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Better together: improving food security and nutrition by linking market and food systems

Martha Cruz Zuniga, Monty L. Lynn, Elly Kaganzi Mwesigwa, Dan Norell, Vidhya Sriram, and Emmanuel Tumusiime

Abstract: *Market-based approaches to food security often increase agricultural productivity and income yet sometimes fail to enhance nutrition. When food security programming combines market and food systems with a specific focus on women and girls, economic and nutrition outcomes benefit. We identify distinctive and shared elements from market and food systems and highlight how they enhance nutrition outcomes when they are combined. We describe food security programming by CARE and World Vision in Bangladesh, Ethiopia, Madagascar, Zambia, and Zimbabwe, demonstrating nutrition gains in food insecure households.*

Keywords: food systems, food security, gender, market systems development, value chain development

Introduction

GLOBAL HUNGER IS ONCE AGAIN on the rise. Over 821 million individuals were estimated to be undernourished in 2017 and 515 million children – or 20 per cent of all youths under the age of five – are expected to experience the lifelong physical and mental effects of stunting (FAO et al., 2018). These numbers represent an upturn in the prevalence of food insecurity and undernutrition and challenge the 2030 UN Agenda for Sustainable Development (United Nations, 2018) and the 2025 Decade of Action on Nutrition (United Nations, 2016) that target ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture.

Market-based approaches (here, 'market systems') have been used successfully in food security programming to increase productivity and income for smallholders (Cunningham, 2009; Campbell, 2014; Norell et al., 2015, 2017; Springfield Centre, 2015). Economic improvements, however, do not always translate into nutrition gains (DFID, 2009, 2012; Rutherford et al., 2016). Donors continue to invite insights into how nutrition can be improved through market systems approaches. As a US

Martha Cruz Zuniga (cruzzuniga@cua.edu) Catholic University of America, Washington, DC; Monty L. Lynn (monty.lynn@acu.edu) College of Business Administration at Abilene Christian University, Abilene, Texas; Elly Kaganzi Mwesigwa (elly.kaganzi@care.org) CARE, Atlanta, Georgia; Dan Norell (dnorell@worldvision.org) World Vision, Washington, DC; Vidhya Sriram (vidhya.sriram@care.org) CARE USA, Atlanta, Georgia; Emmanuel Tumusiime (etumusii@worldvision.org) World Vision, Washington, DC

Feed the Future (2018: 6) draft learning agenda asks, 'Which nutrition-sensitive interventions, especially in market systems and value chains, most effectively increase access, availability, and utilization of nutritious and safe diets year-round?'

We join others (e.g. Anim-Somuah et al., 2013; Henson et al., 2013; Maestre et al., 2017; Nisbett et al., 2017; Allen and de Brauw, 2018; Gelli et al., 2018; Kumar et al., 2018; Morgan et al., 2019) in affirming the need for market systems programming that is nutrition-sensitive and incorporates women's empowerment. We add to the ongoing discussion by offering a model which combines nutrition-sensitive elements from market and food systems, illustrated with examples from CARE and World Vision's work among the extremely poor (per person income under US$1.90/day) – a population which accounts for nearly half of all stunting (Development Initiatives, 2017). We conclude by highlighting the implications of this model for theory and practice.

Market and food systems

A market system envisions the interaction of value chains, households, communities, and institutions. Campbell (2014: 2) writes that a market system is 'a dynamic space – incorporating resources, roles, relationships, rules and results – in which private and public actors collaborate, coordinate and compete for the production, distribution and consumption of goods and services'. A market systems lens can be used within a variety of economic sectors, but when applied to food and agriculture, market systems are often used to generate income growth through productivity, the development of a new crop, livestock, or market, and/or by strengthening institutions and links within the system. Although these are potentially useful levers, nutrition is not always a direct focus of market systems development; more is required than merely developing nutrient-dense value chains (Gelli et al., 2018). Food systems, on the other hand, more frequently incorporate nutrition directly. The Food and Agricultural Organization (FAO, 2018) describes a food system as encompassing:

> The entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products. Food systems comprise all food products that originate from crop and livestock production, forestry, fisheries and aquaculture, as well as the broader economic, societal and natural environments in which these diverse production systems are embedded.

What food systems sometimes de-emphasize, however, is a focus on producer productivity and income growth which can impact nutrition.

Market and food systems overlap but differ in focus (Anim-Somuah et al., 2013; Du, 2014; Foran et al., 2014; Thorpe and Reed, 2016). When taken alone, each can omit or minimize important nutrition-building elements. To more closely identify their contributions and how they address nutrition, we catalogued the elements of five market system models (Campbell, 2008, 2014; DFID/SDC, 2008; Bolwig et al., 2010; Springfield Centre, 2015) and six food system models (Sobal et al., 1998; Ericksen, 2008; Ingram, 2011; Rutten et al., 2011; HLPE, 2017; FAO, 2018; Marivoet et al., 2019).

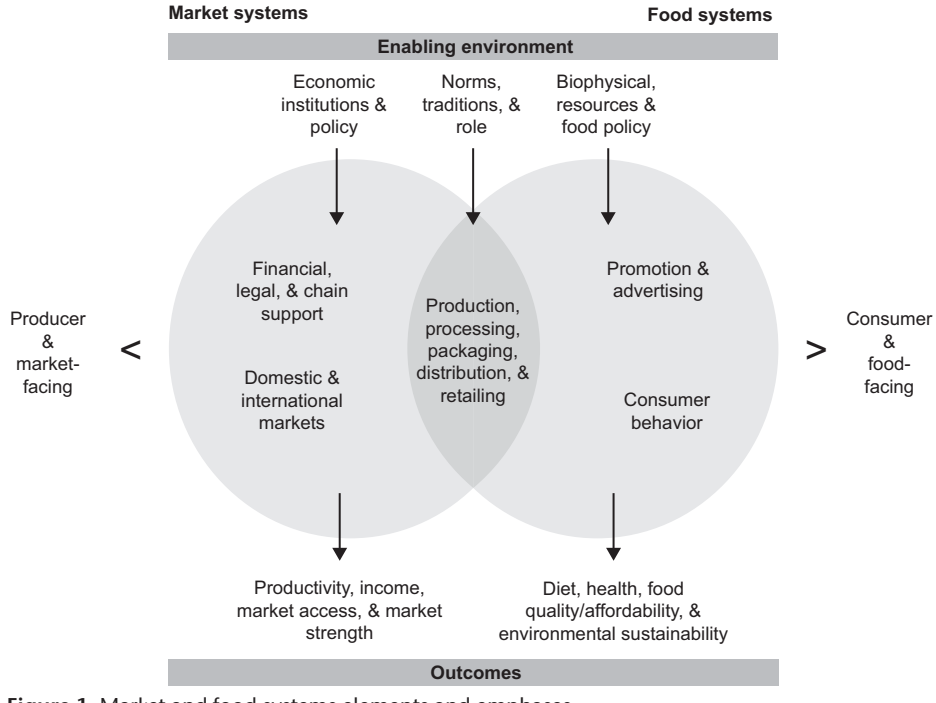

Figure 1 Market and food systems elements and emphases

Figure 1 summarizes our findings and proposes a synthesized Inclusive Market and Food Systems Model. Food system models (depicted in the right-hand circle) typically focus on food and consumers. They include the producer-processor-retailer-consumer chain, as do market systems, but they follow food through preparation and consumption, or 'from farm to flush' (Nugent and Grafton, 2016). Food systems frequently incorporate biophysical elements (e.g. soil quality, climate) in the enabling environment and they often address nutrition education, consumer behaviour, and intra-household dynamics. They also often highlight norms and roles, such as gendered crops, food preferences, and household roles, and emphasize outcomes, such as health, nutrition, food availability, affordability, and environmental sustainability. Market systems (depicted in the left-hand circle in Figure 1) typically focus on producers, suppliers, buyers, processors, and other market actors. Market system models commonly incorporate economic and value chain-supporting institutions, including regional and foreign markets. Market system model outcomes often include accessible input and output markets, enhanced producer productivity and income, and functioning markets.

Linking market and food systems

A closer examination of our model suggests that food systems can complement agricultural market systems by highlighting four elements: available and affordable nutritious foods, gender and cultural aspects of agriculture and food, nutrition-sensitive policy

and regulation, and biophysical resources and sustainability. The first three elements of our model are expanded below. Biophysical resources and environmental sustainability – including issues such as soil quality, ground-level ozone, pests, pollinators, water depletion, and biodiversity loss – impact food prices and agricultural sustainability (Allen and Prosperi, 2016; Myers et al., 2017). These are important considerations but we bypass them here to focus on economic and consumer aspects of nutrition. We'll take the other three elements in turn.

Available and affordable nutritious foods

Food systems augment market systems by emphasizing nutritional considerations within agricultural value chains. As described by Hawkes and Ruel (2011: 2):

> 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 constraints 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'.

Hawkes and Ruel (2011: 3) recommend implementing food security programming with explicit nutrition goals, identifying core food and nutrient gaps and enhancing nutrition within commodity choice and processing. Similarly, Anim-Somuah and his colleagues (2013) recommend considering the nutritional quality of commodities (particularly for infants and pregnant and lactating women), food affordability and acceptability for target consumers, food integrity and nutritional information, and business incentives for producing and marketing nutritious foods. Increasing the availability of one or a small set of foods is unlikely to affect nutrition; rather, examining the nutritional quality of foods prepared by different varieties and processors, targeting the product families that make major dietary contributions, and selecting commodities and foods that satisfy 'agricultural, nutritional, and economic characteristics' (Morgan et al., 2019: 9) are likely to have more impact. Ruel et al. (2017: 58) recommend tailoring interventions to specific market segments so as 'to meet the needs of households with pregnant women and children in their first 1,000 days'. They add that 'some models could be tailored to address the needs of adolescent boys and girls, or … to specific individuals within the household'. This is important because it highlights potentially different *within-household* nutritional requirements rather than the more common focus on increasing aggregate household income. In isolated locales, focusing on direct consumption of nutritious foods (including livestock) may be expedient, in contrast to a near-exclusive focus on regional or export markets (Rawlins et al., 2014; Jodlowski et al., 2016; Kafle et al., 2016). Home gardens may provide food and income, particularly during times of drought

(Gelli et al., 2018), and the need for year-round access to nutritious foods should be recognized in addition to food loss and waste during harvest, transport, and processing (HLPE, 2014). Some nutrition-sensitive market systems models incorporate elements such as these, but food systems brightly illumine them. Our Inclusive Market and Food Systems Model attempts to balance the nutrition focus in food systems with the income and market efficiencies in market systems development.

Gender and cultural aspects of agriculture and food

Food systems also highlight the importance of gender and culture in food production and consumption (Negin et al., 2009; Janoch et al., 2018). Market systems tend to highlight women's asset ownership and access to input and output markets while food systems tend to emphasize gender and culture in food preparation and consumption. Food security programming frequently incorporates steps to increase the 'choice' and 'voice' of girls and women (Newton et al., 2018: 12) regarding 'decisions determining what to do with income, decisions that determine who does what, and the decisions around who consumes', in addition to 'decisions on how income is used and how time is allocated between different household members'. As Malapit and Quisumbing (2015: 62) conclude: 'Improved nutrition is not necessarily correlated with being empowered across all empowerment domains … [D]ifferent domains may have different impacts on nutrition'. In other words, to enhance nutrition, it is important to understand how individuals and groups think about physical, cultural, and social aspects of food, diet, food preparation, consumption, and waste.

Nutrition-sensitive policy and regulation

Market and food systems recognize that policy and regulation can have a significant impact on agriculture. What food systems fold in is a greater focus on the consumer and nutrition. When suppliers, buyers, and producers are not incentivized to advance affordable, nutritious foods for food-insecure households, government and civil society policies and programmes may nudge private sector players to consider nutrition-sensitive products along with their pricing, labelling, advertising, and distribution (Hawkes and Ruel, 2011; Acosta and Fanzo, 2012; Global Panel, 2017; Maestre et al., 2017; Maestre and Poole, 2018). Morgan and her colleagues (2019: 8) argue that 'consumers are unlikely to demand a nutritionally optimal combination of foods without intervention. Therefore, the starting point for analysis is understanding nutrition problems faced by target groups and what people in those groups are, or are not, eating'.

Programming and impact

We now turn to illustrating the Inclusive Market and Food Systems Model with programming examples from CARE and World Vision. Examples abound which illustrate various aspects of our model, but we have attempted to choose representative examples that make distinct points and/or have been evaluated. Providing a rubric over the programming examples are World Vision's *Integrating Extremely Poor*

Producers into Markets Field Guide (Nobo Jatra Development Food Security Activity; Norell and Brand, 2017) and CARE's *She Feeds the World* framework (2018), both of which offer nutrition-sensitive perspectives and tools in agricultural market and food systems development.

Nutritious foods

Nutrition-sensitive food security programming begins with a market analysis that identifies nutrition-rich foods and their desirability for target consumers and producers. (For the nutritional requirements for pregnant and lactating mothers, neonates, infants, and children, see Bhutta et al., 2013.) Specific steps include identifying nutrition-sensitive commodities and food products, evaluating new or existing channels for food-insecure populations, troubleshooting bottlenecks in value chains, improving growers' availability and access to inputs and processing, and assessing the year-round availability of nutritious foods. As an example, World Vision, CARE, and ORDA's (an Ethiopian NGO) Consider Strengthening PSNP (Productive Safety Net Program) and Resilience (SPIR) programme included an assessment of potential and existing value chains in Ethiopia and evaluated chain actors' opportunities and constraints. Unreliable input markets for affordable, timely, high-quality agricultural inputs were identified as a value chain weakness. At that time, government agencies and NGOs dominated the input supply sector and farmers typically waited for subsidized or free agricultural inputs (e.g. high-yielding seeds, commercial fertilizers, and other inputs) that distorted market signals and discouraged distributors from selling inputs in rural markets. To assist households in accessing nutritious foods in rural markets, SPIR supported the production and consumption of eggs and poultry by improving the availability and quality of feed and chicks; training suppliers and veterinary service providers; and training producers to enhance poultry yield through improved chicken house construction, local feed production, poultry health, and input marketing. This example highlights the diversity of paths which can be taken toward nutritious food availability and affordability. In light of the Inclusive Market and Food Systems Model presented above, the ongoing challenge in the SPIR project will be not only to increase production for food-insecure households, but also to facilitate diet change to increase consumption of nutritious crops, eggs, and meat.

CARE and World Vision encourage private sector suppliers to reach rural smallholders and invest in nutrient-rich crops. CARE's Graduation with Resilience to Achieve Sustainable Development (GRAD) initiative is a five-year, USAID-funded project designed to help the government of Ethiopia find sustainable solutions to chronic food insecurity. More than 4,000 GRAD households living in the Ethiopian Highlands engaged in the value chain for vitamin A-rich sweet potatoes. GRAD addressed numerous constraints in the sector, including facilitating access to quality seed. Potato seed is produced by very few research facilities and is typically distributed through farmers' cooperatives. Supply often falls short of demand and distribution networks do not reach poor households. GRAD facilitated the installation of diffused light storage (DLS) systems to extend the life of potato seeds and ensure a quality seed supply for the subsequent production season (CARE, internal monitoring

reports). Using natural, indirect light to reduce storage loss, DLS can be provided with available, low-cost materials. Before DLS technology, sweet potato growers experienced significant seed loss. Those using DLS have seen average incomes increase from $650 to $5,454 in one year. Farmers benefit from income gains and from the direct consumption of a nutritious food. The GRAD example illustrates how production-enhancing technology was applied to a nutritious food in contrast to focusing on a more developed but less nutritious commodity chain. Considering the proposed model, GRAD faces the ongoing challenge of producers translating increased income into improved household nutrition.

World Vision's *Village Agent Guide* (2018) describes an approach that uses village agents as brokers to facilitate business linkages among producers in rural areas and service providers – typically buyers or sellers of agricultural products – in urban areas. In World Vision, CARE, and SNV's Enhancing Nutrition, Stepping Up Resilience and Enterprise (ENSURE) food security programme in Zimbabwe, village agents serve in several capacities, including:

- completing market research on behalf of the producer groups;
- building strategic linkages with buyers;
- mentoring farmers and producer groups to better understand input and output markets;
- facilitating meetings between producer groups and buyers and suppliers;
- identifying challenges in marketing;
- recommending solutions to producer groups;
- leading producer groups to develop business plans;
- negotiating marketing agreements with buyers;
- maintaining marketing records for producer groups;
- connecting food-insecure households to nutritious crops in output markets.

ENSURE's village agents promote nutritious foods such as millet, pumpkin seeds, amaranth leaves, sesame, ground nut, cowpea, baobab, bambara nut, sweet potato, moringa, watermelon seed, sorghum, avocado, yams, eggs, and milk. Village agents provide improved business relationships by negotiating better terms for farmers with input suppliers and output market buyers, increasing efficiency and reliability in information flow and enhancing the movement of goods and services between farmers and other market actors. The village agent is especially crucial in rural and remote areas which have limited access to inputs, advisory services, extension services, and government resources. Extending the reach of village agents empowers women engaged in agriculture and lessens the distance between women farmers and crop protection services, high-quality seed, and other inputs. Village agents are important in nutrition-sensitive market systems development because they can serve as a conduit for information on the availability and growing of nutritious crops and livestock and they can provide needed links to input and output markets.

As with any approach, the test is if household incomes, market efficiencies, and household nutrition is sustained beyond the life of the project. The limitation with the village agent approach is whether the village agents have enduring, working connections to informal or formal suppliers and buyers. If market actors do not

engage with village agents, agricultural value chains will remain out of reach of food-insecure households. This is especially true in an economy such as Zimbabwe where prices are increasing, formal sector companies are going bankrupt, and the economy is becoming increasingly informal (Medina and Schneider, 2018).

Gender and cultural norms

A woman's influence over assets and productive resources affects her ability to make decisions about household agriculture and nutrition (United Nations, 2016). To enhance nutrition outcomes via gender and cultural norms, CARE and World Vision focus on behaviour change with drivers that shape food purchase, consumption, and preparation influences. In the Char and Haor regions of Bangladesh, the USAID-funded CARE Strengthening Household Ability to Respond to Development Opportunities (SHOUHARDO) III programme employs a layered approach to improve the nutrition of pregnant and lactating women and adolescent girls by stabilizing consumption of nutritious foods through supplementary food assistance, increased dietary diversity, homestead crop production, and crop diversification. The programme combines indirect nutrition interventions – including a focus on women's empowerment – as a key driver of improved nutrition. Increasing women's economic potential and power in household decision-making, along with direct nutrition interventions, such as child feeding, generates sharper decreases in child malnutrition than direct interventions alone. To date, average incomes have more than doubled for women participating in the programme.

SHOUHARDO also facilitated empowerment via village savings and loan associations (VSLAs) wherein women pool their money to access loans and expertise to start small businesses. Women's groups at local, regional, and national levels were trained additionally in leadership and decision-making skills. The results of enhancing the access of women to resources were that household dietary diversity nearly doubled and the number of children from 23 months to age six who had an adequate diet rose from 8 to 50 per cent. The number of stunted children dropped by 13 per cent – more than double the national average of gains during the same period. The number of months per year that families spent without enough food dropped from over six to one. Average household income grew by 85 per cent compared with the national average of 60 per cent during the same period. After the intervention, women were three times more involved in income-generating activities than previously, 15 per cent more likely to control their earnings, and 2.5 times more likely to access antenatal care. SHOUHARDO demonstrates that investing in women's economic potential and empowerment, combined with focused messaging on the importance of dietary diversity, can decrease child malnutrition (DeVries et al., 2018).

Women's access to savings enhances nutrition security, enabling households to obtain nutritious foods year-round. Several of CARE's projects include facilitating or partnering with VSLAs to enhance access to funds for agriculture, livestock, and increasing the consumption of nutritious foods. For example, CARE's Actions Integrated Nutrition and Food Project (AINA) in Madagascar contributed to a 28 per cent

increase in food consumption. Women, who joined VSLAs and participated in the programme, were 30 per cent more likely to have acceptable diets than at baseline and 70 per cent more than in any other district where the programme operated. These gains occurred during a time when food production dropped in CARE's target area because of extreme drought. The number of children who ate enough healthy food went up more than six times – from 11 to 70 per cent – and severe malnutrition dropped by 21 per cent. Having access to additional funds during lean seasons helped stabilize household consumption of nutritious foods. When combined with nutrition messaging through VSLAs, the programme achieved dramatic improvements in household nutrition (Ranaivoarison et al., 2017).

In Zimbabwe, World Vision, CARE, and SNV's ENSURE programme empowers women to participate in contract farming in the private sector as a way of increasing their influence in agricultural value chains. From April to June 2018, 100 (52 male and 48 female) farmers were linked to a large food company to produce and sell Michigan pea beans. Women have found this production-purchasing agreement empowering since it allows access to loans from a local financial institution. Each farmer received an average loan of $267 to purchase seed, fertilizer, and other inputs, and to pay for electricity used in irrigation. A contract with output market buyers and the loans provide women with more voice in household and community decisions (World Vision, unpublished internal monitoring reports). Greater leverage in household financial decisions can lead to improved nutrition, especially for children. Gender training events for staff members and gender dialogues for communities enable staff to reflect on how well project interventions are facilitating women's empowerment, especially as it relates to household financial and nutritional decisions.

The ENSURE programme in Zimbabwe aims to improve the nutrition of women of reproductive age and children under the age of five, increase and improve agricultural production and marketing, and increase communities' resilience and response to disasters and shocks. ENSURE engages mothers, fathers, grandparents, and community leaders in dialogues about social norms and practices that affect household nutrition. The programme has created safe spaces for men to talk with their families and peers on gender and nutrition. The dialogues are led by trained male advocates drawn from the community. A 2017 survey demonstrated that as men became more informed about household nutrition, joint decision-making about nutrition increased from 50 to 87 per cent in one year. ENSURE recorded an increase in the number of reproductive-age women receiving support, with three or more household activities increasing from 60 to 80 per cent in two years. Women increased their consumption of iron-rich foods by 30 to 92 per cent in the fifth year of the project (World Vision, internal monitoring reports).

As an example of addressing cultural norms, during the implementation of their GRAD programme in Ethiopia, CARE partnered with the International Potato Centre (CIP) and others to introduce an orange-fleshed sweet potato (OFSP) to households in selected GRAD areas. Recognizing that increased income from farming does not necessarily lead to direct consumption, GRAD incorporated nutrition messaging and training on sweet potatoes. OFSP has become part of a regular diet in many households because of cooking demonstrations, sweet potato product development,

and continued education about the nutritional benefits of sweet potatoes (CARE, internal monitoring reports).

CARE's SUN (Scaling Up Nutrition) Fund partners with businesses to help food companies design or refine their marketing and sales practices for low-income consumers. The programme focuses on best practices in the nutrition value chain, including value proposition, marketing strategy, sales force organization, and economic sustainability, incentivizing food companies to reach low-income consumers. In Madagascar, SUN partnered with Nutri'zaza to sell Koba Aina, a locally produced fortified infant flour that meets local tastes and consumption habits. Koba Aina is sold door-to-door and in 'baby restaurants', or storefronts where women entrepreneurs sell prepared infant porridge. From February to September 2013, Nutri'zaza sold 1.4 million meals to 34,000 active consumers and another 800,000 meals to social institutions. In baby restaurant neighbourhoods, 17 per cent of infants are regular consumers (CARE, internal monitoring reports).

In light of the Inclusive Market and Food Systems Model, each of the projects cited above addresses gender and cultural norms. The ongoing challenge will be to have positive changes in women's participation in market systems beyond the life of the projects. Private sector suppliers, buyers, and financial institutions will need to continue to see financial advantages for including women in their business operations. During the life of the project, staff need to reinforce the importance of purchasing and consuming nutritious foods.

Policy and regulation

Since the Green Revolution, agricultural investments and government policies in the developing world have tended to promote productivity growth in staple cereal crops. Nutrition-sensitive programmers have a role in working with governments to facilitate policy and investment change from cereal intensification to diet diversification. This includes supporting broad-based participation and facilitating investment partnerships with the private sector.

CARE works with governments in addressing malnutrition at a country level through food policy and regulations. The SUN Fund in Zambia is a joint financing mechanism established to support the government of Zambia's First 1,000 Most Critical Days Program (MCDP). CARE implemented SUN through a consortium, in partnership with the government of Zambia's National Food and Nutrition Commission. Collaboration between CARE and the Zambian Government facilitated improved district-level planning for MCDP through the establishment and support of District Nutrition Coordination Committees. Coordination through multiple ministries – including Community Development, Health, Mother and Child Health, and Agriculture – allowed for sensitization activities that increased the average intake of iron and folic acid, complementary feeding, and breastfeeding. In eastern Zambia, many believe that colostrum is dirty and should be discarded. Because of CARE and the Zambian Government's engagement through SUN, 84 per cent of mothers in the region now report giving colostrum to new-borns (Mapoma and Bwalya, 2018).

Citizen Voice and Action (CVA) is a key sustainability driver in World Vision's programming. CVA combines civic education, social audits of government standards, community services scorecards, and advocacy based on citizen-generated data to effect changes in government policy and practice. The approach is now used in more than 630 programmes or more than one-third of World Vision's programmes across 48 countries. World Vision has applied its CVA social accountability approach in the Nobo Jatra Food Security programme in Bangladesh with local government agricultural service units aimed at improving the agricultural service provision to farming communities. Meetings are conducted with local government officials and with division and district officials to acquaint them with CVA. Monitoring sessions are facilitated with government agricultural extension service providers and with community members. The project has conducted scorecards with farmers to get their feedback regarding government agricultural extension services. Service-improvement meetings have been facilitated with service providers, community members, and senior government officials.

In summary, our organizations address policy and regulation at national, regional, and local levels by coordinating with ministries at various levels of government to address nutrition awareness and agricultural services. The Inclusive Market and Food Systems Model challenges development practitioners to develop effective project levers that improve the regulation of policies at all governmental levels in addressing food security, especially as measured by dietary diversity and stunting. World Vision's CVA emphasizes citizen action at the local level to improve government policy implementation. CARE's work with the SUN Fund with the Government of Zambia has the potential to change the food system to improve nutrition. With limited project funds, project designers will need to discern the wisest course of action to improve the implementation of government policy at national, regional, and local levels. Furthermore, it may be government policies or their implementation that particularly limit informal and formal sector business investment at local, regional, or national levels. Influencing policy implementation in government units is a new area for many development practitioners in financial services and value chain and market systems development. Donors play a key role in providing guidance for project implementers to positively impact the food system that improves dietary diversity and child stunting, with a focus on working with food-insecure households as producers and consumers.

Conclusion

Improving food security and nutrition for vulnerable households is a critical concern in global development. Market systems offer a sustainable response to food security but can overlook important nutrition dynamics and outcomes if food systems are omitted. Improving household nutrition must include an understanding of the nutritional constraints faced by households and particularly those of pregnant and lactating women and children. Food security programmes that combine a market systems approach with the nutritional insights of food systems can multiply nutritional outcomes in rural households.

Considering the Inclusive Food and Market Systems Model illustrated by the field experience of CARE and World Vision, three summative insights and accompanying recommendations can be offered for designing nutrition-sensitive food security programmes:

Bring the market to vulnerable households. Functioning market systems are not always *inclusive* market systems. Without intentionally integrating women and vulnerable individuals into agricultural value chains, the poorest households often remain marginalized and without access to the inputs, training, or financial resources to access nutrient-rich foods. Where organizations such as CARE and World Vision have had the most success is in bringing markets closer to rural communities through private sector partnerships and by creating linkages to output markets where few or none existed previously. Where there are no linkages, connections can be created through village agents or agro-dealers that represent that last mile in reaching rural small-scale farmers. This can make the difference in increasing rural household access to inputs for nutrient-dense crops and livestock while also increasing their access to new output markets and sources of income, enhancing their ability to grow, purchase, and consume nutritious foods. Development practitioners should continue to facilitate changes in market actors and government institutions to increase the consumption of nutritious foods especially for pregnant and lactating women and children under five in rural and urban settings.

Access does not equal consumption. Addressing the underlying causes of food and nutrition insecurity within households is critical for any food security programme. While market and food systems are highly contextual, inclusive market systems that specifically target the nutrition of extremely poor and vulnerable households can generally yield benefits for the entire household. Some food security programmes have failed to improve nutritional outcomes in the past by focusing solely on developing market systems without attention to how those systems increase the consumption of nutritious foods. In food security programmes such as ENSURE, GRAD, SHOUHARDO, and SPIR, World Vision and CARE integrate nutrition messaging into programme activities to closely link individual nutritional outcomes to the broader food systems. Rather than assuming that an increased supply of nutritious foods will naturally lead to consumption of those foods by poor and vulnerable households, a food systems approach attempts to understand the gender, social, and cultural dynamics that affect how individuals access and consume nutritious foods. More programme designs are needed in market systems to encourage informal and formal sector market actors to market nutritious foods to food-insecure households.

Empowering women multiplies nutritional outcomes. We were struck by the presence of gender issues in multiple aspects of market and food systems programming – a point understood by the authors of many studies. As illustrated by CARE and World Vision's global programming, targeting the differential needs, capacities, and influence of women in household nutrition has resulted in increased nutritional outcomes for the entire household, and particularly for children under five years old. Combining elements from market and food systems complicates programming

(Hoddinott et al., 2015; Gelli et al., 2018; Kirk et al., 2018; Vandercasteelen et al., 2018). However, CARE, World Vision, and their partners illustrate that supporting women's economic empowerment and increased participation in household decision-making, combined with active messaging on the importance of growing or purchasing nutritious foods and partnerships with private and public sector actors, can produce remarkable results in decreasing maternal and child malnutrition and increasing the nutritional status of the entire household.

Looking ahead, additional research needs to be done to understand what enables nutritional gains from market systems programming to falter or endure beyond the life of the project. Also, the synergies of market systems and food systems need to be developed in project designs even more than in the past.

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