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Agricultural Value Chain Development in Practice

Private Sector–Led Smallholder Development

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ABSTRACT

Value chain development is adopted widely as a private sector–led approach to agricultural development that can benefit smallholders. The objective of this research is to understand how development organizations are conceptualizing and developing agricultural value chains in Ghana to include smallholders. The study is based on case studies of five programs supported by various donors. A typology is employed to categorize the intervention. Common to all the programs are interventions to encourage the development of interlinked vertical contracts between smallholders and buyers and investments to improve the operations of actors downstream. The study explores issues related to expectations, scaling up of activities to reach a significant portion of the population, technology transfer, and participatory development of value chain strategies and identifies some indicators to examine the outcomes of value chain interventions.

Keywords: value chain development, vertical contracts, smallholders, inclusion, private sector

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1. INTRODUCTION

The use of value chains, value chain analysis, and value chain development (VCD) as analytical tools and development approaches is ubiquitous among development practitioners. Several development organizations now consider VCD an important approach to agricultural development (Stamm and Drachenfels 2011; Gibson 2008; Altenburg 2007). About one-half of recently approved projects of the International Fund for Agricultural Development (IFAD), for example, involved VCD to benefit small-scale agricultural producers (IFAD 2011). Ghana's Ministry of Food and Agriculture (2011) too says that it will use the value chain approach to implement its strategies.

As with other development approaches, proponents expect to achieve a wide range of objectives at local, regional, and national levels through VCD: poverty reduction; job creation; inclusive private-sector development; increased employment and income beyond the farmgate; agricultural trade facilitation; transformation of agriculture; and diversification of agriculture (Stamm and Drachenfels 2011; Altenburg 2007; Gibson 2008; Kingsbury 2010; Webber and Labaste 2010; UNDP n.d.). Importantly, the value chain approach is perceived to be a potential driver to restructure and develop the agriculture sector, particularly through private-sector development and by involving smallholders. The expectation is that inclusive and sustainable economic growth and poverty reduction can be achieved through VCD by integrating small-scale producers into stable, growing, or high-value markets and strengthening product-to-market systems (UNDP 2010; Norell and Brand 2012).

A value chain is the full range of value-adding activities required to bring a product (a commodity or service) through the different phases of production, including procurement of raw materials and other inputs, assembly, physical transformation, acquisition of required services such as transport or cooling, and ultimately response to consumer demand (Kaplinsky and Morris 2003). It can also be viewed as all the vertically linked, interdependent processes that generate value for the consumer, as well as horizontal linkages to other value chains that provide intermediate commodities and services (Webber and Labaste 2010). Or simply, it is a system of agreements, arrangements, and contracts that links farmers to consumers of food typically through one or more intermediaries (Barrett et al. 2012). Agricultural value chain actors include producers, traders, processors, and retail merchants; a range of technical, business, and financial service providers including input dealers; and the final markets into which a product or service is sold, whether local, national, regional, or global (ACDI/VOCA 2006, 2).

VCD has its roots in the concept of value chains, which was developed to examine operations within firms. The concept was subsequently expanded to include all the actors and operations both within and across countries, culminating in the notion of global value chains (Gereffi and Korzeniewicz 1994). The principle of value chains focuses on value creation at different stages and the division of labor among different actors. The notion of chain governance emerges from examining relationships among firms in value chains to see if any of the actors plays a lead role in dictating the terms of production and exchange, with implications for the distribution of benefits among various actors (Gereffi and Korzeniewicz 1994). Governance is control along the chain through the specification of what type of product needs to be supplied, by whom, in what quantity, and when, how it should be produced, and at what price (Bolwig et al. 2010). The lead firms are those that exercise power, organize activities, dictate the terms of participation to their immediate suppliers, and would be capable of transmitting the demand upstream all the way to producers. Such power may make some players capable of imposing rules that make them gatekeepers to participation in value chains (UNIDO 2011). VCD emerges from the notion of upgrading value chains to improve the competitiveness of an entire value chain or the position of one or more actors in the value chain, such as enabling producers to "move up the value chain" by shifting to more rewarding functions or products that have more value added in them (Gereffi 1999 cited in Bolwig et al. 2010).

Economies can be viewed as collections of value chains, and they can be expected to grow if the value chains in them grow or become more competitive. Value chains can be convenient units to see if small, poor, or vulnerable groups have opportunities to participate in activities more remunerative than the ones they are in. The assumptions behind the interest in value chains and VCD are that growth is good

for the poor and competitiveness of both domestic and global value chains is critical for growth, as most countries have open trade policies. Furthermore, in global trade, structured interactions are increasingly replacing arm's length trade; such traditional trade whereby producers sell to unknown buyers is in decline (Altenberg 2007; Swinnen and Maertens 2007). Additionally, VCD, which entails private enterprise development, is consistent with the private sector–led development strategies that are in vogue.

Value chains thus provide a new framework with which to anchor strategies that create opportunities for smallholders to participate in more remunerative activities or to upgrade their activity, particularly under private-sector leadership. Analysis of value chains can also reveal opportunities to improve the competitiveness of smallholder activities. Additionally, value chains offer opportunities for development practitioners to see how the welfare of producers may be tied to operations of other actors in their value chains, to plan for investments elsewhere that could potentially benefit producers as well. Improved opportunities for businesses downstream are expected to have positive effects on producers upstream as well (IFAD 2014). Such interrelatedness of actors is at the center of value chain analysis (UNIDO 2011). Firms or producers cannot become competitive on their own, but depend on the environment of suppliers and service providers; as the networks develop, individual enterprises can specialize in their core competencies, which in turn improves the competitiveness of networks (Altenberg 2007).

A range of broad strategies can be potentially employed to benefit smallholders through VCD:

- the value chains they are participating in can be made more competitive or high value, and stable value chains can be made pro-poor by enabling poor producers to participate in them (Stamm and von Drachenfels 2011; UNDP 2010);
- their incomes can be increased by enabling greater economic participation higher up in the chain (Kingsbury 2010);
- their portfolios can be diversified to include value chains that are competitive (Webber and Labaste 2010);
- employment and income opportunities can be created in rural areas by developing agro-industrial value chains (Becker, Tram, and Tu 2009); and
- more and better jobs can be created by increasing competitiveness and productivity/efficiency of existing supply chains (Núñez and Sievers 2011).

But how can value chains be upgraded or made competitive? One assumption that offers some opportunities for intervention is that value chains suffer from information problems: information flow among value chain actors is often either insufficient or even nonexistent, which contributes to the prevailing mutual mistrust (Berg et al. 2006). Low levels of trust and weak relationships between producers, buyers, equipment service and input providers, and financial institutions reduce incentives for any of these participants to invest in upgrading. Trust, coordination, and interfirm cooperation enable actors to develop mutually beneficial relationships (Webber and Labaste 2010). Thus, developing and strengthening networks that reduce risks for participants and build enough trust for them to invest in upgrading is an approach to upgrading value chains.

While the extensive literature on VCD has a lot to say on the objectives that need to be achieved and the specific changes in value chains that need to be made, such as increasing the level of trust, it is short on effective interventions to achieve the changes. The crux of development is the choice of effective interventions to achieve desired changes. In the case of VCD, these interventions also need to be appropriate for strengthening the private sector and establishing fruitful business relations with the government.

Objectives

The objective of this research is to understand how development organizations are conceptualizing and developing agricultural value chains in Ghana. Specifically, the research will focus on the choice of interventions and examine the pathways through which the development organizations expect the

interventions to change/upgrade the operations of and change relationships among economic agents in a value chain to make the chains more competitive. We pay particular attention to the dynamics of change that are expected to offer more opportunities for smallholders to improve their incomes.

Methodology

The analysis is based on case studies of a range of agricultural development projects characterized as VCD in Ghana. The case studies included interventions supported by USAID, GIZ, IFAD, the Outgrower and Value Chain Fund (OVCF) of the government of Ghana, and KfW.[1] The case studies included interventions in seven value chains of grains (maize and rice) and horticultural products including tree crops (orange, mango, pineapple, rubber, and oil palm) (Table A.1). The case studies sought to gain an understanding of the context in which interventions were made and the nature of those interventions, and note any outcomes, as many were in early stages of implementation. The case studies were conducted over a period of six months from April to September 2013.

The study team met with relevant people from the implementing organizations, producers or their representatives, and other members of value chain committees (VCCs) including traders, bankers, and input suppliers. In many cases, the team observed one of the meetings of value chain actors organized periodically by the development organizations. The list of stakeholders interacted with for the different case studies is presented in Appendix Table A.2.

The rest of the report is presented in three sections. Section 2 briefly reviews the literature for insights on relevant strategies to upgrade value chains. In Section 3, we present the nature of interventions made in VCD programs in Ghana. Section 4 synthesizes the information: mental models that drive the design of VCD, obstacles to achieving the desired outcomes, and some thoughts on the way to measure them.

[1] United States Agency for International Development (USAID); Deutsche Gesellschaft Internationale für Zusammenarbeit (GIZ); Kreditanstalt für Wiederaufbau (KfW).

2. THE "HOW" OF PRO-POOR VALUE CHAIN DEVELOPMENT

VCD is essentially what is referred to in the literature as value chain upgrading that entails improving processes or products (Bolwig et al. 2010; Gereffi 1999 in Bolwig et al. 2010). Upgrading could also involve just delivering larger volumes, matching existing standards, and improving logistics, and thus getting better paid for the same product (Gibbon and Ponte 2005 cited in Bolwig et al. 2010). And it entails some actors acquiring new capabilities and accessing new market segments.

The challenge, however, is to benefit the poor through upgrading of value chains. Value chains that are usually generated by large agribusinesses out of commercial incentives are not necessarily pro-poor (Vorley 2001). Hence, there may be tradeoffs involved in making them pro-poor without hampering their competitiveness (Altenburg 2007).

VCD strategies emphasize strengthening mutually beneficial linkages among actors, thus creating and building trust among value chain participants so that they work together to take advantage of market opportunities (Webber and Labaste 2010; Campbell 2006). The assumption is that spot exchanges are not beneficial because actors do not have information on the strategic behavior of others; if they would only get together, they could come up with arrangements that were mutually beneficial. Therefore, fashioning relationships among value chain actors is a key component of the strategies of various development organizations. They aim to form partnerships among farmers' organizations, input suppliers, banks, and private agribusiness companies along a specific value chain (IFAD 2014); strengthen private business linkages; build public–private partnerships; and improve services through the GIZ value chain program for rural development programs (Springer-Heinze 2007; Henckes 2009). Other components of VCD are typical of ACDI/VOCA's interventions, including facilitating access to cheaper or better inputs, strengthening the delivery of business and financial services, increasing access to higher-value markets, and simplifying export licensing (Campbell 2006).

Examples of successful pro-poor value chain development cited in the literature include

- World Vision's market facilitators brokering a win-win relationship between a food processor and very poor women and youth in Sierra Leone, which enabled women and youth to set up viable micro-franchises (Norell and Brand 2012);
- Nigeria's Common Fund for Commodities (CFC) Cassava Value Chain Development Project's training of processors, including about 30 women, on better processing techniques for high-quality and hygienic cassava products, which has encouraged patronage of odorless cassava flour (Ope-Ewe et al. 2011); and
- the International Labour Office (ILO) intervention project (Enter-Growth) in the Sri Lankan floriculture value chain that focused on improving coordination, helped establish a national Tropical Floriculture Association, and provided advocacy to prioritize live and perishable goods (such as flowers and ornamental fish) at the airport (Núñez and Sievers 2011).

Riisgaard et al. (2010) offer a useful framework for strategies to upgrade small-producer value chains. It includes three that are relevant for this study: (1) improving process, product, or volume; (2) changing or adding functions; and (3) improving value chain coordination. They refer to the first set as "doing things better or bigger" through improvements in technology and management. That includes improving the efficiency of processes, producing more sophisticated products, or simply increasing the volume of whatever is being produced. In the context of agricultural development, improving agricultural productivity through technology adoption could be viewed as improving processes, while improving quality of outputs could go under product improvement.

Producers can also upgrade by changing or adding to functions that they undertake, either upstream or downstream. Producers could take up such downstream activities as processing or even simple marketing functions such as grading before they sell. Upstream activities could include supplying themselves with services that they hitherto purchased from others—tractors, for example.

Much in line with the assumption that value chain actors can benefit from trust building, the third strategy seeks to improve value chain coordination, to encourage the development of mechanisms that are nonmarket. The reasoning is that smallholders' market transactions usually reduce their rewards and increase their risk: volumes are often small, and therefore only low supplier capabilities are developed; prices negotiated at every exchange have higher uncertainty; quality grades are poorly specified; complex product information is poorly transmitted; and traceability, which consumers are beginning to demand, is absent in such transactions. The outcome of improved coordination is what Riisgaard et al. (2010) refer to as vertical contractualization, in which two actors move away from spot exchanges to increased use of contracts.

Even with this level of specification of VCD strategies, the "how" is not clear. For example, what kinds of intentions are effective in building partnerships between large firms and small farmers? With this background, we now look at the interventions made in VCD in Ghana.

3. AGRICULTURAL VALUE CHAIN DEVELOPMENT IN GHANA

The case studies, as noted earlier, include agricultural development activities that are characterized as VCD by major donors in Ghana. In this section, we characterize the interventions and organize them in the framework for upgrading strategies discussed in the previous section.

Introduction of the Warehouse Receipt System

The Agricultural Development and Value Chain Enhancement (ADVANCE) program, building on the efforts of an earlier similar program supported by USAID, introduced the warehouse receipt system (WRS) through the establishment of the Ghana Grains Council (GGC), a private nonprofit organization created to enforce transparent regulations and standards, facilitate the dissemination of market information, and target increases in grain quality and production for smallholders. Members of the GGC include private companies, farmer organizations, financial institutions, and private individuals. The GGC worked with the Ghana Standards Authority to develop standards, rules, and regulations to govern the negotiable warehouse receipts for grains. The GGC certifies warehouses owned privately or publicly to operate the WRS.

The introduction of the WRS is designed to address a number of issues faced by producers including smallholders:

- Absence of grades and standards that offer producers the incentive to improve quality and also gain access to markets that stipulate standards.
- Limited access to credit, which also leads cash-strapped producers to sell immediately after harvest when prices can be as much as one-half of prices just a few months ahead.
- Limited or no access to appropriate storage facilities. Although not intended initially, the establishment of a WRS is now seen as the essential first step to establishing a commodity exchange in Ghana. The WRS could potentially enable producers to benefit from increased access to credit, higher prices, and reduced postharvest losses through storage at community warehouses.

A warehouse receipt is a document in electronic form issued by a GGC-licensed warehouse operator certifying the quantity and quality of a specified grain (maize, rice, soya, and so on) stored in a warehouse by a farmer, trader, food processor, or financial institution. In this system, storage necessarily entails grading, and the resulting certification enables easy and trustworthy transactions between parties. Importantly, the receipts are designed to be accepted as collateral by financial institutions, enabling whoever stores the commodities to gain access to credit.

With grants from USAID and AGRA,[2] warehouses have been built for individual aggregators or traders who assemble significant quantities by buying small quantities from numerous sellers and communities. In some communities, grants covered most of the costs, with some contribution from the beneficiaries. Aggregators are reported to have contributed about 30 percent of the costs.

The GGC has authorized four companies, three in Tamale and one in Ejura, with total warehouse capacity of 20,500 tons[3] to operate the WRS. Other private warehouses that are certified can operate the WRS for the benefit of themselves or smallholders. These certified warehouses were reported to have administered, processed, stored, or received about 15,166 tons of maize at the time of the study. The GGC has also approved 18 community warehouses with an estimated capacity of 80 tons each, with six located in the Northern Region, eight in the Upper West, and four in the Upper East. The community warehouses enable traders to aggregate purchases locally and smallholders to pool their production. Community warehouse are expected to be managed and operated by the aggregator who contributed to the

[2] Alliance for a Green Revolution in Africa.
[3] Throughout this paper, tons refer to metric tons.

construction or by the communities. Grading and the WRS are not to be implemented in the community warehouses.

The GGC also engages in the training of farmers on the workings of the WRS. It also coordinates with ADVANCE to organize preharvest networking events to bring buyers and sellers together.

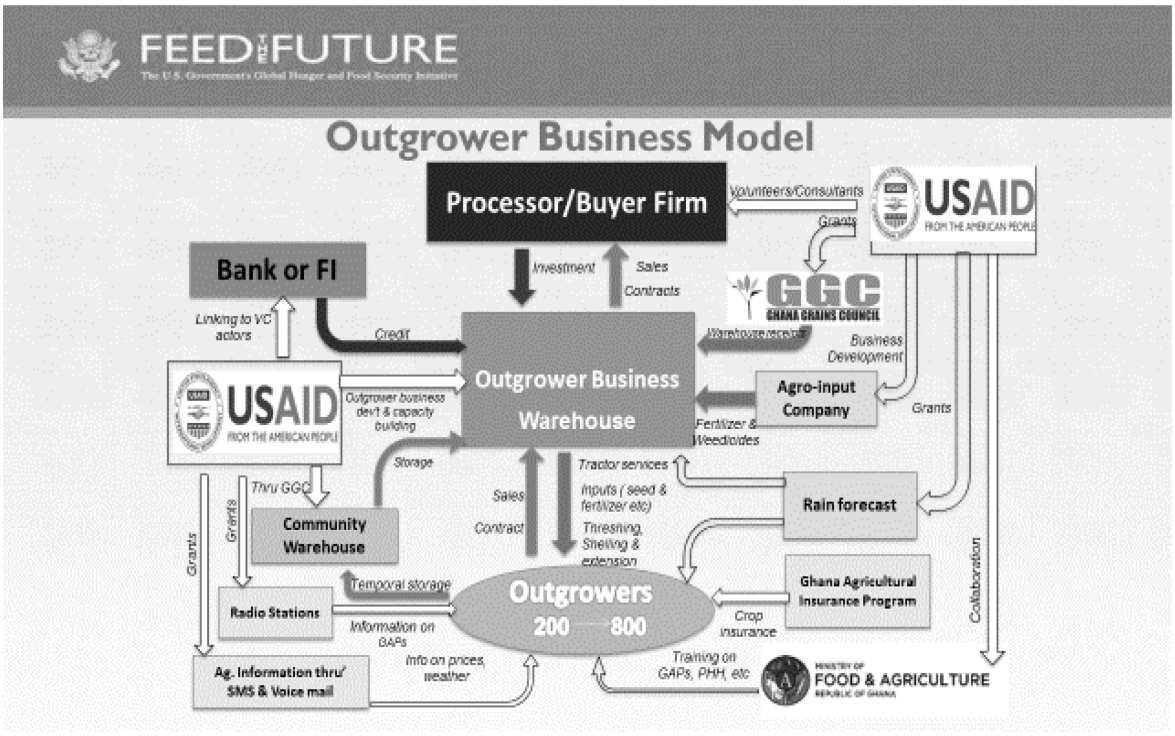
Production Upgraded through Aggregators/Nucleus Farmers

A brochure on best practices for cultivation of maize prepared by ADVANCE suggests that farmers should first figure out who they sell to, and preferably at what prices, before making any production decisions. ADVANCE seeks to reach smallholders by working through nucleus farmers, who offer inputs and services on credit to smallholder with the expectation of repayment in cash or kind at the end of the season, or aggregators, who already have or promise to build relationships with smallholders. The nucleus farmers or aggregators supply smallholders with inputs and other services, usually on credit, to upgrade their production and offer a market for their outputs. This outgrower relationship is fostered in the context of a broader set of interventions at various levels in the value chain, including the establishment of the GGC (Figure 3.1).

For the pivotal role that the aggregators play, ADVANCE has given them tractors to offer tractor services to smallholders. Aggregators are also put in touch with final buyers, who may offer them credit and a market for large quantities of outputs. Additionally, ADVANCE directly trains the smallholders with whom the aggregators work in best practices and gives them access, through subscriptions, to services that deliver market information to their cell phones. In addition to training, ADVANCE collaborates with private agricultural input companies to set up demonstrations of farming techniques used to achieve higher yields in maize, rice, and soya.

ADVANCE also offers training in business planning to other actors such as input dealers and tractor service providers in the value chain. Its volunteer business development experts have trained agribusinesses to develop their strategic plans. These volunteers developed a business plan and provided training in accounting, management, and marketing for members of the National Association of Agric Mechanisation Service Centre Operators (NAAMSECO), an association of private mechanized agricultural service providers. Sixteen financial institutions in the Brong Ahafo, Northern, Upper East, and Upper West regions were given training in value chain financing to gain a better understanding of the need for timely credit before the farming season begins, and for prompt postharvest payment.

Figure 3.1 Outgrower business model



Source: USAID (2015).
Note: This figure was received from Fenton Sands, an advisor at USAID in Accra, Ghana.

The program also has partnerships with private seed companies to make available to farmers improved seeds through the aggregators. Farmers also are put in touch with financial institutions to help them obtain loans. Some of the participating farmers also received subsidized inputs through the equipment pilot program—each farmer group was given 70 percent of the purchase cost of a tractor, ox and donkey carts, tarpaulin sheets, and seed dibblers. The ADVANCE project has also supported the construction of warehouses.

Upgrading Production through District Value Chain Committees

Under the assumption that value chain diagnosis should be participatory and that building trust among actors in a value chain will enable them to form mutually beneficial relationships, two of the programs examined—the Market-Oriented Agriculture Programme (MOAP) supported by GIZ, and the Northern Rural Growth Project (NRGP) supported by IFAD—organize VCCs. MOAP sets up crop-based committees involving a few farmer-based organizations (FBOs). NRGP has established one committee in each district in the area that it covers, with the focus in nearly all of them on maize production.

NRGP, established in 2008, is organizing, and in some cases reorganizing, actors of the grain subsector at the micro level into district value chain committees (DVCCs). It provides technical and financial support to develop grain value chains through DVCCs, which aim to build relations and increase trust among actors along the value chain. DVCCs are expected to solve production and marketing problems among the different stakeholders at the local level. NRGP provides financial support to DVCCs for their meetings, activities, and administration. A private company, the Association of Church-Based Development NGOs (ACDEP), has been contracted to organize DVCCs by bringing together representatives from FBOs, tractor operators, aggregators, input dealers, and rural banks.

NRGP has set up committees in the Upper East, Upper West, Northern, and Brong Ahafo regions. Since 2008, it has organized a total of 43 DVCCs. Nearly all of them are focused on production of maize. DVCCs are made up of representatives of local FBOs, service providers, aggregators, input dealers, processors, and rural banks, usually at the district level. Some of the communities do not have a full range of actors, especially traders/aggregators. NRGP began by organizing a VCC for maize at the national level, but after several meetings that it felt did not lead to effective communication among various actors, it abandoned the approach in favor of organizing at the level of districts.

Both NRGP and MOAP seek to bring banking institutions and traders/processors into the committee so that the two key constraints of smallholders—credit and access to markets—can be addressed by their fellow committee members. The NRGP seeks to achieve cashless transactions among parties so that producers make appropriate use of credit and build trust among the actors. With assurances from traders in the group that they will buy the outputs, credit institutions are expected to offer credit and pay the service providers (such as input dealers and tractor owners) directly and the traders are expected to pay the producers through the credit institution. Both programs organize periodic meetings (monthly or less frequently) to enable all members to network and interact regularly to build relations, exchange information, and develop trust.

Participating farmers are often trained in good agricultural practices and are expected to benefit from access to improved inputs (seeds, fertilizer, and pesticides) from the input suppliers who are also part of the DVCCs. Some of the FBOs also have been given tractors and machinery.

Upgrading Horticultural Value Chain Committees

MOAP, a program that began in 2004, aims to help agricultural producers and other actors in processing, trade, and services to improve their competitiveness in national, regional, and international markets (Ghana, Ministry of Food and Agriculture/GIZ 2013). It has three main activities: (1) upgrading selected value chains; (2) providing policy advice and capacity building; and (3) establishing and strengthening public and private service delivery systems. MOAP supports the development of mango, citrus, pineapple, and maize value chains in the Northern, Brong Ahafo, Central, and Volta regions of Ghana. It uses VCCs to enable all actors to jointly strengthen the performance of each link of the chain, and it has developed guidelines for setting up VCCs, emphasizing cooperation, identification of best practices, capacity building, and monitoring to develop replicable and sustainable structures for value chain management (Will 2009).

The objective is to organize actors and bring stakeholders together to identify and address farmers' particular needs, but different VCCs may emphasize different issues. The citrus VCC in the Central Region, for example, is designed to assist farmers to establish links, share production and market information, and collectively reach out to buyers. Mango production in the Volta Region is hindered by lack of access to credit and markets and unavailability of appropriate inputs. Thus, a nationwide fruit fly infestation in 2013 severely affected production, but effective and affordable measures for control of fruit flies were not available.

Difficulties exist on the marketing side as well for perishable crops such as mango. Without access roads and reliable means of transport, producers are forced to sell at farmgate to traders at whatever price is offered to them. Since mango has become a high-value export commodity, the VCC has focused on improving quality so that producers can meet the international standards set by GLOBALG.A.P.[4] to gain access to many export markets. MOAP introduced Blue Skies (a processor that exports) to the members. With the help of the Ministry of Food and Agriculture's (MoFA's) Export Marketing and Quality Awareness Project (EMQAP) and GLOBALG.A.P. experts, MOAP initiated work with farmers to meet the certification requirements. Three FBOs in the Volta Region have been taken through the GLOBALG.A.P. certification requirements over five to six months and were awaiting

[4] Global Good Agricultural Practices (GLOBALG.A.P.) is an independent international network of certification bodies to ensure consistent standards of farm production.

approval at the time of the survey. MOAP met the cost of obtaining certification. One of the participating FBOs that had managed to get certification with the help of a previous USAID program (TIPCEE) has entered into an informal supply agreement that specifies supply quantity and price with Blue Skies. To help the farmers meet the standards, MOAP is also planning to set up a company to provide services such as weed control, pesticide application, and harvesting.

Although pineapple is one of the most developed of the horticultural subsectors, those farmers, just like citrus and mango farmers, lack access to credit, markets, and inputs. Smallholders produce nearly half of the produce exported. The VCC aims to bring farmers, input dealers, processors, and service providers together to interact and understand one another's needs. Through the committee, MOAP has introduced financial institutions such as Ekumfiman Rural Bank and the Agricultural Development Bank (ADB) and processors/exporters such as Jei River Farms Ltd. and Profound Integration Company to pineapple producers. ADB, two input dealers, six FBOs, and the processor, Profound Integration, have come to a mutual agreement to enable cashless transactions. Profound Integration has guaranteed that it will purchase fresh pineapples from the FBOs, while the input dealers have agreed to supply the necessary inputs on credit. Profound Integration deposits the payment into the FBO account at ADB, after deducting the cost of inputs provided by input dealers.

Buyer-Led Process Upgrade through Financial Intermediation

In something of a departure from the other programs that aim to bring various actors together, the Outgrower and Value Chain Fund (OVCF) requires formal agreements between a trader or a processor who takes the lead, a group of producers, and a credit institution to participate in the program. The OVCF, a medium- to long-term refinancing credit program established by the government of Ghana and KfW in 2011, funds proposals from traders or processors who take the lead to obtain raw material supplies from smallholders.

The OVCF has so far supported projects to strengthen oil palm, rice, and rubber value chains that integrate smallholders into commercial agriculture. The OVCF offers loans to outgrower and value chain schemes (OVCSs), which are tripartite agreements between a processor, exporter, or buyer (referred to as the technical operator), a banking institution (referred to as a financial operator), and one or more farmers' associations (FBOs) representing outgrowers. The program offers credit and grants, provided the parties in the OVCS can demonstrate that they have contractual agreements and relationships that are mutually beneficial, and importantly, pull smallholders into commercial farming.

The OVCF makes the funds available to the credit institution, which in turn extends credit to the processor/trader. The technical operator then supplies services and inputs to farmers. Depending on the nature of the services provided by the technical operator, the credit institution may extend credit to producers and reimburse the technical operator for the services provided. The outgrowers benefit from access to credit and technical assistance from the technical operator, who benefits from an improved supply of raw material for processing. The OVCF also extends grants and loans to processors to upgrade their processing operations.

In the case of oil palm, the technical operator, Asare Odometa Plantations Ltd. (AOPL), aims to establish 98 new outgrower farms to supply it with adequate palm fruits to process at a larger plant that it will set up with support from the OVCF. AOPL is working with members of Klo Oil Palm Outgrowers Association (the FBO) to establish new oil palm farms. It is supplying seeds of improved varieties and the knowledge required, all on credit extended through the Upper Manya Kro Rural Bank (the financial operator). The producers are assured of access to market if they plant oil palms, and AOPL expects to benefit from adequate supplies of raw material for its expanded plant.

In the case of rice, the technical operator, Prairie Volta Ltd. (PVL), already obtains some of the rice for its mills through an outgrower arrangement with 96 farmers. It is expanding its outgrower program to provide a continuous and guaranteed supply of rice to make better use of its capacity to mill 60,000 tons per year. The tripartite agreement includes two farmers' associations (Aveyime Irrigation Cooperative and Marketing Society in Aveyime and Mawuko Farmers' Association in Dadome and

Mepe) and ADB. As per the agreements, farmers were expected to get credit of around GH₵10,000 each to cultivate two acres of rice. They were expected to use the credit to obtain agro-inputs, meet labor costs, and pay for technical services provided by PVL. The technical services include ploughing and supply of fertilizers, improved seeds, and other agro-chemicals. PVL expects to have a guaranteed supply from the outgrower farmers for processing while the farmers expect that their credit constraints affecting rice farming will be eased.

In the case of rubber, the technical operator, Rubber Plantations Ghana Ltd. (RPGL), which was working with an existing outgrower scheme, wants to expand the scheme by bringing in an additional 450 farmers with rubber on nearly 2,000 hectares to increase raw material supply for expanded production of smoked slit rubber, an intermediate product that is exported. The tripartite arrangement involves RPGL, the Association of Eastern Region Rubber Outgrowers, and the National Investment Bank. In early 2013, RPGL was able to extend credit to farmers (whose rubber farms served as collateral), provide technical support and access to improved technology, and guarantee the farmers a market. An important aspect of technical support was the production of seedlings for planting. When producers begin to supply rubber, the National Investment Bank plans to retain 25 percent of the farmer's revenue to service outstanding loans.

In addition to offering a market, the technical operator, who is usually a processor, is responsible for offering technical support to producers to procure the necessary inputs and knowledge to upgrade their production. They get into contracts with outgrowers with or without specification of prices. In two cases, oil palm and rubber, the prices are set by a transparent process in which prices are tied to global markets. Rice growers on the other hand were not happy with the prices that they were being offered.

Characterizing the Interventions

Placing these interventions in the framework identified, we can see that vertical contractualization is a major objective in all of the programs except the WRS (Table 3.1). In the case of buyer-led transformation, vertical contractualization is a prerequisite for participation in the program. Smallholder process upgrading in terms of improving production technology is an objective in all cases because the major goal in all of this is to improve smallholder conditions. At the very least, the intention is to offer smallholders credit and technical knowledge so that they can upgrade their production. In the case of the OVCF, rather than upgrading production, producers are given the option to diversify their portfolios to include crops that are perceived to be more remunerative. Process improvements are sought downstream by directing more rice to better milling facilities, improving technologies, and expanding capacities in the processing of oil palm and rubber. Product upgrade is sought in the WRS and horticultural value chains. Functional upgrading in terms of enabling farmers to provide themselves with services and also pool their output before marketing are objectives in two programs (WRS and aggregators).

A leading role in all the cases is given to the private sector or is in the hands of project-supported institutions in anticipation of private firms taking over in due course. The GGC, an industry organization, takes the lead in the WRS. Nucleus farmers/aggregators/processors lead in two other major programs in the ADVANCE and MOAP programs. The activities of district and horticultural committees are still led by projects supporting them, but the expectation is that a trader or a processor will assume the role.

Table 3.1 Nature of upgrading in Ghanaian value chain development

Intervention	Nature of upgrading	Leadership
WRS	*Product upgrade:* introduction of standards to encourage grading and to generate incentives to improve quality. It is done through the *introduction of a new service or actor in the chain* that offers assurances to other actors in the chain of quality and existence of good-quality stocks held by an actor. *Encouragement of horizontal contracts:* provision of community warehouses to encourage producers to pool their output.	Industry organization supported by an external organization
Nucleus farmers or aggregators	*Vertical contractualization:* development of nonmarket relationships between producers and nucleus farmers; nucleus farmers and service providers; nucleus farmers and processors or large buyers. *Process upgrade:* improving the efficiency of operations of producers through higher levels of technology adoption; and of nucleus farmers, processors, and service providers through training in business planning. *Functional upgrading of producers:* grants to producers (groups) to build assets such as tractors to provide themselves with services—and vertically integrate into service provision as well.	Nucleus farmers and large buyers or processors
DVCC	*Vertical contractualization:* promoting interaction among value chain actors through committees to help them develop trust and mutually beneficial relationships, particularly those that result in improved access to credit and markets for producers; replacing cash transactions with bank transfers. *Process upgrade:* training producers in good agricultural practices to encourage them to upgrade production technologies. *Functional upgrading of producers:* grants to producers (groups) to build assets such as tractors to provide themselves with services—and vertically integrate into service provision as well.	The committee (in anticipation of a buyer taking the lead)
MOAP	*Vertical contractualization:* promoting interaction among value chain actors through committees to help them develop trust and mutually beneficial relationships; bringing actors into the committee. *Product upgrading:* through certification (mangoes) or production of higher quality (pineapple) to gain access to export markets. *Process upgrading:* training in good agricultural practices for producers; training for bankers and input suppliers to improve their operations. *Facilitate the development of a new service or actor in the chain:* encourage the development of a private plant protection service for mango producers.	The committee (in anticipation of a buyer taking the lead)
OVCF	*Vertical contractualization:* smallholders gain access to investment capital, inputs, and technical assistance and markets through tripartite agreements—a requirement rather than a desired outcome. *Downstream process upgrading:* more efficient and increased capacity for processing (oil palm and rubber). *Process upgrading:* diversification of producer operations to get into higher value chains (better-milled rice, oil palm, and rubber).	Processors

Source: Authors.

Note: WRS = warehouse receipt system; DVCC = district value chain committee; MOAP = Market-Oriented Agriculture Programme; OVCF = Outgrower and Value Chain Fund.

4. MOTIVATION, EXPECTED OUTCOMES, AND MEASUREMENTS

Discussions with program managers suggest that the key motivation for adopting VCD approaches in agricultural development is the perceived absence of attention to markets in "research-and-extension-led" agricultural transformation. VCD also appeals because it takes into account the entire chain and there is an expectation that working with the entire chain makes it feasible to expand the market, obtain higher prices for producers, and increase their share of consumer prices, possibly through value addition. Although relatively new, there is some familiarity among development practitioners with VCD approaches and willingness to work with the private sector in Ghana from having observed the experience of export development projects such as that of pineapple, in which one works backward from a market to develop remunerative supply chains.

Except for in the case of the WRS, an anticipated outcome of VCD activities is that producers will face reduced price risks and have increased access to markets through vertical contracts with buyers. Further, the expectation is that a producer who has entered into a contract with a buyer will gain access to credit, because credit may come as part of an interlinked marketing contract or a credit institution would now be more willing to extend credit. Another expectation is that VCD can rescue farmers from being price takers, through two potential pathways: collectively, they would have greater power to negotiate for better prices; and if they are getting into contracts, they can negotiate acceptable guaranteed prices. The mental model is akin to closing the circle. Producers manage to get an assured market, on the basis of which a financial institution extends credit, and farmers upgrade their production, with the expectation that process upgrade or technology adoption will follow.

Contract Farming Is Key

The emergence of contracts between producers and large buyers (including processors and exporters) is central to achieving the objectives of VCD. Vertical contracts developed through longer-term ties, which replace informal transactions, are expected to benefit producers (UNIDO 2011). Contracts between smallholder farmers and buyers that enable smallholders to interact with larger growers and traders are also seen as a hybrid model that is an alternative to a sole focus on either smallholders or mega-farms involving foreign investment (Collier and Dercon 2014).

As the case studies were cursory and conducted in the early stages of the programs, whether any contracts would emerge and their nature was not clear at the time of the study. But contracts had emerged in a few cases, and they were prerequisites for participation in one of the programs. In the ADVANCE project, individuals who already have relationships with smallholders appear to have been selected as aggregators, to benefit from existing social capital. While they supply smallholders with inputs and services in exchange for the smallholders' commitment to sell outputs to the aggregators whether the sales would be at predetermined prices is not known (Table 4.1). The existing practice in the country is that producers who receive such inputs and services are required to repay by delivering a specific quantity of output, regardless of price movements following the agreement. In the OVCS too, processors enter into contracts to buy but price agreements are ambiguous. In the district and horticultural value chains, some buyers have come in with offers to buy certain quantities at specified prices, but there were no contracts as such at the time of the study.

Table 4.1 Nature of vertical contracts

Program	Whether contracts have emerged	Nature of contracts
ADVANCE	Informal long-term relationships between aggregators and outgrowers	Supply of services and inputs on credit; commitment to buy but price agreements not clear
NRGP	Absence of traders in many of the committees; and no contracts	None
MOAP	Some processors or exporters have offered to buy from members	Commitment to buy certain quantities at specified prices
OVCF	Contracts between processors and producers	Rules-based transparent process for pricing in two cases; negotiated pricing in the case of rice

Source: Authors.
Notes: ADVANCE = Agricultural Development and Value Chain Enhancement program; NRGP = Northern Rural Growth Project; MOAP = Market-Oriented Agriculture Programme; OVCF = Outgrower and Value Chain Fund.

Large-scale buyers have an incentive to participate in VCD activities because they have difficulties in obtaining raw materials of desired quality, in large quantities, and at acceptable prices. Private coordination mechanisms have been emerging and growing in response to consumer demand for quality and safety and the inability of producers to supply because of failures in various markets (Swinnen and Maertens 2007). But enforcing contracts has been a problem in Ghana. Companies such as Blue Skies have invested in building long-term relationships to obtain reliable supplies. Increasing productivity through interlinked contracts that offer producers access to inputs and knowledge and the ability of buyers to pay higher than prevailing prices are key to discouraging side-selling by producers, but only the exporters of high-quality produce may be able to offer such prices.

Scaling Up VCD

VCD departs from traditional approaches to developing agriculture. IFAD's traditional approach, for example, was to promote yield-increasing and labor-saving technologies at the farm level and expand the area farmed. Now its pro-poor value chain approach focuses on increasing income through greater economic participation higher up the marketing chain (Kingsbury 2010). Traditionally, agricultural development entailed the development of infrastructure such as irrigation, roads, and markets, public supply of technology, extension, and market information, supply of credit through cooperative societies and subsidization or free supply of some inputs, and market regulation and/or state marketing institutions offering a minimum price or acting as a buyer of last resort. The approach broadly was to fix failures in various markets expecting that an appropriate or competitive combination of crops would be obtained over time.

In VCD, on the other hand, crops are selected and crop-specific investments of the type identified in the previous paragraph are made, which may have spillover effects on other crops as well. As in industrial policies, certain chains with potential are selected, but the potential need not be growth alone. It could be the potential to either reduce poverty or be competitive. The choice of crops in our sample of cases is driven by a number of factors. In the case of USAID, for example, the potential to reach poor farmers was an important consideration in selecting maize as one of the crops (Feed the Future 2011). In other cases, wherever the value chains were not well developed—in the sense of unexploited potential to expand production and improve marketing—they were selected for development (mango, pineapple, and orange). In the case of the OVCF, proposals were sought that required a processor or a buyer to be involved.

In the traditional approach to agricultural development, the prospect of improved profitability, whether from productivity growth or price changes, drives diffusion of improved technologies among producers. The Green Revolution in Asia was essentially brought about through diffusion of higher-yielding varieties (Ruttan and Binswanger 1978). Agricultural productivity growth is also associated with poverty reduction (de Janvry and Sadoulet 2009; Irz et al. 2001). The path to productivity increase

through upgrading of production processes is not clear in VCD. One aspect of this is the introduction and adoption of superior technologies. As the primary aim in many of the cases appears to be overcoming credit failure, it is reasonable to assume that easing credit constraints may lead producers to adopt available superior technologies. The responsibility for pushing the technologies falls on the lead actors. Would the aggregators in the ADVANCE program, for example, have an interest in improving productivity? Or would they be content with higher production using current or old technology? Although productivity improvement is an objective of VCD, it is necessary to see whether chain development approaches generate incentives and investments necessary to upgrade production processes.

The second aspect is whether the focus on VCD will dilute investments in research and development. Superior technologies based on fertilizer-responsive improved crop varieties were central to the Green Revolution, although there are disagreements about the relative role played by the state (Djurfeldt et al. 2005; Estudillo and Otsuka 2012). The sourcing of technologies is left to lead actors except in the case of ADVANCE, which is introducing imported improved varieties through a tie-up with a seed company. To the extent that agricultural technologies need adaptation, it may not be feasible for private agents to procure appropriate technologies from elsewhere. This raises questions about how investment in the agricultural sector should be split between traditional investment in research and extension and private sector–led VCD. Or can we expect a private–public innovation system to emerge in the short to medium term to respond to the demands of the private sector?

VCD is largely an exercise in institutional development, as it seeks to create relationships, primarily vertical contracts, between actors that could potentially encourage producers and other actors to upgrade their operations. Will there be a diffusion of mutually beneficial superior relationships? VCD projects encourage the development of nonmarket or mutually beneficial relationships by absorbing some of the transaction costs. This may take the form of introducing agents to one another or training that may be expected to change the behavior of agents. Would the demonstrated benefits from fostered development of beneficial relationships encourage actors in other value chains to develop such relationships on their own, by absorbing the equivalent of transaction costs incurred in VCD projects, or can we expect the transaction costs to come down significantly because of successful demonstration? If technologies and institutions in terms of new, mutually beneficial relationships do not diffuse, adequate numbers of poor households may not be reached and the costs relative to benefits from interventions may exceed those of other approaches to developing agriculture.

Benefitting Smallholders

Increased opportunities for smallholders to participate and higher incomes characterize pro-poor VCD (Haggblade et al. 2012). Participation, however, may not necessarily make things better for the poor (Bolwig et al. 2010). In the oil palm development case under the OVCF, for example, producers in the area were not willing to plant oil palm although credit was extended to them because of more attractive returns from the cultivation of annual crops such as cassava. The OVCF then included support to hire two extension staff to persuade farmers to plant oil palm.

By entering into contracts, smallholders benefit from the resolution of market failures: in insurance markets by reducing price risks; in financial markets by gaining access to credit; in input markets through access to the inputs; and in information through interaction with other actors. But examining the impact on incomes through such participation is fraught with methodological difficulties because smallholder participation and geographical targeting of programs may not be random (Barrett et al. 2012). However, there is a large literature that has examined the benefits from contract farming, for smallholders in particular (Key and Runsten 1999; Porter 1997; Kirsten and Sartorius 2002; Swinnen and Maertens 2007).

As VCD seeks to develop superior relationships where they have not naturally emerged, it would be useful to examine the cases further for first-round effects, in particular the development of new relationships, access to various input markets, and the effect on productivity on smallholder farms. The nature of crops, for example, influences the emergence of interlinked contracts (Swinnen 2007). Given the objectives of interventions, we identify the outcomes to be expected and some indicators of those outcomes (Table 4.2). Focusing on smallholders, access to credit and services and increased yields and income are some of the key indicators in most cases. Of particular interest would be examining whether investments downstream in the chain benefit producers upstream. Some examples of such interventions are the building of warehouses for aggregators or training for credit institutions regarding lending to smallholders.

It is also important to ensure that VCD activities do not simply transfer benefits from one group of smallholders to another. Bringing a buyer into a VCC may simply be taking away a buyer from nonparticipating producers. A true indicator of benefit would be expansion in the volume or the value of business by downstream actors with or without additional investments by them. As the coordination entailed in VCD facilitates complementary decision making by different actors, and also some pump-priming investments are made, they should trigger further investments by the private sector (Poulton, Kydd, and Dorward 2006).

Table 4.2 Outcomes and indicators of value chain upgrading

Intervention	Outcome	Indicators
Warehouse receipt system (WRS)	• Emergence of grading, improved quality of grains, premium for quality leading to higher prices for producers and access to new markets. • Increased access to credit for producers, traders, and processors through the WRS. • Increased market power of producers through aggregation at community warehouses. • Decreased postharvest losses for producers.	• Quantity of grains graded, certified, and warehouse receipted of producers and other actors in the value chain. • Emergence and amount of premium offered for quality or graded grain. • Quantity of grain sold in new markets accessed because of quality or increased volumes. • Credit accessed by producers and other value chain actors through warehouse receipts. • Higher prices obtained by producers through either storage or pooling. • Financial viability of Ghana Grains Council, or at least of the WRS component.
Nucleus farmers or aggregators	• Extra-/nonmarket arrangements between nucleus farmers and producers that reduce price risk for producers and/or improve access to markets. • Improved access to inputs and services through nucleus farmers or financial institutions. • Upgraded technology of production and increase in area planted. • Emergence of mutually beneficial relationships (coordination and assurances) among value chain actors that increase value/volume of business and encourage investments.	• Changes in prices obtained by participating farmers and any reduction in risk or marketing costs. • Change in access to credit and/or access to inputs and services due to relationship with nucleus farmers. • Change in access to services managed by producers themselves (tractors, for example). • Change in level of technology adoption, yield, and total production of participating producers. • Viability of FBO-managed service provision (tractors). • Changes in volume of business and investments by value chain actors (nucleus farmers, input dealers, and processors or traders)—whether or not participation here comes at the cost of reduced participation elsewhere.
Grain district value chain committee	• Producers benefit from improved access to credit, inputs, services, and markets through interactions with input dealers, financial institutions, and buyers; and organization of their own service provision. • Commitments by buyers to offer a market to producers encourages financial institutions to extent credit to producers.	• Changes in producers' access to credit and inputs and services. • Change in level of technology adoption, yields, and total production of participating producers. • Changes in prices obtained and price risks and marketing costs. • Viability of FBO-managed service provision (for example, tractors).

Table 4.2 Continued

Intervention	Outcome	Indicators
• Horticultural value chain committees	• Improved access to services, including new services and upgraded technology of production. • Higher and/or predictable prices through the development of nonmarket relationships with exporters and processors. • Improved quality to obtain premiums and access to export markets. • Improvements in the operations of some actors—agricultural credit extended by financial institutions, for example.	• Changes in prices obtained and access to markets (proportion of production sold). • Changes in technology adoption, yield, and production. • Changes in share of production meeting higher quality requirements for export. • Changes in access to credit, inputs, and services. • Changes in terms of exchange and risks.
• Processor-led development	• Producers benefit from access to investment funds, technical assistance, credit, and inputs to participate in higher value chains. • Smallholders participate in more remunerative value chains (superior milled rice, rubber, and palm oil); they diversify their crops to earn higher incomes.	• Increase in incomes from participation in higher value chains. • Increase in processing of agricultural commodities.

Source: Authors.
Note: FBO = farmer-based organization.

Value Chain Diagnosis and Working with the Private Sector

Value chain analysis is the essential first step to VCD. Developing value chain models for any given product reveals the interactions among stakeholders and helps in identifying interventions required to improve efficiency and achieve desired outcomes (Roduner 2007). Chain analysis could also be used to examine alternative value chains for similar or closely related products in order to identify chains that may be most suitable for the poor to participate in (Haggblade et al. 2012).

Nearly all proponents of VCD emphasize participation of all economic agents in a value chain analysis and collective decision making in planning. Thus, VCD strategy would be a vision shared by all actors (IFAD 2014). The ILO uses a participatory value chain analysis to identify the underlying constraints, and works with both private and public stakeholders to address chain-specific constraints (Núñez and Sievers 2011). Similarly, ACDI/VOCA's value chain approach is participatory and stakeholder driven, with the aim of understanding opportunities for and constraints to increased competitiveness (Campbell 2006). GIZ's value chain development employs a multistakeholder participatory approach to plan, design, and implement interventions because it promotes cooperation and enhances ownership of the whole process among the chain actors (Becker, Tram, and Tu 2009). USAID too feels that significant stakeholder involvement in value chain initiatives is necessary to increase the likelihood of success and sustainability: when stakeholders understand and take ownership of VCD, they are likely to remain engaged beyond the life of the project (USAID 2009).

There are three potential approaches to planning for VCD: comprehensive planning based on detailed, analytical, value chain mapping and market analysis; participatory workshop-centered value chain analysis; and offering incentives for private-sector-driven projects where conception is left to value chain actors who will lead the development (Altenberg 2007). Most strategies may be developed using a combination of analytical and participatory approaches. Ghana appears to have used a participatory workshop-centered approach to develop its maize and yam strategies and a combination of analytical mapping and participation in the cocoa sector development strategy. Participatory approaches often fail to clearly identify gaps in chain performance or to explain those gaps in terms of policies and market failures (Subramanian 2006 cited in Altenberg 2007). The maize and yam value chain strategies, for example, do not benchmark productivity to identify appropriate policies and investments. They also lack economic analysis to suggest how the strategies may incentivize producers. Consequently, they do not indicate the technology upgrading that might underlie the strategies. As in the cases of VCD discussed, the focus is on institutions with the expectation that institutional arrangements will take care of technology challenges.

The Ghana Commercial Agricultural Project employs the last of these approaches. It leaves the project design to private entities promising grants and investments if the proposed projects benefit smallholders. This approach, as with some of the VCD cases, may result in subsidizing private gains rather than public goods (Altenberg 2007). But as noted earlier, whether downstream interventions benefit upstream producers is an important consideration to keep in mind.

Beginning with commitment to partnership building as part of the commitment to the Comprehensive Africa Agriculture Development Programme (CAADP), there have been efforts to engage the private sector, including civil society, in planning and monitoring development activities. At the country level, this has taken the form of inclusion of private-sector representatives, as signatories to the CAADP compact, in planning and review meetings and as members of important committees such as the Medium-Term Agriculture Sector Investment Plan (METASIP) implementation for which MoFA is accountable. To a large extent, such engagement may have been only ceremonial and unsatisfactory to both government and the private sector. VCD projects have offered a practical way to engage the private sector, but whether broader government–private sector relations can be built on them is likely to depend on the outcomes of these projects in terms of benefitting smallholders.

Summary

VCD appeals to development practitioners because of the perceived potential that it offers for smallholders to gain access to markets. Facilitating the development of nonmarket contractual relations among actors is a key aspect of VCD to resolve some of the market failures faced by smallholders. The increasing incidence of contracts among value chain actors, particularly to meet the growing demand for quality, offers prospects, but contracts have been difficult to enforce in Ghana and the feasibility may be limited to certain types of crops.

VCD differs from the traditional approach to agricultural development that entailed investments in the provision of public goods, technology and extension in particular, and the fixing of market failures in key input and output markets. Desired change was achieved through adoption of productivity-enhancing technologies, facilitated by institutional changes. VCD is largely an exercise in institutional development, as it seeks to create relationships, primarily vertical contracts, between actors that could potentially encourage producers and other actors to upgrade their operations. The path to productivity improvements is not clear in VCD. Smallholders can potentially benefit from getting into interlinked contracts to overcome some of the market failures they face, but whether they benefit from investments made downstream needs to be seen.

The current emphasis on building partnerships with the private sector for a private sector–led development of agriculture has not led to an effective way of engaging the private sector. VCD approaches have offered a practical way to work with the private sector. Whether it will lead to a basis for building government–business relations will depend on the extent to which the outcomes will be beneficial to smallholders.

APPENDIX: SUPPLEMENTARY TABLES

Table A.1 Case studies of value chain development

No.	Case/crop	Location	Implementer	Donor
1.1	Aggregator or nucleus farmers	Northern Ghana	ADVANCE of ACDI/VOCA	USAID
1.2	Ghana Grains Council	Ghana	ADVANCE	USAID
1.3	District value chain committees	Northern Ghana	Northern Rural Growth Program	IFAD
2.1	Orange	West/Central Ghana	Market-Oriented Agriculture Programme	GIZ
2.2	Mango	Eastern Ghana		
2.3	Pineapple	West/Central Ghana		
3.1	Rubber	Central Ghana	Outgrower and Value Chain Fund	GIZ
3.2	Rice	Eastern Ghana		
3.3	Oil palm	Central Ghana		

Source: Authors.

Notes: ADVANCE = Agricultural Development and Value Chain Enhancement program; USAID = United States Agency for International Development; IFAD = International Fund for Agricultural Development; GIZ = Deutsche Gesellschaft Internationale für Zusammenarbeit.

Table A.2 Persons contacted during the trip

Date	Title	Organization and representative
Grains (Maize) Value Chain Development		
4/18/2013	Meeting NRGP official at Tamale	NRGP—value chain specialist (Pascal Baylon Dere)
4/18/2013	Visit to GUNDAA Produce Enterprise at Tamale	
4/19/2013	Meeting with ACDI/VOCA ADVANCE at Tamale	ACDI/VOCA ADVANCE—chief of party (Thomas Carr) and technical leader (Outreach) (Collins Boafo)
4/19/2013	Meeting with DVCC representatives from the Northern Region at Tamale	DVCC—FBO representatives, input dealers' representatives, and tractor operators' representatives
5/9/2013	DVCC at Jema, Kintampo South District	DVCC, Kintampo Rural Bank, Department of Cooperatives and MoFA/NRGP
5/10/2013	Premium Foods Ltd., Jachie near Kumasi	Premium Foods Ltd.—Emmanuel Fosu and Kennedy Amoano
5/30/2013	DVCC at Bulenga, Wa East District	DVCC members, US Peace Corps, farmers (2), MoFA, tractor service provider
6/3/2013	DVCC at Zuarungu, Bolgatanga Municipal	DVCC, ACDEP, MoFA
4/30/2013	Meeting with Ghana Grains Council in Accra	Ghana Grains Council—CEO (Kadri Alfah)
Citrus, Pineapple, and Mango Value Chain Development		
6/19/2013	Meeting with VC coordinators from Northern and Central regions in Accra	GIZ/MOAP—Northern regional VC coordinator (Anna Weber), Central regional VC coordinator (Margot Wieczorek), national Monitoring & Evaluation adviser (Bismark Agyei Yeboah)
7/3/2013	Meeting with VC coordinator for Volta Region in Accra	GIZ/MOAP—Volta regional VC coordinator (Peter Ratsch Rainer)
7/9/2013	Discussion with Citrus VCC, Ajumako-Enyan-Essiam District, Central Region	Citrus VCC—(chairman and secretary) and MoFA—(District Development Officer {crops and extension}) and (management and information systems officer)
7/9/2013	VC committee meeting—observations, Ajumako-Enyan-Essiam District, Central Region	FBOs, ADB, MoFA (input dealer) and MOAP (technical advisers)
7/9/2013	Discussions with individuals at Ajumako, Ajumako-Enyan-Essiam District	FBOs, DVCC—citrus (input dealer), GIZ/MOAP (MOAP officials)
7/10/2013	Pineapple DVCC meeting—observation; at Saltpond, Mfantseman Municipal	Ekumfiman Rural Bank, ADB, microfinance company representative, MoFA, MOAP, pineapple DVCC (FBOs representative, processors, and service providers), Mfantseman Municipal (District Assembly's representative)
7/10/2013	Pineapple DVCC—individual member discussion at Saltpond, Mfantseman Municipal	Profound Company—chairman, Pineapple DVCC (processor) (Col. Ato Eninful [rtd.]), Ebenut Ghana—processor (PaullyApea-Kubi) and input dealer
7/11/2013	Meeting with Volta Region MOAP officials	GIZ/MOAP—Volta regional VC coordinator (Peter Rainer), MoFA-EMQAP/GLOBALG.A.P.—horticultural expert (Victor Avah) and GIZ/MOAP—technical trainer (Ben Offei)
7/11/2013	Visit to a mango farm and meeting with mango producer	Volta Mango Growers Association—President (Mr. Asare)
7/11/2013	MoFA, MOAP, Volta Value Chain Committee (VVCC) and consultant at Ho, Ho Municipal	VVCC—deputy chairman {Mango FBO chairman} (Kpe Amegbor), input dealer {secretary of GAIDA} (Monica Awuku), MoFA—M&E (Sewu Aborta), DDO (Raymond Atutonu) and GIZ/MOAP—consultant (Herve Boukoua)
7/12/2013	Meeting with VVCC and FBO executives at Vakpo, Kpando Municipal	VVCC—chairman {mango farmer} (Vincent Kofi Geraldo), deputy secretary (Joe Divine Anef) and Kingdom Fruits—farmer (Emmanuel Semavor)

Table A.2 Continued

Date	Title	Organization and representative
Outgrower and Value Chain Fund		
5/3/13	Meeting Outgrower and Value Chain Fund official in Accra	Outgrower and Value Chain Fund—fund manager (Mark Owusu Ansah)
8/7/2013	Discussion with oil palm financial operator at Asesewa	Upper ManyaKlo Rural Bank Ltd.—head of credit (Daniel Kumi-Dei)
8/7/2013	Discussion with oil palm outgrowers' association at Asesewa	Klo Oil Palm Outgrowers Association—chairman (Divine Nartey)
8/7/2013	Discussion with oil palm technical operator at Asesewa	AsareOdometa Plantations Ltd.—managing director (Nene Mate—Kole)
8/27/2013	Meeting with rice technical operator in Accra	Praire Volta Ltd.—GM/CEO (Kojo Osae-Addo)
8/28/2013	Discussion with rice outgrower association at Aveyime	Aveyime Irrigation Cooperative Marketing Society—chairman (Nicholas Patamiah) and GIDA—project manager (Joshua Tsaley)
8/28/2013	Discussion with rice outgrower association at Mepe	Mawuko Farmers' Association, Dadome—Mepe—secretary (Paul Gborgbor)
9/4/2013	Discussion with rubber technical operator and outgrower association in Accra	Rubber Plantations Ghana Ltd.—director (Jimmy Khubchandani), general manager (Joseph Biju), and Association of Eastern Region Rubber Outgrowers—chairman (Fred Koranteng)
9/11/2013	Visit to rubber farms and processing site, Asamankese	Rubber Plantations Ghana Ltd.—general manager (Joseph Biju), outgrower (Ofori)
Other Value Chain Promoters/Facilitators Met		
		ACDEP—Upper West regional manager (Joseph Apeliga), project officer (Baama Chatin)
		MoFA—district director, Kintampo South (Yakubu Azumah), schedule desk officer NRGP, Kintampo South (Vincent Yidana)
		EDAIF, Tamale Zonal Office—credit and project officer (Abdul-hakim Yakubu)
		Nucleus farmer/aggregator—(HajeiTeni Tia)

Source: Authors.

Notes: NRGP = Northern Rural Growth Project; ADVANCE = Agricultural Development and Value Chain Enhancement program; DVCC = district value chain committee; FBO = farmer-based organization; MoFA = Ministry of Food and Agriculture; ACDEP = Association of Church-Based Development NGOs; VC = value chain; GIZ = Deutsche Gesellschaft Internationale für Zusammenarbeit.

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