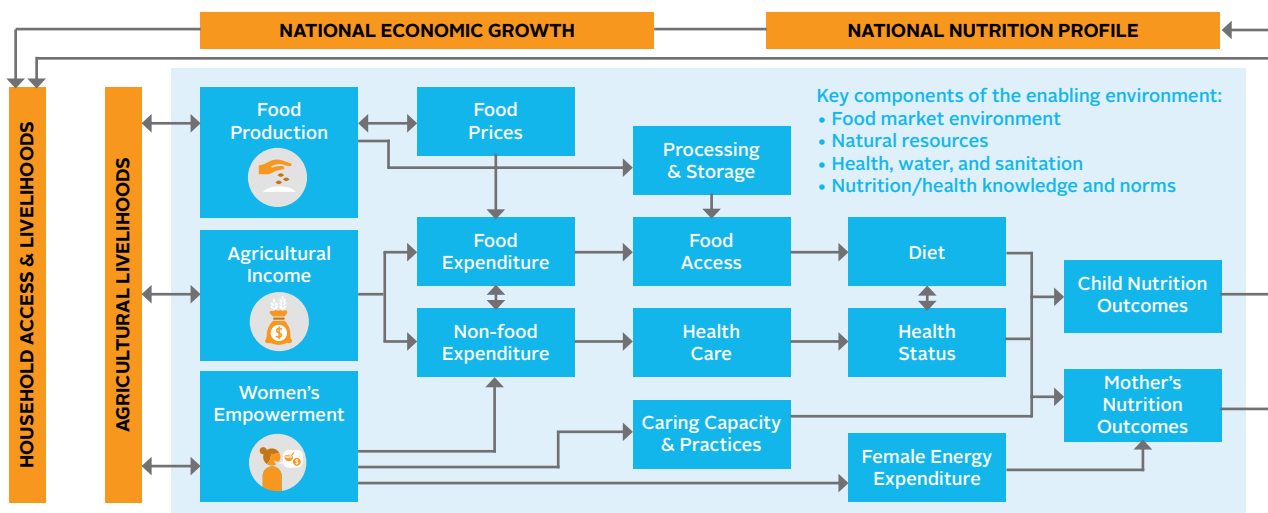
→ **AGRICULTURAL INCOME:** Increasing household income through agriculture can increase the amount of capital that households can access for food and nonfood purchases to support more nutritious and stable diets and healthier lives. The pathway from increased income to improved nutrition is mediated by a number of factors including access to food, who makes purchasing decisions, and access to information on markets. Pushing consumer preferences toward more nutritious foods and ensuring inputs and nutritious foods are available in local markets is often necessary to pair with increased income to have an effect on nutritional outcomes.⁵



→ **WOMEN'S EMPOWERMENT:** This can include a variety of factors, including female decision-making power over things like labor, assets, time, and income. Women's control over income, for example, can increase the amount of money spent on food and health care. Empowerment can affect how women care for their children and the power they have over decisions that affect the nutrition of their children and themselves. Empowerment can also affect what is grown by households and how time and labor burden is distributed across the household, improving outcomes for women and girls.⁵



FIGURE 1
CONCEPTUAL PATHWAYS BETWEEN AGRICULTURE AND NUTRITION



Adapted for FHI360 from Gillespie, Harris, and Kadiyala (2012) and Headey, Chiu, and Kadiyala (2011). Source: Herforth and Harris, 2014.

The Importance of Integrating Agriculture and Nutrition

50%

OVER 50 PERCENT (ESTIMATED) OF THE REDUCTION IN UNDERWEIGHT CHILDREN FROM 1970–1995 IS ATTRIBUTABLE TO IMPROVEMENTS IN WOMEN'S STATUS.¹⁰

7,000

A REVIEW OF OVER 7,000 AGRICULTURAL PROGRAMS FOUND THAT A LARGE MAJORITY DID NOT DEMONSTRATE ANY IMPACT ON IMPROVING DIETS OR NUTRITION—A MISSED OPPORTUNITY.¹³

Increasing the amount of programs that coordinate nutrition and agricultural work can improve nutrient intake and thereby decrease malnutrition-related conditions (e.g., stunting, anemia, and wasting) as well as expand agricultural markets and incomes.

As mentioned above, targeted interventions can address a proportion of worldwide stunting, but a coordinated effort will need to take place to address the multi-sectoral underlying factors influencing nutrition and food security throughout the world. Without integration, many of the gains we hope to make with the SDGs in the next 15 years cannot be achieved and many opportunities will be missed.

It is estimated that over 50 percent of the reduction in underweight children from 1970–1995 is attributable to improvements in women's status;¹⁰ however, many programs do not include a significant gender component or a consideration of how the agricultural services provided will impact the household long-term (e.g., impacts on nutrition or income). Increasing household income, without having a specific nutritional component, often does not translate the economic gains into nutritional gains.^{11,12} A review of over 7,000 agricultural programs found that a large majority did not demonstrate any impact on improving diets or nutrition—a missed opportunity.¹³ The agricultural value chain has many points where disruptions or gaps can prevent any gains in nutrition. For example, if nutritious food is not available at the market or is too expensive, people will not buy and consume it. If there is no place to store or process more nutritious foods that are grown locally, the local community will not reap the benefits of local production. Finally, offering services that are located in the same community does not ensure that connections will be made between services. Placing the burden of integration on a program's clients can hold back the outcomes of that program, and many individuals will not make their own links between activities.¹⁴ Integrating services can address all of these issues.



The Impact of Integrating Agriculture and Nutrition



Nutrition-sensitive agricultural programming increases the amount of nutritional crops grown locally and demanded in local markets

- Adding a nutrition component to agriculture programs can increase the amount of nutrient-dense crops grown by households.¹⁵
- Increasing nutritional knowledge in communities can increase demand for nutritious foods in the market.^{2, 15}
- Integrating nutritional messaging into agricultural programs allows an opportunity for men to support the health and nutrition of their families in decisions that are made jointly at the household level.^{16, 17}
- Including nutritional education for other players in the value-chain—such as producers, agricultural extension agents, and health care professionals—can promote demand and production of nutritious crops.^{2, 7, 16, 18}
- Increasing the number of times an individual is exposed to nutritional messaging, along with increasing the number of household members targeted by those messages, increases uptake of targeted behaviors by the entire household.^{2, 7, 16, 18, 19}



Linking nutrition and agricultural work can increase money spent on the nutrition and food security of households

- Increasing household income alone does not always lead to improved nutritional status; pairing agricultural interventions that increase income with nutrition programming is more likely to have an effect on the food security and nutrition of households.^{7, 11, 20}
- Increased income in an environment with nutrition-sensitive messages can also increase the use of health and water, sanitation, and hygiene (WASH) services and behaviors that support improved nutrition.^{2, 7}
- Linking nutrition messages with improved supply of nutritious food can offset barriers to improved nutrition at the household level, such as intrahousehold distribution.²¹



Increasing female control of agricultural assets and income, along with increased nutritional knowledge, improves nutritional outcomes within families

- Increases in women's income are generally linked to increases in household energy consumption—this effect was most pronounced among the lowest-income groups.¹¹
- Income controlled by women is more frequently used on food and health care for the family, particularly for children.^{5, 22, 23}
- Increasing income in households where women do not have power to control some of that gain often does not result in gains in nutrition.²⁴
- Children of women who control more assets consume more nutritious food on average.¹⁷
- Taking women's workload and time use into consideration when planning programs can also improve time to support child care and other practices supportive of family health and nutrition.²



Improving nutrition can improve income and economic growth long-term

- Stunting at age 2 is associated with a 10 percent higher chance of living in poverty 30 years later.²⁵
- Economic growth of a country can be held back by malnutrition; countries most affected by malnutrition can lose about 2 percent of GDP per year.¹²



Improving dietary diversity has been associated with agricultural diversity and biodiversity

- Nutrition-sensitive agricultural programs that promote food source diversity within households can also support agricultural biodiversity, improving the local natural environment.^{7, 21}
- More diverse household food supply can support the resilience of households to cushion them for climate shocks or other disasters (e.g., drought).²¹

Challenges and Entry Points

Although nutrition and agriculture programs are not always targeting the same individuals, they are often targeting the same households and have similar aims. Coordination and communication between actors in these spaces has improved greatly over the past decade; however, barriers to collective aims still exist and need to be kept in mind to best serve vulnerable groups.



TENSIONS AND CHALLENGES

Evidence and long-term effects

The nature of nutritional outcomes is such that achieving any significant impact can take years. Measuring behaviors and intake can demonstrate that consumption patterns and other actions are improving, but measuring an effect on stunting or malnutrition takes a long time. This difference can mean that programs may have difficulty quantitatively demonstrating impact. In addition, recent reviews have found that many nutrition-sensitive agricultural project evaluations are statistically underpowered to observe impact on nutritional status.²⁶ Consequently, even if programs do have an impact, the evaluations cannot reasonably measure that impact. Although qualitative data can powerfully demonstrate the effects of a program, the overall evidence base is weakened by a lack of quantitative data, limiting what we know about these programs.

Complexity of barriers and systems

The barriers to improved nutritional outcomes through the agriculture-nutrition pathways can be complex and difficult to isolate. Gender, access to markets, macroeconomic shifts, and climate change are all examples of themes that influence impact pathways. Improving knowledge of local nutritious foods will have no effect on nutrition outcomes if, for example, agricultural inputs are not accessible in local markets or the nutritious food is too expensive. Putting further burden on women's time by adding agricultural work can actually have a negative impact on nutrition outcomes where that added work is not accompanied by increased nutritional intake.¹¹ The necessity to view the problem with a systems lensⁱⁱ may prevent some actors from wanting to get involved in this kind of work.

Context-specific considerations

Programs that target nutritional outcomes through the nutrition-agriculture pathway are complex and highly context-specific. This can serve both as a challenge and an entry point. For example, a study in Uganda noted that in order to improve household food security, farmers with large tracts of land needed extension services to improve practices, while farmers with no land needed alternative income-earning opportunities. This study also noted that there was a need for family planning, as population growth adversely affects household food security and nutrition in the region.²⁸ The knowledge that this study provides for programs operating in this region shows pathways through which programs can operate, but it demonstrates that in the same location, different groups may need different services to have similar effects on targeted outcomes. This can complicate implementation, and if detailed formative research is not done, opportunities can be missed or programs can fail. Formative research that demonstrates the needs through different pathways can also serve as an entry point for parties working in nutrition and agriculture to work together.

ii. Systems thinking is a perspective in which methods that aim to describe and develop an understanding of the underlying structure of a system are used to make inferences about the system, to develop programs that work best in the system, and to most effectively affect change.²⁷

ENTRY POINTS AND MODELS FOR INTEGRATION

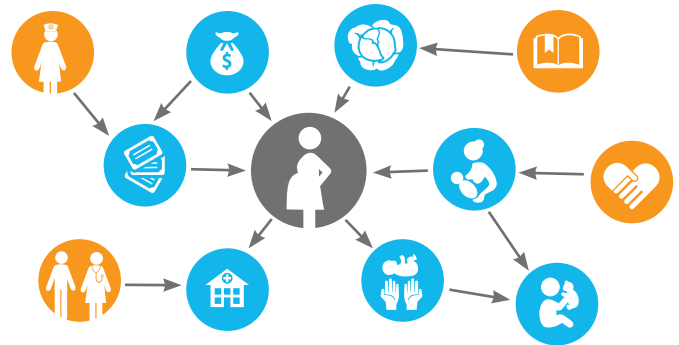
For all of the following entry points, taking advantage of systems mapping methods, for example organizational network analysis mapping,³⁵ can initiate a process to identify entry points for integration of agriculture and nutrition work.

Policies focused on nutrition, food, natural resource management, and agriculture

Many policies and guidelines, both at a national and subnational level, specifically note improved nutrition as a target. Using these established frameworks as a jumping-off point for discussions to coordinate and integrate activities can push organizations in the direction of integration. Using these frameworks can help start discussions on where activities are already occurring in the same location, and those discussions can illustrate where opportunities lie for integration.



FIGURE 2 SYSTEMS MAPPING SAMPLE



School-feeding and other food assistance programs



Established programs that serve short-term food security aims can serve as a foundation for long-term food security and nutrition outcomes.^{29, 30} Established programs that

provide food supplements are accessing populations that are often food insecure and malnourished. Linking projects that offer programs that promote long-term food security, like nutrition education and nutrition-sensitive agricultural extension work, can serve the aims of food assistance programs while promoting long-term aims. Tying this work in with local markets and local producers can promote sustainability of the program and promote livelihoods in the community. This kind of work also takes advantage of children as change agents in their households and can increase the number of people in a family who have received behavior change messages, thereby increasing the chance of uptake.





Income-generating and agriculture programs that aim to improve nutrition



As mentioned above, increasing income alone is not sufficient to achieve nutrition outcomes.^{11, 12} Some agriculture or income-generating programs, however, do make this an explicit goal of their work. Linking nutrition-specific activities with those programs can increase the probability that the nutrition aims of the program are met. Using established goals and targets to start conversations on where some integration can happen, or working with programs that already bring together agriculture and nutrition, can serve multiple goals. The USAID-funded Community Connector project in Uganda³¹, for example, worked with partners—who were traditionally focused on a smaller set of activities—to bring together a holistic package that aimed to improve nutrition along with other goals, including income generation. Although local implementing partners were hesitant to collaborate at first, some partners expanded their other projects (outside of Community Connector) to take a more integrated approach once they saw the benefits of integration because of Community Connector.³²

Nutrition-sensitive value chains



Nutrition-sensitive value chains are a way to bridge work on agriculture and nutrition.³³ Value chains are a range of activities that bring a product from input, through

production, to the market. Taking into consideration the value chain (not just the inputs or outputs) can benefit both the consumers through improved nutrition and the value chain actors through increased income. Furthermore, thinking about markets to identify where existing demand exists—to build out programs that serve that demand—can fill gaps in need. This can include reducing the time and energy burden on women and value-chain actors, reducing health safety risks, and building demand for more nutritious or diverse food.³⁴ Mapping where changes may occur can be an entry point for nutrition and agriculture actors to start working together.

Using existing community institutions

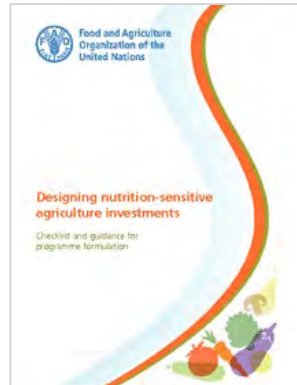


Working with established community structures that already promote agriculture or health, as compared to operating nutrition-only programs, can promote ease of uptake and sustainability of interventions.^{11, 18} Established institutions already have relationships in the communities that they serve. Community forums that serve the target community are able to use the existing trust and platform to link nutrition to the main focus of the group. For example, providing nutrition-sensitive cooking demonstrations during women's community forums has eased uptake and access.²⁹ These kind of activities can also be the basis for short-term wins that lay the groundwork for longer-term programs.

Key Tools and Resources



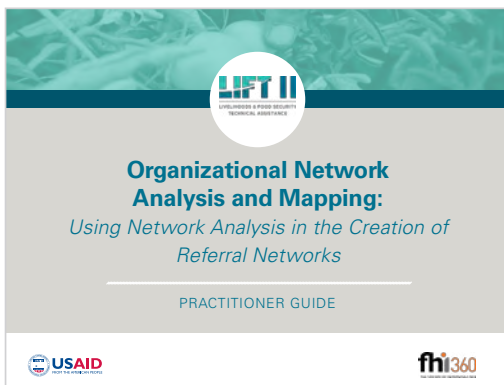
FANTA. Nutrition-sensitive agricultural programming: an online training course



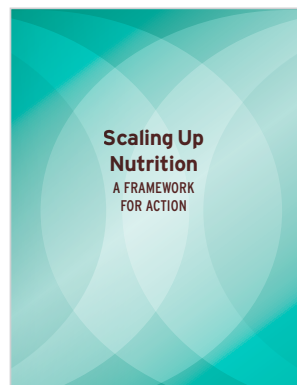
FAO. Designing nutrition-sensitive agriculture investments: checklist and guidance for programme formulation



Feed the Future. SPRING report: leveraging agriculture for nutritional impact through the feed the future initiative: a landscape analysis of activities across 19 focus countries.



LIFT II practitioner guide: organizational network analysis and mapping



The World Bank. Scaling up nutrition: a framework for action

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