

Value chain development with the extremely poor: evidence and lessons from CARE, Save the Children, and World Vision

DAN NORELL, EMILY JANOCH, ELLY KAGANZI,
MALINI TOLAT, MONTY L. LYNN,
AND EMILY C. RILEY

CARE, Save the Children, and World Vision are combining value chain development (VCD) with gender and nutrition programming to alleviate poverty and food insecurity among the extremely poor. We explore what is unique about VCD with the extremely poor and how specific levers enhance productivity and profitability, equity, and empowerment. We offer evidence to date and lessons learned.

Keywords: value chain development, extreme poor, smallholders, market systems development

The majority of the world's poorest people live in South Asia and Sub-Saharan Africa. Most of these households engage in rural farming and subsist on incomes at or below the international extreme poverty line of US\$1.90 per person per day (our working definition for the 'extremely poor') (FAO, 2015). CARE, Save the Children, and World Vision are applying inclusive value chain development (VCD) among households living in extreme poverty in an effort to catalyse sustained food security. In this article, we discuss how VCD can be applied with the extremely poor and how five levers of change can improve livelihoods: 1) capacity; 2) access; 3) productivity; 4) household influence; and 5) enabling environment. We describe examples of how market-based approaches can be utilized effectively to enhance food security. Although they may be distinctive at points, we highlight the complementary approaches and outcomes utilized by CARE, Save the Children, and World Vision in facilitating VCD. We conclude with programming recommendations.

Dan Norell, MSW, MBA (dnorell@worldvision.org) is Senior Technical Advisor, Economic Development at World Vision; Emily Janoch, MPP (ejanoch@care.org) is Deputy Director, Knowledge Management and Learning at CARE; Elly Kaganzi, MA (ekaganzi@care.org) is Senior Technical Advisor, Markets and Livelihoods at CARE; Malini Tolat, MA (mtolat@savechildren.org) is Livelihoods Advisor Asia at Save the Children US; Monty L. Lynn, PhD (lynnm@acu.edu) is Professor of Management, College of Business Administration at Abilene Christian University; and Emily C. Riley (emilych@Princeton.edu) is a PhD candidate in the Department of History at Princeton University. The authors would like to thank Laté Lawson-Lartego, DBA, Senior Director of the Food and Nutrition Security Unit at CARE USA for his contributions to the article.

© The authors. This open access article is published by Practical Action Publishing and distributed under a Creative Commons Attribution Non-commercial No-derivatives CC BY-NC-ND license. <http://creativecommons.org/licenses/by-nc-nd/4.0/>
<http://dx.doi.org/10.3362/1755-1986.16-00024>, ISSN: 1755-1978 (print) 1755-1986 (online)

The Extremely Poor

Several studies support a variety of linkages between market engagement, poverty, and food security among the extremely poor (e.g. Leahy and Goforth, 2014; Poole et al., 2013). Stifel and Minten (2017), for example, demonstrate how transportation costs and isolation from markets contribute to lower input use, less agricultural production, and poorer diets. Smith and colleagues (2013) show that reducing structural food security obstacles in households and markets can reduce stunting (low height for age – a measure of malnutrition) among the extremely poor. Likewise, Norell et al. (2015) and Faveri et al. (2015) demonstrate how push-and-pull strategies facilitate market inclusion and enhance food security for women and the extremely poor.

When applied to the extremely poor, VCD often takes on four distinctive qualities:

1. *Households are the focus.* By targeting ‘the consumer, not the farmer’ (Pittore, 2016: 2), VCD enhances pro-poor outcomes at the household level. Although traditional goals, such as enhanced income, may be included, VCD interventions with extremely poor households typically include diversified diets, improvements in maternal and child nutrition, and other nutrition-related outcomes (Gelli et al., 2015).
2. *Interventions address the considerable challenges faced by the extremely poor.* Many of the extremely poor live in isolated, rural locales where market failure occurs. High transaction costs and information asymmetries, plus technical, physical, and financial deficits, make VCD difficult and sometimes infeasible (Pittore, 2016; Stoian et al., 2012).
3. *Market, gender, and household dynamics interact.* Social, cultural, and environmental factors such as conflict, gender dynamics, and water scarcity impact value chains and market development (USAID, 2014). Household, gender and market dynamics interact to augment value chain, agricultural productivity, and nutritional interventions (Gelli et al., 2015).
4. *Broad market systems are engaged.* Extremely poor households often benefit from engaging multiple value chains in informal and formal markets as producers, processors, and entrepreneurs. Developing multiple chains is often necessary (Pittore, 2016). Multisectoral programmes that include health and nutrition components among the extremely poor often are required rather than focusing exclusively on agricultural value chains (Levinson et al., 2015).

Value chains operate within market systems, which have been described by Campbell (2014: 2) as ‘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.’ Market, nutrition, gender, and other factors intertwine across household, value chain, and market system levels of analysis. This is part of what makes extremely poor households unique in VCD. Embedded at each level are issues and levers of change, such as those reflected in CARE’s Pathways theory of change (see Figure 1), that focus on enhancing productivity and profitability, equity, and empowerment

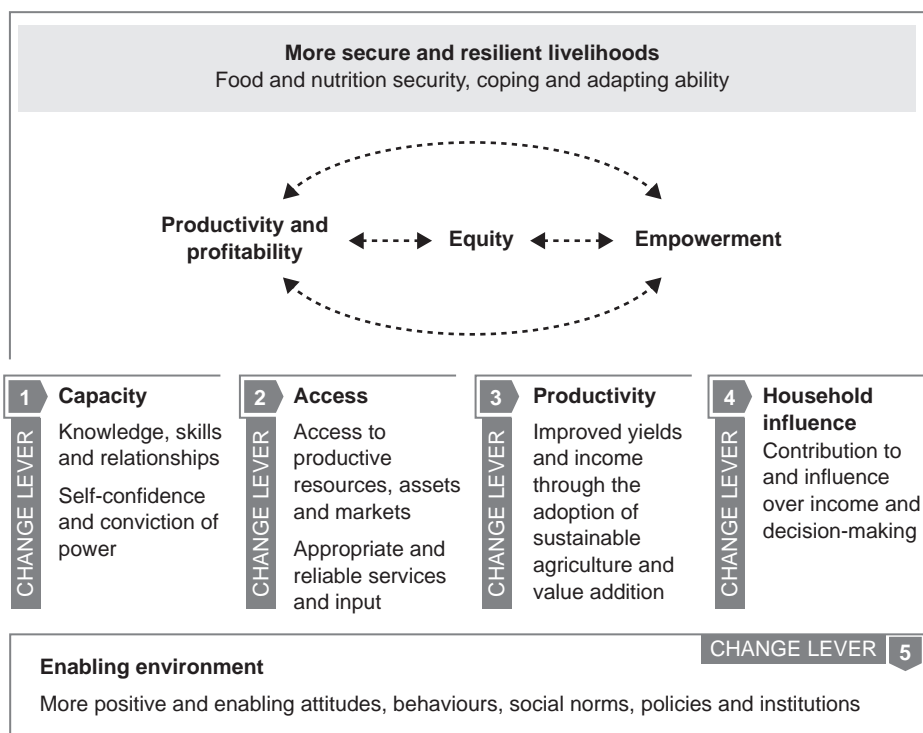


Figure 1 CARE Pathways theory of change

Source: Adapted from Brown et al., 2016: 2

using levers of capacity, access, productivity, household influence, and the enabling environment.

Many VCD models aim to enhance productivity and profitability. VCD among the extremely poor must also address the empowerment of marginalized women farmers and consumers, and gender equity with women and men. Value chains and market systems can exclude the extremely poor, intentionally or otherwise, through social, economic, and physical barriers, limiting the capacity, access, productivity, and household influence of women (Ribot and Peluso, 2003). Many of these gaps can be bridged through VCD innovations (Bolwig et al., 2010; Stoian et al., 2012).

Programming innovations

This section describes efforts to enhance productivity and profitability, equity, and empowerment. We use the five levers highlighted in Figure 1 – capacity, access, productivity, household influence, and enabling environment – to describe VCD initiatives implemented by CARE, Save the Children, and World Vision among the extremely poor in Bangladesh, India, Ghana, Malawi, Mali, Niger, Tanzania, and Zimbabwe. Where available, evidence from external and internal evaluations documenting initiative impact is provided (see Table 1).

Table 1 Value chain facilitation programmes, activities, and impact examples

<i>Levers/drivers</i>	<i>Activities</i>	<i>Programmes (organization)</i>	<i>Countries</i>	<i>Impacts</i>
Capacity	Lead farmers: trusted; provide technical assistance; coordinate suppliers and buyers	Nobo Jibon (Save the Children)	Bangladesh	Large increase in sales by companies involved; dramatic changes in farmer seed purchasing (Langworthy et al., 2015)
Capacity	Agribusiness information centres: provide technical assistance and supply and pricing information	Nabo Suchana (World Vision)	Bangladesh	Increased dissemination of knowledge and timely delivery of agricultural information; increased percentage to 70% of micro-producers aware of market information; improved credibility and linkages of input dealers and retailers to farmers (Innovision Consulting, 2015)
Capacity	Mobile information: facilitated mobile platforms to disseminate market information	ENSURE (CARE, Netherlands Development Organization (SNV), World Vision)	Zimbabwe	5,000 farmers receive market information via cellular platform (World Vision, 2016a)
Capacity	Mobile finance: facilitated mobile savings and loan products through bank and mobile partnerships; producer and marketing groups purchase or sell in bulk through groups	ENSURE (World Vision, SNV, CARE)	Zimbabwe	Cash flow for producers and entrepreneurs; fees discourage use (World Vision, 2016a)
Capacity	Market linkages: women's and producers' groups learn marketing skills and build stable relationships with output markets to increase sales and prices	Pathways (CARE)	Bangladesh, Ghana, India, Mali, Malawi, Tanzania	Farmers in Ghana and Malawi have doubled the amount of products they sell in recognized agricultural markets (Brown et al., 2016)

(continued)

Table 1 Continued

<i>Levers/drivers</i>	<i>Activities</i>	<i>Programmes (organization)</i>	<i>Countries</i>	<i>Impacts</i>
Access	Village agents: trusted and local; provide technical advice and inputs; paid by seed companies; increase awareness regarding improved seed	For Every Child Value Chain (World Vision); LAHIA (Save the Children, World Vision); Nobo Jibon (Save the Children)	Malawi, Niger, Bangladesh	In Niger in the 2016 growing season, village agents facilitated farmer access to 11.9 tonnes of improved seeds and other inputs up from 2.1 tonnes in 2015; provided technical assistance to 1,985 farmers on soil fertility management, micro-dosing and mix-cropping techniques, bio pesticides, crop density, and post-harvest techniques, such as cowpea storage using Purdue Improved Cowpea Storage bags (Langworthy et al., 2015; Norell et al., 2015; World Vision, 2016b)
Access	Agri-kiosks: 15 provide inputs for 6,000 acres of land each; future services planned (e.g. soil health cards)	Pathways, Strengthening the Dairy Value Chain (CARE)	India, Bangladesh	Farmers experienced a 31% increase in their incomes and vendors earned US\$1,394 per month – eight times the average income for farmers in the area; farmers halved the time they spent going to get inputs (a 58% reduction) and dropped their cost on items like feed by 92%; shop owners saw a 25% increase in their sales and a market of 17,000 customers per month (Brown et al., 2016; McKague and Siddiquee, 2014)
Access	Input fairs: provide inputs to 4,000 farmers	Pathways (CARE)	Ghana	Increased use of inputs by 40% (Brown et al., 2016; Downen et al., 2016)
Access	Agro-dealers: trained suppliers in inventory management; linked suppliers and village agents; banks and seed companies encouraged to offer financing	Nobo Jibon (Save the Children); ENSURE (CARE, SNV, World Vision)	Bangladesh, Zimbabwe	Input sales and usage increased (Langworthy et al., 2015; World Vision 2016a)
Access	Buying centres: facilitate bulk selling and competitive pricing; producer representatives visit farmers; pre-planting meetings with suppliers and producer groups	Nabo Suchana (Save the Children); Nobo Jibon (Save the Children); ENSURE (CARE, SNV, and World Vision)	Bangladesh, Zimbabwe	Benefit-cost ratio = 10.43; pricing transparency; less information asymmetry; farmers achieved gross margins of US\$1,028, exceeding past seasons and target of \$155 (Innovision Consulting, 2015; World Vision 2016a)

<i>Levers/drivers</i>	<i>Activities</i>	<i>Programmes (organization)</i>	<i>Countries</i>	<i>Impacts</i>
Productivity; Household influence	Vaccination: rural entrepreneurs trained to vaccinate chickens and ducks	Nabo Suchana (Save the Children)	Bangladesh	Entrepreneurs earning \$20 per month; increased animal vaccinations (Innovision Consulting, 2015)
Productivity; Household influence	Workload sharing	ENSURE (CARE, SNV, and World Vision)	Zimbabwe	The proportion of female participants in USG-assisted programmes designed to increase access to productive economic resources (assets, credit, income, or employment) increased from 30% to 50% for 10–29 year-olds in one year (World Vision, 2016a)
Productivity; Household influence	Changing gender dynamics in the household: couples' gender dialogues, community forums	Pathways (CARE)	India	Families increased their spending on protein and vegetables by 15%; 56% of families increased their spending on health care and education; women were 84% more likely to be able to influence household decisions in 2015 than they were in 2012 and 250% more likely to make decisions about income-generating activities at home (Brown et al., 2016)
Productivity; Household influence; Enabling environment	Community dialogues, care groups, and men's groups: men and women discuss gender roles in households	Pathways (CARE)	Bangladesh, Ghana, India, Malawi, Mali	200% increase in agricultural yields of women and the extremely vulnerable; over 11,000 hectares of land accessed by women; women grew 537,498 tonnes of increased agricultural production; women in leadership positions increased from 20% to 60%; 70–90% adoption rates of improved agricultural techniques; rates of female farmers accessing agricultural extension services increased 63–89% in different countries (Brown et al., 2016; Downen et al., 2016)

Continued

Table 1 Continued

<i>Levers/drivers</i>	<i>Activities</i>	<i>Programmes (organization)</i>	<i>Countries</i>	<i>Impacts</i>
Enabling environment	Marketing committees: 85% women membership; training in supply forecasting, cost-benefit analysis, and business plans	Pathways (CARE)	Bangladesh, Malawi, India, Mali, Ghana, Tanzania	200% increase in yield; \$4 million in revenue for female farmers and businesses; the 35% point spread between men and women on control over the purchase or sale of assets was reduced to 19%; likewise, the 44% point spread between men and women for control of productive decisions was reduced by 11 points, to 33% (Brown et al., 2016; Weatherhead et al., 2016)

Capacity

Although infrastructure development may be beneficial, it is often knowledge and human capital that initially limit the development of sustainable agricultural production (Fanadzo et al., 2010). To enhance capacity to engage in value chains, the ENSURE programme in Zimbabwe – implemented by CARE, Netherlands Development Organization (SNV), and World Vision – facilitated the development of mobile platforms that disseminated market information to 5,000 farmers through cellular phones. In World Vision's Nabo Suchana ('A Fresh Start') programme in Bangladesh, agribusiness information centres provided information to farmers about quality inputs, farm production techniques, price comparisons of inputs in different markets, and information about fertilizer and other input usage. Mobile technology appears to have reduced information asymmetries among poor farmers, enabling increased capacity.

Save the Children promoted lead farmers as local intermediaries in Bangladesh to become trusted sources of information and link farmers with input suppliers and other services in remote areas (Langworthy et al., 2015). Lead farmers play a role both in input and output markets, serving as points of contact for input suppliers to collect demand data, demonstrate new technologies, and collect bulk input orders, while facilitating the aggregation of commodities from small producers or sharing transportation costs to reach distant markets. It is often in the relationship with the lead farmer that extremely poor farmers develop a greater sense of self-confidence. Training programmes provide support to bring the extremely poor into different markets gradually over time. Some markets have an easier entry, such as vegetables, where the production can be consumed or sold in the neighbourhood. Cattle, on the other hand, has a higher entry requirement of financial capital and input/output markets further from the household.

Access

Extremely poor producers often are located far from markets, which increases the transaction costs of obtaining supplies, training and pricing information, and connecting with buyers (Fowler and White, 2014). The findings of a recent study in northern Ghana (McKague and Siddiquee, 2014) were typical in that about half the farmers surveyed were located a relatively long distance (32 km) from the nearest farming supplier. Approaches used to lower the cost of agricultural supplies and enhance access include village agents, agri-kiosks, input fairs, and agro-dealers.

World Vision partnered with input suppliers in Malawi to identify and train village agents to provide a variety of agricultural services, often under an exclusive contract with a single supplier (Norell and Brand, 2014). Village agents live in or travel to rural locations where extremely poor producers can ask them about crop problems. Agents provide technical advice and link extremely poor producers to inputs (see Figure 2). The village agent model reduces transaction costs for input suppliers by bulking orders and facilitating new markets in rural areas. Village agents offer a potentially trustworthy relationship, which does not always exist when strangers offer inputs or advice (Fowler and White, 2014).

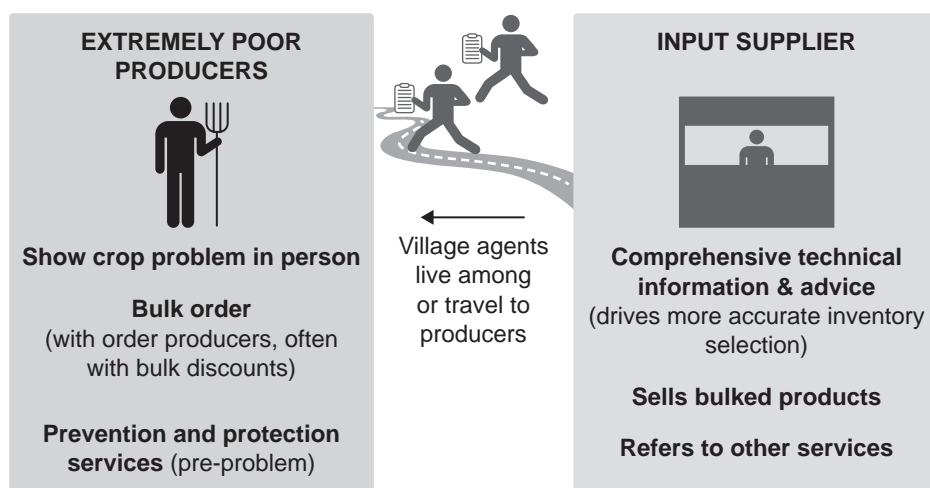


Figure 2 Village agent model for input supplies

Source: Norell and Brand, 2014: 36

In Niger, Save the Children and World Vision's LAHIA (Livelihoods, Agriculture and Health Interventions in Action) programme has employed a village agent model. In many of these areas, farmers have limited access to extension services (one government agricultural extension agent for 50 villages or 35,000 people) and few relationships with agro-dealers owing to distance – often 35–65 km away. Each of the 29 project-trained village agents works within a village of about 700 people. They are paid a commission by a seed company to provide sales of seeds and production advice at the village level. The communities select the village agents and seed company representatives and project staff train them on seed multiplication and production-enhancing techniques.

In the 2016 growing season, village agents facilitated farmer access to 11.9 tonnes of improved seeds, up from 2.1 tonnes in 2015. Village agents provided technical assistance to 1,985 farmers during the 2016 growing season on soil fertility management and disease control, using micro-dosing and mix-cropping techniques, bio pesticides, crop density, and post-harvest techniques, such as cowpea storage using Purdue Improved Cowpea Storage bags. World Vision documented in monitoring data that agro-dealers facilitated market access for 725 smallholder products for bulk selling, with 47 per cent of the farmer clients being women (World Vision, 2016b). This model has created jobs for microentrepreneurs at the community level and the model is being disseminated in Niger by the government, seed suppliers, agro-dealers, and development agencies with government technical support. The government is developing a certification for seed sellers and village agents and World Vision is developing an operational guide for village agents. In CARE's Pathways programme (Brown et al., 2016), Krishi Utsho micro-franchise social enterprise (CARE, 2015), and Strengthening Dairy Value Chain programmes in Bangladesh (McKague and Siddiquee, 2014), outcomes linked to agri-kiosks include

higher incomes for farmers, cheaper, easier access to products, stronger businesses, healthier families, and empowered women.

A CARE (2015) pre- and post-measure assessment of 400 farmers for the Krishi Utsho micro-franchise network in Bangladesh from 2012 to 2015 found:

- *Higher incomes:* Farmers in areas covered by micro-franchising had a 31 per cent increase in income, and vendors were able to earn \$1,394 per month or more than eight times what the average farmer makes in a month.
- *Cheaper, easier access to products:* Farmers cut the time they spent getting inputs by 58 per cent and dropped their cost on inputs such as feed by 92 per cent.
- *Stronger businesses:* Shop owners saw a 25 per cent increase in their sales – serving nearly 17,000 people a month in 2016.
- *Healthier families:* Farmers in the Krishi Utsho micro-franchising areas increased their spending on protein and vegetables by 15 per cent. Fifty-six per cent of families used their new income to increase spending on health care and education.
- *Empowered women:* Women were asked if they could influence household decisions. Following the programme, 85 per cent of women reported that they could influence household decision-making in 2015, compared with 46 per cent before the programme in 2012; 95 per cent of women reported being able to influence a decision on household renovation after, compared with 25 per cent before; and 84 per cent of women reported being able to influence their husbands' selection of an income-generating activity compared with 24 per cent prior to the programme.

In Ghana, CARE's Pathways programme has used input fairs rather than kiosks to facilitate access. Over 4,000 farmers and traders have participated in at least one fair, leading to a 40 per cent increase in input use (Downen et al., 2016: ix). To facilitate input supply linkages, the ENSURE programme in Zimbabwe trained 66 agro-dealers to improve their inventory systems, facilitated the organization of farmer associations, connected agro-dealers with a commercial bank for loans, promoted a fund for agro-dealers to purchase inputs, and encouraged seed companies like DuPont Pioneer and SeedCo to provide seed on consignment to dealers. These efforts enhanced the capability of input suppliers to reach rural communities where previously only 26 per cent of farmers had purchased inputs from agro-dealers (World Vision, 2016a). Similarly, Save the Children's Nobo Jibon project in Bangladesh provided training to the local representatives of input supply companies, facilitating linkages with the dealers and village agents, and increasing awareness among farmers of the benefits of using improved seed varieties. As demonstrated in Figure 3, the impact of these strategies contributed to an increase in sales by the companies and dramatic changes in farmer seed purchasing.

ENSURE in Zimbabwe partnered with Steward Bank and EcoNet – a cellular telecom service provider – to create a mobile money savings platform. With the service, farmers with savings accounts can apply for an 'Eco-loan'. The loan enhances cash flow for producers and rural entrepreneurs. Producer and marketing groups buy or

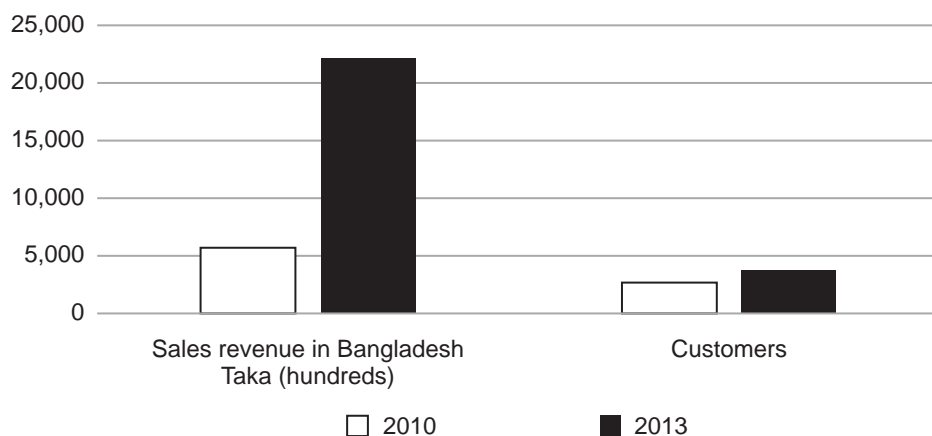


Figure 3 Nobo Jibon (Bangladesh) agro-dealer sales revenue and customers, 2010 and 2013

sell in bulk through groups, achieving economies of scale and acting on behalf of the members. One challenge for extremely poor producers is the nearly six per cent service charge on smaller transfers (\$100), which reflects agent charges and bank and government fees. Although promising in theory, the innovation has not been adapted by large numbers of farmers because of the current macroeconomic decline in the country, limited network coverage in rural areas, high fees, and insufficient liquidity of local stores that act as agents. To address these challenges, ENSURE in one location facilitated a contract between farmers and a hatchery that provides local variety one-day-old or seven-day-old chicks and buys the eggs or broiler chickens. With these contracts, the farmers are able to get a loan from a bank disbursed and make repayments on a mobile platform (World Vision, 2016a).

In Bangladesh, farmers are often forced to sell their rice at distant markets, spending significant sums for transportation. World Vision's Nabo Suchana project facilitated selling points in rural communities to help farmers sell small amounts of rice at a competitive price. The external final evaluators found that over the five years of the project's life, there was a \$10.43 increase in targeted households' incomes for every \$1 invested in the project (see Table 2) (Innovision Consulting, 2015). The Nabo Suchana external evaluators stated the following:

The field study revealed that this significant increase in income was achieved due to the following reasons:

Higher productivity and low input costs: Beneficiaries have experienced a 38% reduction in production cost from the baseline while increasing productivity by 15%.

Engagement of women in economic activities: Women have been seen to efficiently manage poultry rearing and homestead vegetables cultivation. Chicken and duck rearing have been found to be the most popular activities for women.

Apart from livestock, some women have been found to be investing in small multipurpose shops, handicrafts or petty trading etc. (Innovision Consulting, 2015: 28)

Table 2 World Vision Bangladesh Nabo Suchana benefit-cost ratio

<i>Measure</i>	<i>Amount</i>
Project budget	\$878,380
Average increase in income	\$775
Total increase in income (beneficiaries=11,800)	\$9,145,000
Total benefit	\$9,145,000
Benefit-cost ratio (total benefit/project budget)	10.43

Source: Innovision Consulting, 2015

Similarly, Save the Children's Nobo Jibon programme helped establish collection centres in remote areas of Bangladesh (Langworthy et al., 2015). One of the critical factors to consider in these centres is economic feasibility based on the estimated sales potential of different segments of farmers. As the transactions increase in volume, the information asymmetry between buyers and sellers declines, and extremely poor farmers benefit from reduced transaction costs and greater transparency in pricing.

To facilitate the collection and delivery of products, ENSURE in Zimbabwe facilitates buying centres and direct deliveries of bulk produce to buyers. ENSURE encourages producer group representatives to visit the companies that buy their agricultural products, and facilitates pre-planting meetings with producer groups to relay advice from suppliers and buyers. Because of these linkages, ENSURE farmers have significantly increased land under production. At an ENSURE-assisted irrigation scheme, producer group farmers recently produced and sold sugar and navy beans (Michigan peas) to a large food processing company. On average, these bean farmers achieved gross margins per hectare of \$1,028, which is a significant increase over past seasons and over the target of \$155 (World Vision, 2016a).

Productivity and household influence

The third and fourth VCD levers for food security are productivity and household influence. Although distinct as drivers, we combine them here because they are intertwined when considering gender dynamics. As a backdrop, it should be mentioned that household investments in health – including potable water, toilets, and preventive health care – often present trade-offs for rural households forced to choose between investing in farm productivity or nutrition and health. Thus, the relationship between productivity enhancement leading to income growth and improved nutrition is not always direct. Nutrition is affected by what foods are available, affordable, and convenient to buy, who decides about food purchases, and who consumes food. Each household involved in an agricultural value chain has 'complex trade-offs between income generation, food security, gender equity, sustainable resource management, and overall livelihood resilience' (Stoian et al., 2012: 57).

Productivity is impacted by hard factors such as the increased use of inputs and training (see asset discussion earlier), but also by social factors such as gender relations. The mobility of female farmers to engage in input and output markets relevant to their production can impact productivity. Women often play

critical roles in agricultural production, food preparation, and child health and well-being (Coles and Mitchell, 2011), and they often are major contributors to total farm productivity (FAO, 2011). Despite these critical roles, women are often constrained in access and decision-making at the household, community, and market levels (Coles and Mitchell, 2011; Lambrecht, 2016). Often, they are not recognized as farmers, or are excluded from land ownership and inheritance, access to credit, fertilizer, improved seeds and extension, and control over the food that they harvest. A baseline survey of CARE's Pathways programme in Mali, India, Malawi, Tanzania and Ghana, for example, showed an average of only 22 per cent of women who had access to extension services or output markets (Njuki et al., 2013). When women were asked if they required a family member's permission to visit a range of public places, about half in Malawi (50 per cent) and Tanzania (42 per cent) achieved CARE's mobility indicator level; fewer than one in six in all other Pathways countries were considered mobile – that is, able to travel to markets, community meetings, social events, and health-care facilities without permission from their husbands. On average, over 80 per cent of women always or often must request permission to leave the house to earn money or travel outside the village.

Inside the household, a woman's ability to produce enough food is hampered by competing time demands. The matching of gender to specific crops or animals and the purpose for which agriculture is pursued (consumption vs income) eventually impacts household nutrition (Carr, 2008). When consumption crops transition to cash crops, household dynamics sometimes change and women can lose control of income to pay for children's food and health-care expenses. Increased access to farmable land can result in greater emphasis on production activities that draw children from schools and women from homestead gardening. Increasing women's access to the resources to produce, process, and market food products could increase farm yields by 20–30 per cent, raising agricultural production in developing countries by an estimated 2.5–4 per cent and reducing food-insecure households globally by 100–150 million people (FAO, 2011).

Finally, who makes the financial decisions and how they are made are often critical to the nutrition of children within households. A study in Côte d'Ivoire showed that improving a woman's income by \$10 had an equivalent impact on her children's health and nutrition as a \$100 income increase for a man (Hoddinott and Haddad, 1995).

Interventions used by the three organizations to increase women's decision-making included gender dialogues, workload sharing, and Farmers' Field and Business Schools focused on women farmers (see Markel and Gettliffe, 2017). CARE used the Women's Empowerment in Agriculture Index to measure changes in women's empowerment and decision-making:

The "Women's Empowerment in Agriculture Index" (WEAI), launched by IFPRI, Oxford Poverty and Human Development Initiative (OPHI), and USAID's Feed the Future in February 2012, is the first comprehensive and standardized measure to directly capture women's empowerment and inclusion levels in the agricultural sector. (IFPRI, 2012)

Following three years of interventions, the number of women who met the WEAI standard set by CARE more than doubled in Ghana and Tanzania, and WEAI total scores among project participants increased an average of 14 points for Mali and Tanzania and six points for India, Ghana, and Malawi (Brown et al., 2016).

Enabling environment

Within households and communities, gender issues are as important in the enabling environment as they are with other drivers. Decisions pertaining to the allocation of resources at the household level need to be determined through participation of all family members; hence community-level gender dialogues are facilitated to ensure that men, women, and youth are a part of the decision-making process at the household level. In CARE's Pathways programme in Ghana, India, Malawi, Mali, and Tanzania, the active engagement of men and boys in gender and community dialogues contributed to increased agricultural yields of women and the extremely vulnerable by over 200 per cent, a cumulative \$7.2 million in income gains across participants, and more than \$15 million in increased household savings, attributed in part to the adoption of better agricultural practices through joint decision-making. It also contributed to a total return on investment of \$32 for every dollar invested in the programme (Weatherhead et al., 2016).

The ENSURE programme in Zimbabwe utilizes care groups and men's groups to form and strengthen cohesive groups and resilience. Care groups promote health and nutrition behaviours, which impact agricultural productivity, equity, and empowerment. Men's groups have been established as a platform where men can discuss issues around supporting their families and following through with what they believe a responsible father needs to do. To date, 3,514 care groups as well as 421 men's groups with 3,596 members have been established by ENSURE (World Vision, 2016a).

CARE's experience with community-based adaptation shows that for every dollar governments invest in community planning for climate resilience in Niger, there is a return of between \$3 and \$4 (Vardakouilas and Nicholles, 2014). Similarly, CARE's work in the five countries in the Pathways project demonstrates that focusing on the needs of women through Farmers' Field and Business Schools can increase women's access to extension and information (a threefold increase), allow women to earn more (with increased incomes of more than \$7.2 million in six countries), mobilize more land (nearly 9,000 additional acres for women), and dramatically increase women's decision-making in the home (Brown et al., 2016).

With baseline figures of only 18 per cent of women in Mali and around 50 per cent of women in Malawi, India, Ghana, and Tanzania who were able to participate in agricultural decisions, CARE facilitated market committees constituted by 85 per cent women to increase female participation in output markets (Brown et al., 2016). The programme has provided training in production estimation and cost-benefit analysis and has supported market committees in developing business plans. The result has been a 200 per cent increase in yield and revenues of more

than \$7 million for female farmers and their businesses, as well as a dramatic increase in women's ability to make decisions (Brown et al., 2016: xiii–ix):

Pathways has achieved a significant increase in women's empowerment scores across all five countries. The mean women's empowerment score increased an average of 6 points for Ghana, India, and Malawi Pathways participants, and 14 points for Mali and Tanzania. Achieving empowerment (.80 or greater score) more than doubled in Ghana (8% at Baseline to 16% at End line) and Tanzania (20% at Baseline to 43% at End line). (Brown et al., 2016: 27)

In the World Vision Bangladesh Nabo Suchana project, women and men have been trained to vaccinate ducks and chickens. Rural villages select the entrepreneurs who receive training and – given their local availability and trust – more poultry farmers are now aware of and practising vaccination, which has reduced mortality and morbidity of the poultry. Several of these entrepreneurs are earning about \$20 on average per month, contributing to household income diversification and to off-farm income, while the vaccinations have improved poultry health (Innovision Consulting, 2015).

Multisectoral, holistic programming

Many food security programmes have found that integrated, multidimensional approaches are required to enhance food security pathways. Without good health and nutrition, for example, households are not ready to engage in value chains (Stoian et al., 2012). Save the Children's Nobo Jibon project in Bangladesh, for instance, addressed disaster risk reduction, health and nutrition, market-driven production, and income growth. As noted in the external final evaluation, the programme has seen significant improvements, including a 28 per cent increase in monthly income per capita, a 13 per cent decrease in food expenditure relative to total expenditure, and a 32 per cent reduction in food insecurity (Langworthy et al., 2015). In another Save the Children analysis, wasting (low weight for age; WHO, 2015) in children aged six to 59 months was reduced by 38 per cent for households that were involved in both the health/nutrition and value chain development activities, relative to a 26 per cent reduction for households involved only in health/nutrition.

ENSURE similarly promotes an integrated approach, encouraging care groups and men's groups to join village savings and lending associations (VSLAs). Care groups and men's groups receive training in village savings and lending and are encouraged to form producer and marketing groups. This integrated approach is aimed at increasing income levels through saving and investing in agricultural production as well as food security, needed by most extremely poor households.

Conclusion

Case examples from CARE, Save the Children, and World Vision show that extremely poor households can experience gains in productivity/profitability, equity, and empowerment by addressing capacity, access, productivity, household influence,

and the enabling environment (Brown et al., 2016). Many of these advances occur through relatively long chains of indirect influences requiring broad initiatives. Multisectoral programmes that include health and nutrition components are more effective than focusing exclusively on agricultural value chains (Levinson et al., 2015).

The enhanced VCD activities implemented by CARE, Save the Children, and World Vision highlight key recommendations for practitioners to redesign VCD programming to sustainably reach the extremely poor, including:

1. *Focus capacity building on sustainable access to information.* The most vulnerable farmers need special support – such as lead farmers and women-focused extension – to access information in order to be able to increase yields and negotiate prices. Do not assume that all information channels are appropriate for the extremely poor, especially women, and tailor interventions accordingly. VSLAs can help extremely poor households build their productive assets and social capital over time. Training programmes help extremely poor households build their capacity to enter markets over time.
2. *Bring markets to the poor.* Design ways to reduce cost and distance between extremely poor farmers and input suppliers, rather than assume that these farmers can overcome barriers on their own. Some successful interventions explored in this article include village agents, agri-kiosks, input fairs, buying centres and agro-dealers.
3. *Increase women's influence to make decisions.* Simply adding women participants to programmes is not enough. Increased production and income must be combined with increasing women's influence over all household decisions. Women need to be empowered to increase their mobility, control income, make nutrition and health choices, and have increased access to extension.
4. *Change gender norms.* Women's access and capacity need to be supported by broader forces. Community leaders' attitudes towards gender need to change to allow for more equitable decision-making processes at the household level. Men need to get involved in sharing women's heavy labour burdens.
5. *Think beyond our silo.* Value chains and economic development cannot stand alone. The poorest people face a variety of obstacles, including malnutrition, lack of education, and poor water and sanitation, that must also be addressed to sustain improvements in the food security indicators, such as a reduction of stunting. VCD activities need to operate with these additional sectors in project design or in collaboration with other public and private efforts in these sectors.

We argue that capacity, access, productivity, household influence, enabling environment and a multisectoral approach are essential in enhanced VCD programming to improve food security. As practitioners, we need to utilize these change levers in our design, implementation, and assessment of programmes with VCD components.

References

- Bolwig, S., Ponte, S., du Toit, A., Riisgaard, L. and Halberg, N. (2010) 'Integrating poverty and environmental concerns into value-chain analysis: a conceptual framework', *Development Policy Review* 28: 173–194 <<http://dx.doi.org/10.1111/j.1467-7679.2010.00480.x>>.
- Brown, V., Bower, T. and Sutter, P. (2016) *CARE Pathways Final Evaluation: Global Report* [pdf], Tucson, AZ: TANGO International, <http://www.careevaluations.org/Evaluations/Pathways_Endline_Global_Report.pdf> [accessed 8 August 2016].
- Campbell, R. (2014) *A Framework for Inclusive Market Systems Development* [online], LEO Brief, Microlinks <<https://www.microlinks.org/library/framework-inclusive-market-system-development>> [accessed 23 June 2016].
- CARE (2015), *Krishi Utsho – A Micro-franchise Model: A Report on Economic and Social Impact of Krishi Utsho* [pdf], Dhaka: CARE, <<http://www.careevaluations.org/Evaluations/Economic%20and%20Social%20Impact%20of%20Krishi%20Utsho.pdf>> [accessed 26 January 2017].
- Carr, R.E. (2008) 'Men's crops and women's crops: the importance of gender to the understanding of agricultural and development outcomes in Ghana's central region', *World Development* 36: 900–915 <<http://dx.doi.org/10.1016/j.worlddev.2007.05.009>>.
- Coles, C. and Mitchell, J. (2011) *Gender and Agricultural Value Chains: A Review of Current Knowledge and Practice and their Policy Implications* [pdf], ESA Working Paper No. 11-05, Rome: Food and Agriculture Organization <http://www.gamechangenetwork.info/documents/GenderMainstreaming/Livelihoods/Genderand%20Value%20Chain_FAO.pdf> [accessed 23 June 2016].
- Downen, J., Martin, S. and Banwart, L. (2016) *CARE Ghana Pathways Project Final Evaluation* [pdf], Tucson, AZ: TANGO International, <<http://www.careevaluations.org/Evaluations/CARE%20Ghana%20Pathways%20Project%20Final%20Evaluation.pdf>> [accessed 26 January 2017].
- Fanadzo, N., Chiduzo, C. and Mnkeni, P.N.S. (2010) 'Overview of smallholder irrigation schemes in South Africa: relationship between farmer crop management practices and performance', *African Journal of Agricultural Research* 5: 3514–23 <<http://dx.doi.org/10.5897/AJAR10.001>>.
- Food and Agriculture Organization (FAO) (2011) *The State of Food and Agriculture, 2010-2011: Women in Agriculture—Closing the Gender Gap in Development* [online], Rome: FAO <<http://www.fao.org/docrep/013/i2050e/i2050e00.htm>> [accessed 23 June 2016].
- FAO (2015) *The State of Food Insecurity in the World* [online], Rome: FAO <<http://www.fao.org/3/a-i4646e/index.html>> [accessed 23 June 2016].
- Faveri, C., Wilson, K.J. and Shaikh, P. (2015) 'Making markets work for women: how push and pull strategies can support women's economic empowerment', *Enterprise Development & Microfinance* 26: 11–22 <<http://dx.doi.org/10.3362/1755-1986.2015.003>>.
- Fowler, B. and White, D. (2014) *Scalable models for "last mile" input delivery* [online], Leveraging Economic Opportunities presentation, Washington, DC: USAID, <<http://agrilinks.org/blog/watch-scalable-models-last-mile-input-delivery>> [accessed 23 June 2016].
- Gelli, A., Hawkes, C., Donovan, J., Harris, H., Allen, S., de Brauw, A., Henson, S., Johnson, N., Garrett, J. and Ryckembusch, D. (2015) *Value Chains and Nutrition: A Framework to Support the Identification, Design, and Evaluation of Interventions* [online], Washington, DC: International Food Policy Research Institute Discussion Paper 01413 <<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/128951>> [accessed 16 September 2016].

Hoddinott, J. and Haddad, L. (1995) 'Does female share influence household expenditures? Evidence from Côte d'Ivoire', *Oxford Bulletin of Economics and Statistics* 57: 77–96 <<http://dx.doi.org/10.1111/j.1468-0084.1995.tb00028.x>>.

International Food Policy Research Institute (IFPRI) (2012) *Women's Empowerment Agricultural Index*, Washington, DC: IFPRI <<http://www.ifpri.org/publication/womens-empowerment-agriculture-index>> [accessed 27 January 2017].

Innovision Consulting (2015) *End Evaluation: Nabo Suchana Economic Development Project World Vision Bangladesh, Agailjhara, Barisal Southern Bangladesh Region* [pdf], <<https://www.worldvision.org/wp-content/uploads/Bangladesh-evaluation.pdf>> [accessed 22 November 2016].

Lambrecht, I.B. (2016) "'As a husband I will love, lead, and provide." Gendered access to land in Ghana', *World Development* 88: 188–200 <<http://dx.doi.org/10.1016/j.worlddev.2016.07.018>>.

Langworthy, M., Bower, T.R., Kabir, G. and Aziz, T. (2015) *Save the Children Bangladesh Quantitative Evaluation Results: Nabo Jibon Multi-Year Assistance Program* [pdf], Tucson, AZ: TANGO International <http://pdf.usaid.gov/pdf_docs/pa00m1n5.pdf> [accessed 11 July 2016].

Leahy, T. and Goforth, M. (2014) 'Best practice for rural food security projects in Southern Africa?' *Development in Practice* 24: 933–47 <<http://dx.doi.org/10.1080/09614524.2014.969196>>.

Levinson, F.J., Blankenship, J., Francis, J., Hachhethu, K., Karim, R., Kurz, K., Akbar, N. and Bhuiyan, M. (2015) *Qualitative Evaluation of Food for Peace Development Food Assistance Projects in Bangladesh*, Atlanta: CARE <<http://www.fsnnetwork.org/qualitative-evaluation-food-peace-development-food-assistance-projects-bangladesh>> [accessed 31 September 2016].

McKague, K. and Siddiquee, M. (2014) *Making Markets More Inclusive: Lessons from CARE and the Future of Sustainability in Agricultural Value Chain Development*, New York: Palgrave Macmillan.

Markel, E. and Gettliffe, E. (2017) *Promoting Women's Economic Empowerment: Beyond-Production in market Systems Programs*, LEO Brief, Washington, DC: USAID [pdf], <https://www.microlinks.org/sites/default/files/resource/files/LEO_SEEP_Brief_3_-_Beyond_Production_FINAL_508_compliant.pdf> [accessed 27 January 2017].

Njuki, J., Kruger, E. and Starr, L. (2013) *Increasing the Productivity and Empowerment of Women Smallholder Farmers: Results of a Baseline Assessment from Six Countries in Africa and Asia* [pdf], Atlanta: CARE <<http://www.care.org/sites/default/files/documents/pathways-global-baseline-report-2013.pdf>> [accessed 7 August 2016].

Norell, D. and Brand, M. (2014) *Integrating Extremely Poor Producers into Markets Field Guide*, Washington, DC: USAID <<https://www.microlinks.org/library/integrating-extremely-poor-producers-markets-field-guide-third-edition>> [accessed 23 June 2016].

Norell, D., Lawson-Lartego, L., White, D., Bante, Z. and Conn, L. (2015) 'Improving the food security of the extremely poor by linking them to markets', *Enterprise Development & Microfinance* 26: 45–62 <<http://dx.doi.org/10.3362/1755-1986.2015.006>>.

Pittore, K. (2016) *How Can We Use Markets to Reach the Poor with Nutritious Foods?* Policy Briefing 116, Brighton, UK: Institute of Development Studies, <<http://www.ids.ac.uk/publication/how-can-we-use-markets-to-reach-the-poor-with-nutritious-foods>> [accessed 18 July 2016].

Poole, N.D., Chitundu, M. and Msoni, R. (2013) 'Commercialisation: a meta-approach for agricultural development among smallholder farmers in Africa?' *Food Policy* 41: 155–65 <<http://dx.doi.org/10.1016/j.foodpol.2013.05.010>>.

Ribot, J.C. and Peluso, N.L. (2003) 'A theory of access', *Rural Sociology* 68: 153–81 <<http://dx.doi.org/10.1111/j.1549-0831.2003.tb00133.x>>.

Smith, L.C., Khan, F., Frankenberger T. and Wadud A.K.M. (2013) 'Admissible evidence in the court of development evaluation? The impact of CARE's SHOUHARDO project on child stunting in Bangladesh,' *World Development* 41: 196–216 <<http://dx.doi.org/10.1016/j.worlddev.2012.06.018>> [accessed 2 December 2016].

Stifel, D. and Minten, B. (2017) 'Market access, well-being, and nutrition: evidence from Ethiopia', *World Development* 90: 229–41 <<http://dx.doi.org/10.1016/j.worlddev.2016.09.009>>.

Stoian, D., Donovan, J., Fisk, J. and Muldoon, M. (2012) 'Value chain development for rural poverty reduction: a reality check and a warning', *Enterprise Development & Microfinance* 23: 54–69 <<http://dx.doi.org/10.3362/1755-1986.2012.006>>.

United States Agency for International Development (USAID) (2014) *Multi-Sectoral Nutrition Strategy, 2014-2025* [online], Washington, DC: USAID <http://www.usaid.gov/sites/default/files/documents/1867/USAID_Nutrition_Strategy_5-09_508.pdf> [accessed 23 June 2016].

Vardakoulias, O. and Nicholles, N. (2014) *Managing Uncertainty: An Economic Evaluation of Community-based Adaptation in Dakoro, Niger* [pdf], <http://www.nef-consulting.co.uk/wp-content/uploads/2014/04/Managing-Uncertainty_CARE_NEFC_FINAL-for-publishing.pdf> [accessed 26 January 2017].

Weatherhead, M., Mariam, S., Arnold, S. and Freeman, A. (2016) *Social Cost Benefit Analysis of CARE International's Pathways Program*, NEF Consulting for CARE USA.

World Health Organization (WHO) (2015) *Child Growth Indicators and their Interpretation* [online], Global Database on Child Growth and Malnutrition, Geneva: WHO <<http://www.who.int/nutgrowthdb/about/introduction/en/index2.html>> [accessed 23 June 2016].

World Vision (2016a) 'Monitoring report for ENSURE', Washington, DC: World Vision, unpublished.

World Vision (2016b) 'Monitoring report for LAHIA', Washington, DC: World Vision, unpublished.