

VALUE CHAINS FOR NUTRITION

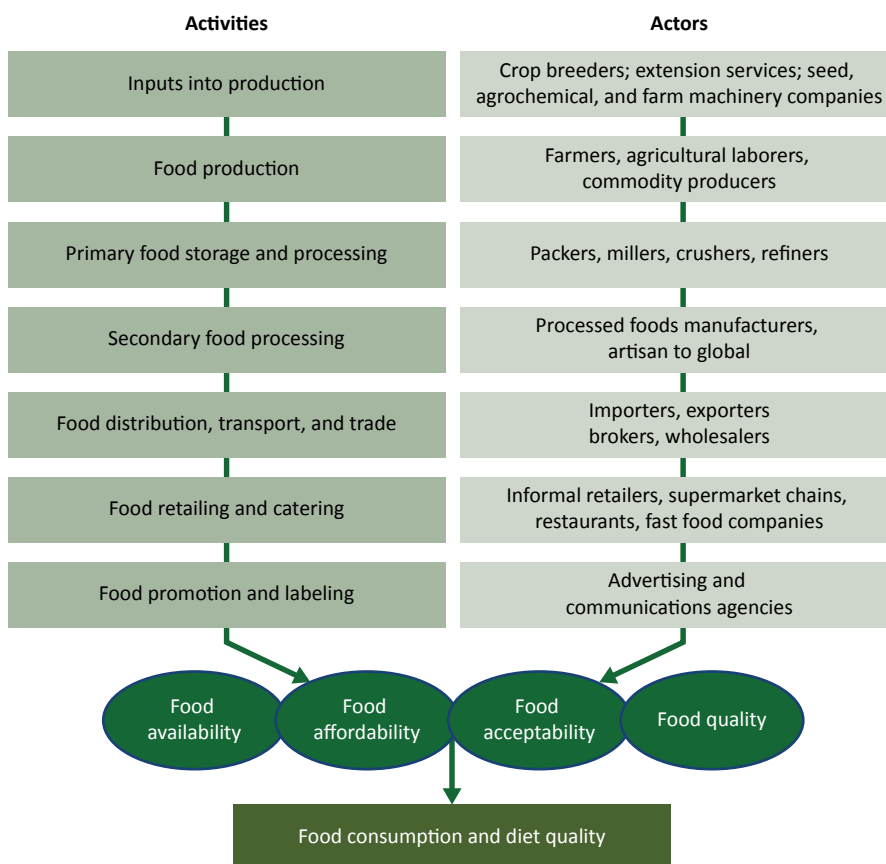
Corinna Hawkes and Marie T. Ruel

Currently, close to 1 billion people suffer from hunger and food insecurity, defined as not having enough calories to live a healthy life. While this number is staggering, the number of people with poor access to nutritious foods rich in essential micronutrients—such as fruits and vegetables, meat, fish, dairy products, and biofortified staple foods—is even more daunting. Deficiencies in micronutrients such as vitamin A, iron, and zinc affect the survival, health, development, and well-being of billions of people; low fruit and vegetable consumption is also associated with increased risk of chronic diseases. Increasing poor people’s consumption of nutritious foods is therefore essential to solving malnutrition in all its forms.

Limited availability, economic constraints, lack of knowledge and information, and related lack of demand for nutritious foods are critical factors that limit poor people’s access to such foods. In theory, the agriculture sector could help address this problem by helping at-risk groups generate more income and by making nutritious foods more available, affordable, acceptable, and of higher quality. Agriculture-based development programs that aim to improve nutrition have tended to focus on agricultural production and consumption by producer households. Yet the links among what is produced on the farm, the consumer, and the income received by the producer do

not stop at the farm gate. Far from it: food is stored, distributed, processed, retailed, prepared, and consumed in a range of ways that affect the availability, affordability, acceptability, and nutritional quality of foods for the consumer. If, then, the agriculture sector is to play a more important role in improving nutrition, there needs to be a greater focus on what happens between production and consumption. One way of addressing this issue is to adopt “value-chain” concepts, analysis, and approaches. Value-chain approaches are already used as development strategies to enhance the livelihoods of food producers, but they have, to date, rarely been used explicitly as a tool to achieve nutritional goals, and they have not been sensitive to nutritional concerns. This brief seeks to identify if, why, and how value-chain concepts could and should be applied to enhance the ability of agriculture to improve nutrition.

Figure 1—A simplified representation of a food supply chain



What Are Value Chains, Value-Chain Analysis, and Value-Chain Approaches?

A *value chain* starts with a supply chain: the processes and actors that take a product from its conception to its end use or disposal (see Figure 1). Although a

value chain is a form of supply chain, the “value” component imbues it with greater meaning: value is *added* to the product through “value-adding” activities as it passes through the chain. These activities *create* value for the value-chain actors. A value chain can thus be described by what and where value is added in the supply chain for and by these activities and actors. The “value” involved may refer to the value of the product in economic terms, to the value added to the product as it passes through the chain, or to the economic value that is created and captured by the actors in the chain—or to all of these forms of value. “Adding value” may also refer to enhancing the benefit offered by the product relative to its price, as perceived by consumers.

Value-chain analysis involves identifying (1) the actors involved in the chain and the relationship between them; (2) the activities performed by each actor and his or her location; and (3) some form of attribution of value corresponding to the activities and actors in the chain. There are many different ways to conduct value-chain analysis, but all are distinct from other forms of supply-chain analysis by assuming that the value through the chain is affected by the interactions among the different actors and activities, not just the isolated behavior of individual actors in that chain. Value-chain analysis has been used in practice in several areas. For example, private companies use it to enhance competitive strategy, and researchers have used it to examine the processes, causes, and consequences of global industrial integration (globalization).

Value-chain approaches to development have been adopted by several development agencies to encourage greater participation by poor people in modern value chains, including food value chains. These include agricultural value-chain development projects, which tend to focus on some form of “upgrading” as a means of increasing returns to farmers (that is, changing their products, improving their processes, increasing the volume produced, changing their functions, or improving coordination to capture more value).

Can Adoption of Value-Chain Concepts Help Achieve Nutrition Goals?

Adopting value-chain concepts has enormous potential to help increase both the supply of nutritious foods to the poor and their demand for those foods (see Box 1). First, value-chain analysis can be used to assess why foods are or are not available in specific communities, why foods cost what they do, and how the nutrient quality of foods changes through the chain. Once problems are identified, value-chain approaches can be used to design and implement solutions to increase the availability, affordability, and quality of nutritious foods. Value-chain analysis can also be used to address acceptability and demand constraints. It can be used, for example, to identify what kind of “value” needs to be added to products to increase consumer acceptability and demand, as well as to determine if adding nutritional value alters the way the consumers “value” the products or their “willingness to pay.”

Value-chain concepts can be particularly useful to help achieve these goals because they are concrete and solution

Box 1 — Value Chains for Nutrition: Examples in Action

Value-chain approaches have not to date been applied in the field of nutrition in a consistent or comprehensive way, but there have been some attempts to apply value-chain approaches in a nutrition context.¹

Projects with explicit nutrition goals and related activities:

- **Enhancing the bean value chain in Uganda: A project to improve bean production, marketing, and consumption as a means of enhancing sustainable livelihoods.** In a value-chain framework, actions included research into increasing yields, improving nutrient quality after harvest, understanding consumers’ preferences and demand, and increasing their awareness of the nutritional and health benefits of beans.
- **Strengthening the value chain for orange-fleshed sweet potato (OFSP) in Mozambique and Uganda: With the ultimate objective of improving vitamin A status, this project implemented actions at three levels of the value chain—farmers, traders, and consumers.** Among many other things, actions included distributing OFSP vines to producers, disseminating results of willingness-to-pay studies to traders, and using mass media and promotional events to raise consumer awareness of the nutritional benefits of OFSP.
- **Developing nutrition programs in Sierra Leone: REACH (the Renewed Efforts Against Child Hunger partnership) is currently developing a value-chain framework for programs involving food purchases from local farmers.** The aim is to increase the demand for nutritious foods while augmenting the incomes of small farmers.
- **Building food systems and access to nutritious foods in the United States: This project, in northeast Iowa, aims to increase the availability and affordability of health-promoting foods while expanding the market opportunities for existing and new local producers.** The project included activities to enhance the distribution of locally produced fruits and vegetables into schools with high proportions of low-income children.

Projects that incorporate nutrition or health concerns but do not have specific nutrition goals:

- **Developing a dairy value chain for smallholders in Zambia: Land O’Lakes International Development used a market-based, value-chain approach in its work with small farmers in Zambia.** The objective was to reduce household food insecurity through increased incomes from the sale of milk and other dairy products and increase the demand for dairy products among producers and consumers.
- **Analyzing the high-value food chain in Indonesia: The objective of this value-chain analysis is to provide insights into how changes in the demand for high-value foods by supermarkets and their customers are affecting the farmers back along the value chain.** A second component of the study is a consumer survey of determinants of changing food demand and the associated health outcomes, which will be used to analyze changing trends in obesity and related chronic diseases.
- **Transforming the supply chain of local foods in the United States: Sysco Corporation and the National Good Food Network (NGFN) jointly implemented a project that aims to improve Sysco’s competitiveness by providing nutritious, locally grown foods to its food-service customers.** Actions were taken to enhance the value created for all the actors in the chain, including reorganizing distribution and rebranding local foods.

Program that incorporates value-chain concepts but does not have specific nutrition goals:

- **Creating value for producers in the value chain for ready-to-use therapeutic foods (RUTFs) in Ethiopia: Hilina, a food-processing company in Ethiopia, worked with local producers to eliminate aflatoxin contamination in peanuts, thereby enabling them to supply ingredients for the production of RUTFs (fortified processed food used to treat severe acute malnutrition).** The ultimate objective was to enable the local production and supply of RUTFs at a reduced cost.

oriented while also being expansive in their reach. Since they incorporate all the steps in the chain at all scales in all sectors, value-chain concepts can help identify causes and implement solutions that are not necessarily obvious, or that may even be counterintuitive. Since value-chain concepts explicitly recognize that it is the coordination among the actors that enhances the ability of businesses or sectors to create value, they also encourage the type of coordinated, cross-sectoral approaches that are critically needed to address malnutrition. They can provide a framework for coordinating actions and actors and for identifying and engaging the sectors that need to be involved. These tasks are particularly relevant for any effort to coordinate the agricultural and health sectors. Value-chain concepts also provide a framework for measuring some of the trade-offs between economic returns and nutrition benefits from agriculture.

It is also important to recognize, however, that there are some significant potential limitations to applying value-chain concepts to achieve nutrition goals. The focus of value-chain development so far has been on “adding value” in the chain, often in ways that make products more expensive for consumers. There may be less scope to add value to products that are targeted to poor consumers—for example, undifferentiated commodities, often distributed outside of formal food markets—making these chains an apparently less appropriate target for value-chain development. Another potential limitation is that value-chain approaches involve consumers only as end users, not as actors in the value chain, and consider “value” from an economic, rather than a nutritional, perspective. Value chains also focus on single food commodities, whereas a healthy and high-quality diet consists of a combination of different foods. Finally, value-chain approaches focus on private competitive markets and have given little attention to making nutritious foods available in settings like food aid distribution points or institutional markets like schools, which are potentially important for specific at-risk groups.

How to Apply Value-Chain Concepts to Achieving Nutrition Goals

The case studies of value chains for nutrition show that there is not just one way to conduct a value-chain analysis, apply a value-chain approach, or examine the implications of an existing value chain. They suggest unifying principles for the application of value-chain concepts that take into account the benefits of applying value-chain concepts, as well as the very real limitations.

- 1. Start with explicit nutrition goals.** While there is not a single “value-chain-for-nutrition” approach, all value-chain approaches to nutrition should focus on a clearly stated, outcome-oriented nutrition goal.
- 2. Clearly define the nutrition problem.** Although value chains focus on a single commodity, value-chain approaches can be consistent with total diet or systems-based approaches when an intervention begins by identifying core food and nutrient gaps. Once identified, these gaps—and associated health problems—can be addressed by targeting one or more food value chains.

- 3. Create and capture value for nutrition.** Although value-chain approaches to nutrition do need to consider economic value for actors in the chain—a necessary component of any value-chain approach—they should also consider the value for nutrition. The case studies show that increases in economic value for vulnerable value-chain actors can be associated with increased value for nutrition, even if this is not their original intention.
- 4. Be expansive in the search for solutions, but tailor to context.** The search for solutions should take the whole value chain—including different sectors and actors at different scales—into account, but the application of solutions should be tailored to circumstance.
- 5. Focus on the coordination of the whole chain.** Improving coordination may involve intervening at several points along the chain or taking a few actions to fix coordination problems or create incentives for change along the chain. Coordination also requires developing alliances between the actors involved.
- 6. Add value not only for nutrition but also for actors along the value chain.** Solutions for nutrition that do not work for actors within the value chain are not value-chain solutions. Rather, nutrition-oriented activities should become a solution to the problems faced by these actors as well, thus adding value for both consumers and actors along the value chain.
- 7. Take a broader view of “adding value” for producers and consumers.** Consumers’ willingness to pay may actually increase as products offer new attributes (such as greater nutritional value or desirability), even among poor people. There are also ways to add value for producers without making the product less affordable for consumers—for example, value-chain activities may mean that producers are able to produce more to supply a larger market.
- 8. Focus on meeting, increasing, and creating demand.** Applying value-chain concepts to nutrition should involve taking a broad approach to “demand” by including consumers’ unmet and uncreated demand, not just existing demand. Poor people, for instance, may have a latent demand for more diverse diets that include a variety of micronutrient-rich foods.
- 9. Create a policy environment in which better nutrition is valued.** Developing value chains for nutrition will be successful at a broader scale only if the policy environment creates incentives for the actors in the chain to value nutrition and change their behavior accordingly.

Conclusions

To date, the use of value-chain concepts for nutrition has been minimal; only a few such interventions have occurred, and none of these actually measure nutritional impact. Yet value-chain concepts offer considerable potential for enhancing efforts to improve nutrition, and they provide a framework within which opportunities for leveraging agriculture for nutrition can be identified and implemented. This is especially the case given the current focus on value-chain development for agriculture in international development, which provides an opportunity to build in nutrition concerns.

The nascent field of “value chains for nutrition” should now focus on diagnosing and implementing interventions, keeping in mind that these interventions cannot be identified ahead of time. Each value-chain problem will require its own set of solutions, which could involve anything from information and education, research and technology, chain reorganization, and new financial incentives to development of new policies and standards. Nonetheless, certain principles should be followed, especially the core value-chain concepts concerning coordination, the consideration of the whole chain, and the attribution of some

form of value. All value chains inherently involve economic value—a value chain is not a value chain without this. And enhancing nutrition is part of human and economic welfare. But value chains for nutrition must also identify the value to nutrition as it is added, created, gained, and lost throughout the chain, as a separate, though linked, component. The value to the consumer must also be fully incorporated in its dimensions. It is possible to develop value chains to improve nutrition while also providing solutions to development challenges in other sectors—not least, in agriculture.

NOTES

1. For more information on these case studies, please see the paper on which this brief is based, C. Hawkes and M. T. Ruel, “Value Chains for Nutrition,” 2020 Conference Paper (Washington, DC: International Food Policy Research Institute, 2011). Also for the first two case studies, see R. Mazur, H. K. Musoke, D. Nakimbugwe, and M. Ugen, “Enhancing Nutritional Value and Marketability of Beans through Research and Strengthening Key Value Chain Stakeholders in Uganda,” 2020 Conference Note 1 (Washington, DC: International Food Policy Research Institute, 2011); and C. Coote, K. Tomlins, J. Massingue, J. Okwadi, and A. Westby,

“Understanding Consumer Decisionmaking to Assist Sustainable Marketing of Vitamin A–Rich Sweet Potato in Mozambique and Uganda,” 2020 Conference Note 2 (Washington, DC: International Food Policy Research Institute, 2011). Authors for the other case studies are as follows: Sierra Leone (REACH); United States–Iowa (B. Ranum and T. Wiemerslage); Zambia (F. Grant and M. Russell); Indonesia (N. Minot); United States–Sysco Corporation and NGFN (J. Colyn, M. Gerencer, P. Cantrell, and J. Fisk); Ethiopia–RUTFs (C. J. Jones).

Corinna Hawkes is a consultant on food and nutrition policy and a visiting fellow at the Centre for Food Policy, City University, London. She is based in France. **Marie T. Ruel** is director of the Poverty, Health, and Nutrition Division of the International Food Policy Research Institute (IFPRI), Washington, DC. This brief is extracted from the same authors' 2020 conference paper, *Value Chains for Nutrition* (Washington, DC: International Food Policy Research Institute, 2011), which has been peer reviewed and may be further revised after the conference. Any opinions stated herein are those of the authors and are not necessarily endorsed by or representative of IFPRI or of the cosponsoring or supporting organizations.

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