How can value chains be shaped to improve nutrition?

About this online consultation

In March 2017 the Working Group on Nutrition-Sensitive Value Chains of the Rome-based Agencies (FAO, IFAD, WFP and Bioversity International) launched the online consultation How can value chains be shaped to improve nutrition? The consultation was held on the FAO Global Forum on Food Security and Nutrition (FSN Forum) from 27 March to 19 April 2017.

The aim of this initiative was to engage stakeholders in identifying challenges and opportunities related to nutrition-sensitive value chain (NSVC) development. Participants discussed their experiences relating to past or ongoing NSVC experiences on the ground, and were also invited to comment on the discussion paper “Inclusive value chains for sustainable agriculture and scaled up food security and nutrition outcomes” prepared by the Working Group.

The consultation received 52 contributions by participants from 25 countries, which are available on the webpage: www.fao.org/fsnforum/activities/discussions/nsvc

In this document you will find the introduction to the topic and a summary of the consultation.
TOPIC INTRODUCTION

In the context of Agenda 2030, food security, nutrition and sustainable agriculture are essential not only for achieving Sustainable Development Goal (SDG) 2, but also for the broad set of SDGs.

A healthy diet is key to preventing malnutrition in all its forms. However, diverse nutritious foods are not always available and affordable for all, especially in low income settings. Furthermore, rapid urbanization and changing lifestyles have led to a shift in dietary patterns, partly due to changes in the food systems and its effects on the availability, affordability and desirability of healthy, as well as less healthy foods.

Improving nutritional outcomes requires consideration not only of the way food is produced, but also how it is processed, distributed, marketed and consumed, a process that is usually referred to as ‘value chain’.

Value chains are one of the core elements of a food system. In addition to including all food value chains required to feed a population, food systems include – among other elements – a diverse set of drivers (e.g. political, economic, socio-cultural and environmental drivers) that affect all VC actors, including consumers. Nutrition-sensitive approaches to value chain (VC) development have emerged as a promising way to shape food systems for improved food security and nutrition outcomes.

Building on our existing understanding of how food systems influence dietary patterns and nutrition, this consultation seeks a more in-depth exploration of the role of value chains, as a useful framework to unpack the complexity of food systems.

Nutrition-sensitive value chain – A food value chain consists of all the stakeholders who participate in the coordinated production and value-adding activities that are needed to make food products (FAO, 2014). Though the traditional focus has been on economic value, nutrition-sensitive value chains leverage opportunities to enhance supply and/or demand for nutritious food, as well as opportunities to add nutritional value (and/or minimize food and nutrient loss) at each step of the chain, thereby improving the availability, affordability, quality and acceptability of nutritious food. For lasting impacts on nutrition, this approach must be placed in a sustainability context as well.

The Rome-based Agencies (RBAs)—including FAO, IFAD and WFP, along with Bioversity International and IFPRI—have identified nutrition-sensitive value chains (NSVC) as a key area where their collaboration can be strengthened, along with that of governments, private sector, civil society and academia, to enhance progress towards ending malnutrition in all its forms. In this context, an RBA Working Group was set up on the topic. Drawing on existing VC for nutrition approaches, the RBA WG has developed a joint nutrition-sensitive value chain (NSVC) framework, which was the object of a Discussion Paper presented at a Special Event during the Committee on World Food Security Plenary Meeting in October 2016.

The NSVC framework is a practical approach to navigate the complexity of food systems and identify investment and policy opportunities to ensure that food value chains contribute to improved food security and nutrition. Opportunities to enhance nutrition outcomes arise at all stages of the value chain, from production to consumption. Adopting a NSVC approach allows for analyzing the roles and incentives of different actors along the chain, and to consider what may be the impact on cross cutting issues such as gender and climate change, as well as what policy and regulatory environment is conducive for VC to contribute to nutrition.

Although VC development holds great potential to contribute to nutrition, there are also a number of tensions and trade-offs that arise when combining the objectives of developing economically viable value chains, and improving food and nutrition security. Identifying and addressing these challenges while searching for opportunities for convergence and multi-stakeholder partnerships are an integral part of the NSVC framework.

Objectives of the consultation

The RBAs invite the participants of the FSN Forum to read the discussion paper on ‘Inclusive value chains for sustainable agriculture and scaled up food security and nutrition outcomes’, and engage in a stimulating discussion that will contribute to identifying a broader set of challenges and opportunities related to NSVC development, collaboration among partners, as well as identifying good practices and lessons learned from past or on-going NSVC experiences on the ground.

In particular, we encourage participants to explore the following questions:

1. What challenges and opportunities arise when developing VC to be more nutrition-sensitive?

2. What examples of nutrition-sensitive value chain approaches can you share and what lessons can be learned from them?
   Examples can come from:
   2.1 Governments: policies, regulatory frameworks, etc.
   2.2 Development actors: development projects, public-private partnerships, etc.
   2.3 Private sector: nutritious products for the bottom of the pyramid, marketplace for nutrition, etc.

3. Does the framework as presented in the discussion paper help you identify barriers and opportunities for nutrition-sensitive value chain development? What would be needed to render the framework more operational?

4. What would you consider as the main barriers to and enabling factors for scaling up through replication, adaptation, and expansion of these models of interventions?

The outputs of this consultation will be an important input for the RBAs to refine their approach to nutrition-sensitive value chain development, and to move from Principles to Action, bringing this approach to on-going operations in the field. Given the vast nature of the topic, we particularly welcome comments that can lead to practical recommendations.

We thank in advance all the contributors for sharing their views and experiences in this innovative field.
Developing NSVC: opportunities and challenges

Nutrition-sensitive approaches to value chain (VC) development have emerged as a promising way to shape food systems for improved food security and nutrition (FSN) outcomes. During the online consultation, participants stressed the need to view value chain development through a food system lens, and argued that there is scope for significant improvement in terms of the impact of value chains on nutrition and the broader (socio-economic) environment (Florence Egal, Dorcas Ukpe). In thinking about how value chains could be improved for nutrition, participants articulated the following opportunities and challenges:

Opportunities

- **Promoting nutrition awareness in order to stimulate the demand for nutritious food.** This should be done among producers as well as consumers. Promoting food diversity marketing (Private Sector Mechanism) and initiatives to raise “food literacy” among consumers (Frank Eyhorn) – such as providing nutrition information on packaging (Franck Hubert Ateba, Waddilove Sansole) – are crucial to enhancing the demand that determines whether or not producers engage in NSVCs (Frank Eyhorn). In particular, raising awareness among mothers (Private Sector Mechanism) and children is crucial for improving consumption habits (Joy Muller). Raising awareness is also crucial in the context of migration and urbanization, which may have an impact on people’s diets (Eileen Omosa).

- **Diversifying agricultural production and increasing the availability of (naturally) nutritious foods (Private Sector Mechanism, Nestlé).** Normally the focus is on farmers’ safety and not on the nutritional quality of food. In this regard, specifying the nutritional value of food should be considered a good agricultural practice. Seed quality and soil quality, and their impact on the bioavailability of microelements, should be considered as well (Pilar Teresa Garcia).

- **Supporting biofortification, fortification and supplementation.** These should be recognized as key solutions in cases where nutritious diets are not available or accessible (Private Sector Mechanism, Nestlé).

In particular, food consumed by the most vulnerable consumers should be fortified with, among others, B vitamins. Fortification may represent the cheapest way to provide essential nutrients and does not require a change in consumption habits (Bruno Kistner). It was argued that business cases for fortification should be developed (Waddilove Sansole), taking into account the maturity of the value chains under consideration, which determines their readiness to apply fortification technologies. In this context, the private sector can play an important role in developing supply chains for biofortified crops (Private Sector Mechanism, Nestlé). However, it was also argued that promoting fortified foods has resulted in the marginalization of local food systems and increased consumer dependence on imported foods; therefore, the impact of fortification interventions on NSVCs should be monitored (Florence Egal).

- **Strengthening VCs for local and traditional foods.** Local foods should be valorized, as they are the foods accessible to people in need (Hamadoun A. Haidara). In addition to home consumption, indigenous foods should also be promoted for export (Stephen Machado, Lucy Quainoo, C. Palanivelayuthan Chokkalingam).

- **Improving food safety.** Crops should be produced using as few chemicals as possible (Stephen Machado). Also, better storage and transportation facilities (Takele Teshome) and traceability systems could improve safety (Sebastian Romero Villamil).

- **Reducing food loss and waste (Emile Houngbo).** This involves improving storage facilities, transportation, processing and packaging (Private Sector Mechanism, Abdulazeez Badairo, Hélène Delisle, Takele Teshome), particularly in rural areas (Abdulazeez Badairo). People should be educated on processing techniques (Eileen Omosa); local food processing may not have received sufficient attention, possibly because of competition from international industries that benefit from food processing (Hélène Delisle). Nutrition-sensitive food processing technologies do exist, but adoption may be limited due to their cost. For instance, parboiling rice to preserve B vitamins, and lactic fermentation, sprouting and dextrinization, could be more widely used. The
latter could be useful in (semi-) industrial development of local complementary foods (Hélène Delisle).

- Promoting sustainable production practices. Improving value chains for nutrition specifically entails implementing a series of integrated processes such as rainwater and watershed management and soil health management (Dhanya Praveen). Other examples include conservation agriculture, genetic selection and bio-innovation, hydroponics (Private Sector Mechanism), and agro-ecology (Emile Houngbo). Responsible sourcing can help ensure the traceability and quality of agricultural produce (Private Sector Mechanism, Nestlé). One of the participants also mentioned using urban waste as fertilizer (Bill Butterworth).

- Leveraging Rural Advisory Services (RAS) for nutrition-sensitive agriculture (Private Sector Mechanism). RAS often play a major role in informing farmers’ decisions, yet currently there is limited knowledge about how RAS could support better nutrition (Edye Kuyper, Private Sector Mechanism).

- Supporting smallholders and integrating them in VCs. The private sector could help smallholders a) achieve better market access by increasing the quantity and quality of their production and connecting them to value chains; and b) become entrepreneurs by facilitating access to sustainable production techniques through extension, access to inputs, financial services (to reduce risks associated with agricultural investment), and market information (Private Sector Mechanism), which should be made available to all stakeholders (Abdulazeez Badairo, Takele Teshome).

- Establishing cooperatives (Lucy Quainoo). The creation of cooperatives for smallholders is crucial, as it makes it easier for them to market their produce. Cooperatives should also be formed at the regional level to promote effective value chain management and to ensure quality produce (C. Palanivelayuthan Chokkalingam).

- Empowering women by investing in labour-saving technologies. This can improve nutrition by increasing time available for child care and food preparation, as well as improving access to clean drinking water. Additionally, labour-saving technologies for women’s traditional work performed outside of food production leaves women with more time available for activities such as food processing (Private Sector Mechanism).
Challenges

- **Adopting a systemic approach towards improving food security and nutrition.** The prevailing vision regarding value chains is fragmented, and the interventions currently implemented are sectoral. These should be replaced with a multisector approach that links the health, nutrition and agriculture communities together (Private Sector Mechanism) – something that requires a shared vision and the commitment of all actors involved. The responsibilities of value chain actors in relation to food security and nutrition should also be defined (Mylene Rodríguez Leyton, Mebit Kebede). Furthermore, legal and regulatory frameworks should be reviewed to make sure they are in line with NSVC approaches (Mylene Rodríguez Leyton), and human rights should be integrated as well (Florence Egal).

- **The need to integrate more than one food system or commodity.** Different food systems/commodities have differing value chain dynamics that have to be taken into account, which results in a complex system in which to promote NSVCs (Waddilove Sansole).

- **The presence of adverse agricultural conditions and production practices.** For instance, in many African regions land degradation has made crop production impossible (Stephen Machado). Other issues involve water pollution and the application of pesticides/fungicides (Takele Teshome).

- **Lack of an effective governance structure.** This leads to inadequate linkages among value chains, which in turn constrains constructive decision-making by farmers (Eduardo Mosquera Llanos).

- **Ensuring that VCs are nutrition-sensitive as well as economically viable.** Promoting the nutrition-sensitive aspects of value chains right at the production level (Waddilove Sansole) might be difficult, as attention has mostly been given to economic rather than nutritional value (Mebit Kebede). Where staple crops and single commodities are part of cost-effective VCs, the VCs of other food products that ensure diversified diets are much more susceptible to losses (Erick Boy-Gallego). Nutrition-sensitive approaches seem easier to implement in initiatives driven by development actors rather than by the private sector (Frank Eyhorn). The central problem is that value chains per se are merely concerned with the service value that each component adds to the product. Thus, taken on their own, the single steps within the chain have no bearing on nutrition. Instead, value chains should be part of food systems aimed at making nutritious food available and accessible to people. Hence, a policy shift is needed, moving away from industrialization and free trade, and focusing instead on the intrinsic nutritional value of products (Lal Manavado).

- **Capacity development of stakeholders.** Relevant value chain actors should be empowered to become leaders in the search for alternatives in NSVC development (Mylene Rodríguez Leyton).

- **Resistance to change due to cross-cultural differences and negative perceptions of innovation.** (Lucy Quainoo).

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The discussion paper

**Suggestions to improve the framework**

Participants stressed the usefulness of the framework presented in the paper, which takes a multidimensional and systemic approach towards developing NSVC (Dorcas Ukpe). However, some participants questioned to what extent the “modern, formal, linear and commercially focused” NSVC framework presented would be relevant to developing countries, where VCs tend to be informal and traditional (Roma 3 Masters students in Human Development and Food Security). In addition, it was argued that the framework should be placed more firmly in the context of food systems and the surrounding enabling environment. It was further stressed that VCs are only one dimension of food systems; thus the approach remains biased towards the classical supply-driven approach, and risks reinforcing the prevailing confusion between food chains and food systems. The paper should therefore consider providing a rationale and a road map for reorienting food systems as an integrating concept for the 2030 Agenda (Florence Egal).
Several aspects were mentioned that deserved more attention in the discussion paper, including the following:

- **Traditional food systems and value chains.** No reference is made to supporting local products, traditional food systems and value chains. While national, regional and international trade will always be needed, priority should be given to local markets and short food chains in order to "relocalize" diets and food systems. Small-scale food processing in particular is essential for local diets (Florence Egal).

- **Indigenous knowledge and resources.** The paper does make reference to the importance of indigenous knowledge. Yet in order to generate practice-based evidence, it is necessary to inventory and review relevant local practices. In this regard, the food research principles of the International Panel of Experts on Sustainable Food Systems (IPES-Food) should be applied. The paper also largely ignores indigenous fruits and food plants; because these are nutrient-dense in most cases, they should be part of the VC equation (Stephen Machado).

- **Women's empowerment.** The linkages between agriculture, women's empowerment, nutrition, and value chains need to be further explored. Research shows that identifying women’s time and resource constraints is crucial for improving agricultural productivity and nutrition (Ann Steensland). Women’s empowerment and gender equality should be perceived as crucial mediators in these pathways. Moreover, the direct effect they have on their own on the underlying drivers of nutrition, in terms of time for instance, should be considered as well. Because agricultural value chains provide livelihoods, they affect the control mothers have over nutrition-sensitive resources (Victor Pinga).

- **Environmental sustainability.** The paper makes no reference to the sustainable use of biodiversity (Florence Egal) and the fact that commercial agricultural value chains typically introduce risks to environmental safety (Victor Pinga).

- **The role of the private sector.** Some participants pointed to the need for public-private partnerships (PPPs) to improve nutrition (Bruno Kistner, Sebastian Romero Villamil), the private sector being a key player in developing value chains (Private Sector Mechanism). PPPs could for instance involve supportive tax policies (Bruno Kistner). However, other participants were critical with regard to private sector involvement, as the spread of supermarkets and PPPs has resulted in increasingly concentrated food distribution; in addition, consumers are often misled through inappropriate marketing (Florence Egal).

Some participants also shared considerations regarding the practical implementation of the framework:

- **Household food security should be considered a prominent indicator of successful NSVCs for food systems.** One should consider objective and subjective food security, as well as its quantitative and qualitative aspects (Hélène Delisle).

- **A general action plan should be developed.** The plan should be coherent, define medium-term goals, and specify what tasks and activities to be carried out and by whom (Sebastian Romero Villamil).

- **Stakeholders should be trained in understanding value chain and FSN concepts from a systemic and complex approach.** Points of convergence should be identified to promote collaboration among different actors (Mylene Rodriguez Leyton).
NSVC analysis and strategies – earlier work

Leveraging Agriculture for Nutrition in South Asia (LANSA)

LANSA has published a conceptual framework of agri-food VC interventions aimed at enhancing consumption of nutritious food by the poor. The framework can guide the analysis of VC-based interventions aimed at promoting the intake of micronutrient-dense foods in Bangladesh, India and Pakistan (Sangeetha Rajeesh).

Additionally, LANSA has developed another framework that focuses on assessing the pathways for delivery of nutritious foods (post-farm gate), and explains how to make agricultural VCs and markets more efficient when delivering nutritious food (Mar Maestre).

United Nations Environment Programme (UNEP)

The Ecosystem-based Adaptation for Food Security Assembly (EBAFOSA) approach launched by UNEP in 2015 is an inclusive platform with national branches in all African countries, and includes a nutrition-sensitive value chain strategy. EBAFOSA could constitute an operational, official and large-scale framework on which the RBA Working Group could be based for the effective promotion of food security and nutrition in Africa (Emile Houngbo).
Promoting NSVC development in practice

Cameroon

In Cameroon, various initiatives related to NSVCs have been implemented. For instance, the use and processing of cassava derivatives is being promoted, and the government is supporting large-scale production of cassava starch. The government has also focused on the domestication of *Gnetum africanum*, a forest plant with many nutritional benefits. However, it should be noted that the regulations, which are generally applied after project implementation, focus mainly on financial benefits rather than encouraging VC development. Additionally, money for such projects is often awarded to people who lack affinity with these initiatives (Franck Hubert Ateba).

Colombia

In Colombia, farmers' associations have been consolidated in order to promote sustainable production of high-quality food, and to generate added value mainly for the benefit of farmers. An example of this is FNC, an association representing more than 555,000 coffee growers promoting sustainable coffee production in social, economic and environmental terms. The association engages in research to maximize the quality of the coffee, and strives to ensure a fair price for producers. In addition, it facilitates services such as purchase guarantees, and has been engaged in activities promoting the commercialization of Colombian coffee (Sebastian Romero Villamil).

In aiming to support the agricultural sector, the Colombian Government has successfully supported the development of value chains. However, it is still in the early stages of establishing a focus on the nutrition-sensitive aspect. Some initiatives already introduced concern the collaboration between the government, non-governmental organizations and the private sector (such as DuPont) in developing fortified foods and special nutritional formulas to improve the nutritional status of vulnerable populations. Another initiative is the Master Plan for Food Supply and Security for Bogotá, which aims to supply sufficient, nutritious foods in a timely manner. It does so by marketing basic food products at fair prices (ensuring accessibility for all) and by creating a network to support food producers (Mylene Rodríguez Leyton).

Côte d'Ivoire

In Côte d'Ivoire, intra-urban agriculture and particularly market gardening have become important in guaranteeing food security. They provide significant opportunities for NSVC development because of their proximity to cities and their year-round accessibility. However, intra-urban agriculture is informal and precarious, and market gardens increasingly give way to unregulated construction and household waste, which pollutes irrigation water. In order to promote intra-urban agriculture, it needs to be taken out of the informal sector and regulated in city policy. It could also be promoted by protecting intra-urban agricultural areas, providing subsidies, and organizing farmers (Kouakou Valentin Kra).

India

In India, Britannia, GAIN and the Naandi Foundation have collaborated to promote biscuits fortified with iron. Other fortifications, such as the iodization of salt and the fortification of edible oils with vitamin A, have been made mandatory, and the government has implemented a supplementary nutrition programme for children aged 0–6 years old and for pregnant and lactating women (Bhavani R. Vaidyanathan).

Amul is a dairy cooperative of small-scale livestock holders that facilitates access to markets. It produces a wide range of products and includes initiatives on food safety, support for animal husbandry, promotion of an efficient dairy collection structure, and brand development. The cooperative’s “Amulspray” is an example of a natural, nutrient-dense product from a business-driven agri-food value chain. The spray has enhanced accessibility to milk, as it is sold in affordable packets and uses traditional and modern VCs to reach rural and urban consumers (Rohit Parasars).
Nigeria

In Nigeria, where peasants are responsible for the majority of food produced locally, providing storage and transportation will be crucial for improving nutrition. Although policy-makers have come up with promising ideas on repositioning agriculture in Nigeria – such as government procurement from local producers, and having the government in charge of storing, exporting and selling produce to the public – implementation of these plans has been lacking.

Solomon Islands

In the Solomon Islands, changing lifestyles entails shifting preferences away from imported foods. Although nutrition education could be effective in addressing this problem, it should be noted that although people may be aware of the importance of nutrition, they might still ignore it because of the convenience of imported foods. Additionally, nutritious food is not always available; by contrast, less nutritious food is often cheap and can be stored longer. Good practices exist for storing and processing nutritious traditional foods, but these have not been commercialized and are rather expensive and time-consuming (Kemuel Satu).

Togo

Togo has seen a number of NSVC development initiatives, including a) the fortification of cotton oil with vitamin A by the Nioto Company; b) the implementation of the Fortified Food system, including the production of fortified maize flour; and c) the new treatment of Moringa oleifera leaves, which are now dried at low temperatures in order to prevent vitamin and mineral loss (Adebayo Depo).
**RESOURCES SHARED BY PARTICIPANTS**


World Bank. 2013. *Improving nutrition through multisectoral approaches*. Washington, DC (available at [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/02/05/0003561611_20130205130807/Rendered/PDF/751020WPD01pro00Box0374299800PUBLIC0.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/02/05/0003561611_20130205130807/Rendered/PDF/751020WPD01pro00Box0374299800PUBLIC0.pdf)).
WEBSITES

Bioversity International – Healthy diets from sustainable food systems
http://www.bioversityinternational.org/initiatives/healthy-diets

Global Forum for Rural Advisory Services – Nutrition Working Group
http://www.g-fras.org/en/community/working-groups/nutrition-working-group.html

Helvetas
https://www.helvetas.org

Helvetas – Organic and Fair Trade Rice Project in India and Thailand
https://www.helvetas.org/topics/keystone_mandates/rice_project.cfm

IFAD – Feature stories
http://www.ifad.org/story/feature/nutrition.htm

IFOAM – Nutrition in mountain agro-ecosystems

LANSA – Public and Private Actions
http://www.lansasouthasia.org/content/public-and-private-actions

Swiss Agency for Development and Cooperation – Agriculture and food security

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