



USAID
FROM THE AMERICAN PEOPLE

OUTREACH, OUTCOMES AND SUSTAINABILITY IN VALUE CHAIN PROJECTS

microREPORT #171

SEPTEMBER 2011

This publication was prepared by Lucy Creevey, Elizabeth Dunn and Elisabeth Farmer for ACDI/VOCA with funding from USAID under the Accelerated Microenterprise Advancement Project (AMAP) Knowledge and Practice II task order.

OUTREACH, OUTCOMES AND SUSTAINABILITY IN VALUE CHAIN PROJECTS

microREPORT #171

DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

CONTENTS

I. INTRODUCTION..... 1

II. VC PROJECTS AND INTERVENTION STRATEGIES..... 3

III. OUTREACH 6

IV. OUTCOMES 8

V. SUSTAINABILITY..... 13

VI. SUMMARY AND CONCLUSION..... 16

REFERENCES..... 17

ANNEX 19

TABLES AND FIGURES

Table 1: Overview of Seven Value Chain Projects 3

Table 2: Project Outreach to Direct and Indirect Contact Entrepreneurs 7

Table 3: Project Outcomes (Quantitative)..... 10

Figure 1: Outreach Categories for Value Chain Projects..... 6

ACRONYMS

| | |
|--------|---|
| B-ACE | Banana Agri-Chain Competitiveness Enhancement project (Philippines) |
| BTV | Behind the Veil project (Pakistan) |
| FTE | Full-time equivalent |
| GAP | Good agricultural practices |
| GMED | Growth-oriented Microenterprise Development project (India) |
| KMDP | Kenya Maize Development Program |
| MSEs | Micro- and small enterprises |
| MSME | Micro, Small and Medium Enterprise project (Cambodia) |
| RED | Rural Economic Diversification project (Honduras) |
| PROFIT | Production, Finance and Improved Technologies project (Zambia) |
| PSD | Private sector development |
| SMEs | Small and medium enterprises |
| SMLEs | Small, medium and large enterprises |
| VC | Value chain |

I. INTRODUCTION

The value chain (VC) approach to private sector development (PSD) is characterized by several specific intervention strategies. At the core of the approach is a systems perspective that recognizes the inter-connections among actors at multiple levels of the VC—from input providers to producers, processors, wholesalers and retailers—as well as with and among support service providers, such as financial institutions, extension workers and transport companies. This systems approach further recognizes the effect of the formal and informal enabling environment on the incentives and decision-making processes of VC actors and service providers.

Rather than focusing on specific actors or constraints in the chain, the VC approach calls for an analysis of the competitiveness of the overall system to develop an understanding of how and why the system functions as it does, including the underlying causes for priority constraints. Interventions aim to address the causes of constraints related to inputs, production, processing and/or marketing not by working with every actor in the system, but by working at strategic leverage points that can catalyze systemic change. Interventions in the dairy sector, for example, may include not only expanding farmer access to quality inputs and loans, but also expansion of cold storage facilities and processing alternatives to reduce risk, and mechanisms to build trust between small-scale farmers and buyers. In addition, where government regulations impede the easy flow of dairy products, a VC project may engage in working to improve the regulatory climate.¹

A second key feature that distinguishes the VC approach from more conventional PSD programs is the emphasis on facilitating market-based solutions, rather than relying on direct intervention. Thus farmers may be shown new production methods, but the new methods will be demonstrated where possible by other farmers, buyers or service providers rather than by project staff. These farmers, buyers and service providers will provide training as a response to commercial incentives to expand their own product supply base, improve product quality and/or quantity or, in the case of business service providers, to expand their clientele.

While VC projects share these common features—a systems approach and facilitation of market-based solutions—not all projects intervene in exactly the same way or at the same scale. Some projects intervene in several value chains, while others focus on one or relatively few VCs; many intervene at numerous levels of the VC, while others target a limited number of leverage points. However, since value chain projects share some common intervention strategies, these types of projects are expected to result in certain predictable patterns in outreach, outcomes and sustainability:

1. The *outreach* of VC projects will extend beyond those firms and individuals in direct contact with the project. Additional firms and individuals will be reached indirectly through their vertical and horizontal business relationships with the direct contacts. A third type of outreach may occur through the demonstration effect when non-contact firms at any level of the VC copy the new ways of doing business demonstrated by firms reached directly and indirectly by the project.
2. The *outcomes* of VC projects will occur at multiple levels of the VC, since most VC projects work to facilitate changes at and between multiple levels, such as production, wholesale, processing, supporting markets, end markets, and the surrounding business enabling environment.
3. The *sustainability* of changes facilitated by VC projects will derive from the reliance on market-based forces to perpetuate win-win relationships between VC actors. Under these conditions, newly established or

¹ For a discussion of the value chain approach, see Ruth Campbell, *Key Elements of the Value Chain Approach* (USAID, 2008). Additional background information is available in Michael Porter, *Competitive Advantage; Granting and Sustaining Superior Performance* (The Free Press, 1985) and Carlo Pietrobelli and Roberta Rabellotti eds., *Upgrading to Compete; Global Value Chains, Clusters and SMEs in Latin America* (Inter-American Development Bank, 2006).

strengthened business relationships have the potential to become self-perpetuating and continue beyond the life of the project.

The purpose of this paper is to examine these three hypotheses based on evidence from seven VC projects.² The seven projects included in the analysis (detailed in the annex) were implemented in different countries and focused on primarily agricultural value chains. While the same types of data are not available for every project, there is enough information to permit a systematic examination of project results in terms of outreach, outcomes and sustainability.

Section II of this paper has two parts. First, there is a brief overview of the seven projects—what value chains they worked with, what goals they set for themselves, project costs and the time period over which each project operated. The second and lengthier part looks in detail at project activities within one value chain for each of the seven projects. For those projects that worked in multiple value chains (Cambodia, Honduras, India and Zambia), the authors selected one VC that was the major focus at project end and/or had the largest number of targeted participants. Project activities were analyzed by mapping them to the structural and dynamic elements in the value chain framework.

The next three sections of the paper examine the hypotheses related to outreach, outcomes and sustainability. The evaluation of outreach raises the question of how to identify and categorize the beneficiaries of a VC project. Next, observed economic outcomes within the seven value chains are presented in some detail, along with a discussion of outcomes not as easily measured, such as strengthening business linkages, product upgrading and an improved regulatory environment. Where information is available, the paper looks at impacts on poverty reduction, which is a general goal for most of the projects. A few examples illustrate how outreach and outcomes were achieved—how projects succeeded in reaching their targets and, in some cases, how they failed. Only tentative conclusions can be made relative to the sustainability hypothesis, due to the fact that little time has elapsed since the projects ended. Instead, the paper identifies possible predictors of sustainability and examines the seven VC projects to determine which of the projects exhibit relatively more potential for sustainability.

² The project reports, evaluations and other assessments consulted for this paper are listed in the bibliography.

II. VC PROJECTS AND INTERVENTION STRATEGIES

A. OVERVIEW OF PROJECTS

In addition to a systems approach and facilitation of market-based solutions, the projects included in this study share a third feature that is also characteristic of VC projects. These projects attempt to integrate large numbers of small-scale enterprises into competitive VCs, with the goal of having the smaller firms contribute to VC upgrading while simultaneously benefitting from participation in the VC. Increased productivity, sales and incomes in small-scale enterprises are facilitated as a means of improving the well-being of low-income entrepreneurs and their households. In some circumstances, gains in productivity and sales are associated with increased employment, thus further benefiting low-income households in the same communities. Table 1 lists the seven projects along with their stated goals, duration of the intervention and project costs. If a project worked in multiple VCs, several are listed. The first (or only) VC listed for each project is the one focused on in the detailed analysis of the intervention portfolio.

Table 1: Overview of Seven Value Chain Projects

| Country and Project Name | Value Chain | Goal* | Project Budget | Time Period |
|---|---|---|----------------|--------------------------|
| Cambodia MSME Micro, Small and Medium Enterprise | Pigs Also: pond fish aquaculture, bricks & tiles, agricultural machinery | To improve entrepreneurship and competitiveness for micro, small and medium enterprises (MSME) in selected value chains and target provinces by enabling improvements to businesses and the business environment. | \$5 million | 2005-2008 (3 years) |
| Honduras RED Rural Economic Diversification | Horticulture Also: agroforestry, maize, processed products, beans | To increase incomes and employment opportunities in Honduras' rural communities, focusing specifically on the horticulture sector. | \$17 million | 2005-2010 (5.5 years) |
| India GMED Growth-Oriented Microenterprise Development | Fresh Vegetables Also: municipal sanitation, organic products, maize | To develop sustainable and scalable approaches to job creation through fostering the growth of micro- and small enterprises (MSEs) in agribusiness and urban services. | \$6 million | 2004-2008 (4 years) |
| Kenya KMDP Kenya Maize Development Program | Maize Also: pulses, tubers | To increase rural household incomes through improved production and marketing efficiency in the maize subsector. | \$11.2 million | 2002-2010 (8 years) |
| Pakistan BTV Behind the Veil | Embroidered Fabric | To integrate rural women into more profitable value chains, to increase their economic participation, and enable greater contribution to household income. | \$500,000 | 2004-2007 (3 years) |
| Philippines B-ACE Banana Agri-Chain Competitiveness Enhancement | Cardava Bananas | To increase the competitiveness of the cardava banana industry while promoting broad-based growth that involves and benefits the poor consisting of farmers and micro enterprises in a sustained way. | \$600,000 | 2007-2009 (3 years) |
| Zambia PROFIT Production, Finance and Improved Technologies | Maize, Beans & Groundnuts (inputs) Also: dairy, beef, cotton, pineapple | To increase multi-sector growth to ensure poverty reduction at the household level. (Ensure competitiveness of industry over time while ensuring that growing numbers of MSEs participate and benefit.) | \$17 million | 2005-2011 (6 years) |

*Goals were copied from project final reports. The one exception is Zambia PROFIT, for which the goals were copied from the project evaluation documents.

All but one of the projects intervened in at least one agricultural VC. Indeed many projects intervened in several different agricultural VCs over the project lifespan. Two projects, Kenya KMDP³ and Philippines B-ACE, intervened in a single value chain. In contrast, the Zambia PROFIT project worked in cotton, wheat, beef, pineapple, honey and dairy as well as input supplies for maize, beans and groundnuts. The Honduras RED project intervened in agroforestry, food processing and several horticultural VCs, including Asian vegetables, tomatoes, onions, sweet peppers, potatoes, plantains and watermelons. There were two projects that worked in both the agricultural and industrial sectors. The Cambodia MSME project worked in the swine value chain, as well as in pond fish aquaculture, bricks and tiles, and agricultural machinery. The India GMED project worked with several agricultural VCs, while also introducing contractual arrangements to bring new firms into municipal solid waste management. The one project without an agricultural component, Pakistan BTV, intervened in the VC for embroidered cloth and garments. The entrepreneurs who were intended to benefit from BTV were secluded, housebound women embroiderers in Pakistan.

B. PROJECT INTERVENTION STRATEGIES

The projects in this study employed the same general intervention strategies, but with slightly different emphases and methodologies according to country context and subsector. In order to facilitate comparative analysis of these diverse project intervention portfolios, a single VC was selected from each project. Interventions within each of these seven VCs were then mapped to the structural and dynamic elements of the VC framework. The table in the annex indicates how each of the seven projects intervened to facilitate change in the five structural elements and three dynamic elements of the selected value chain.⁴

In several projects, a primary emphasis was on strengthening ties between producers and private sector input suppliers in order to increase productivity. Zambia PROFIT, Cambodia MSME and Kenya KMDP all included this emphasis, although they approached it in different ways. Zambia PROFIT developed networks of community-based agents to increase input suppliers' outreach to smallholders, while Kenya KMDP leveraged private sector investment and participation in business fairs and demonstration plots, and Cambodia MSME facilitated embedded private sector technical assistance to improve genetic stock in swine, quality feed, access to vaccines and veterinary services.

In other projects, the main focus was on linking small-scale producers to new markets. Pakistan BTV and India GMED both fall under this category, although they differed greatly in their approach. BTV introduced a new type of intermediary into the market—mobile female sales agents—in order to reach homebound women embroiderers living in rural areas and isolated from profitable value chains. GMED, on the other hand, sought to facilitate commercial relationships between small-scale vegetable farmers and large-scale retailers in the emerging domestic supermarket industry.

The facilitation of embedded services was a recurrent theme. In many projects, input suppliers provided embedded services—MSME, KMDP and PROFIT are all cases in point. In GMED, embedded services were provided by the buyer, in the form of extension advice, training on demonstration plots and access to post-harvest facilities.

Changing value chain governance—the quality of the relationships within the value chain affecting the distribution of power, learning and benefits—is often an important aspect of VC projects. In Pakistan, BTV approached this in a structural way: recognizing the potential for exploitation of homebound or rural women by upstream value chain actors, they created embroiderer groups (“joint ventures”) and established two levels of female sales agents. The

³ KMDP focused exclusively on maize until the fifth year of the project (2006), when they began providing information on improving production of alternative crops (pulses and tubers). This adjustment was in response to drought conditions and other factors that prevented successful maize cultivation.

⁴ The five structural elements of the VC framework are 1) vertical linkages, 2) horizontal linkages, 3) supporting markets, 4) end markets and 5) business enabling environment. The three dynamic elements are 1) inter-firm relationships, 2) value chain governance and 3) upgrading. See Ruth Campbell, *The Value Chain Framework* (USAID, 2008).

groups increased embroiderers' bargaining power and prevented the creation of sales agent monopolies, while the community-level sales agents helped prevent exploitation by urban sales agents.

In the Philippines' cardava banana value chain, B-ACE also placed a strong emphasis on governance in relationships. The project worked to overcome mistrust among value chain actors by organizing roundtable discussions and publishing comics illustrating actors' joint stake in the overall competitiveness of the cardava industry. The project also presented its own calculations on profits at each level of the VC—calculations that showed farmers the costs and risks incurred by traders and exporters, and that demonstrated that their own low returns were due to a lack of good agricultural practices (GAP), rather than to the high cost of fertilizer (for which they had blamed traders).

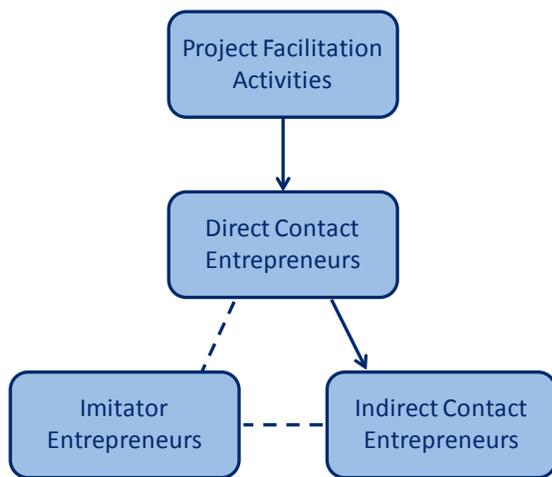
Strengthening linkages and relationships between firms at the same level of the VC—horizontal linkages—is an important objective of development projects that create solidarity groups, women's associations and farmers' cooperatives. VC projects may work to strengthen horizontal linkages, not just for producers but also for firms at any level of the chain where cooperation (e.g., collective action, advocacy or product bulking) increases efficiency. Exchange of information is another key reason for the creation of horizontal linkages, and is the impetus for the PROFIT project's promotion of networking amongst input supply dealers and BTV's creation of associations of sales agents. It is also the rationale behind the lead farmer model used by GMED, whereby one farmer trains his or her neighbors, often using his or her own farm as a demonstration plot.

The activities described above are designed to improve relationships and lead to upgrading of products, processes, functions and market channels. For instance, KMDP facilitated improved maize drying techniques—process upgrading—to reduce aflatoxin levels. PROFIT promoted the use of improved inputs critical to product upgrading. RED supported product upgrading through crop diversification and drip irrigation. Similarly, GMED facilitated both process and product upgrading, along with opening new opportunities for market channel upgrading. Several projects facilitated function upgrading: MSME supported pig farmers in becoming traders, B-ACE supported cardava farmers in becoming processors, and BTV supported homebound embroiderers in becoming sales agents. Incentives for these function upgrades included increases in enterprise profits and reduction of market risk.

III. OUTREACH

The evidence from the seven projects is consistent with the hypothesis that the outreach of VC projects extends beyond those firms and individuals in direct contact with the project. Almost all project final reports identify those who were targeted by project interventions and those who have benefited from project efforts. The largest number of these are producer-entrepreneurs (such as farmers) whose productivity, sales and net profits have increased because they upgraded their operations, connected to new or expanded market outlets and/or gained access to new or improved services. In addition to producers, the projects variously targeted input and service providers, processors, intermediaries and retailers.

Figure 1: Outreach Categories for VC Projects



In some cases the producers, input providers or buyers/processors are direct “clients” or “beneficiaries” of the project and have participated in project-funded training sessions, visited project-run demonstration plots or business fairs, or perhaps accessed project loans or worked with project-trained extension agents. These are identified in figure 1 as the **direct contact entrepreneurs**, meaning those entrepreneurs who come in direct contact with project-funded personnel, activities or materials.

In most cases project staff did not directly work with the target entrepreneurs. Rather, as is characteristic of VC projects (see section I), project efforts were directed at incentivizing, facilitating and improving linkages between producer-entrepreneurs and other firms in the value chain. By working with large-scale input and service suppliers in Zambia, for example, a new category of retail sales agents was developed. These retail sales agents not only went to rural areas to sell inputs (such as veterinary supplies) but also trained farmers in input use and improved methods of animal husbandry. Reached only through these for-profit sales agents, the largest numbers of project beneficiaries were farmers who were **indirect contact entrepreneurs**. Similarly, private veterinarians in Cambodia trained pig farmers in improved husbandry, sales agents introduced Pakistani embroiderers to new designs, and privately employed extension agents helped train Indian vegetable farmers in better production and post-harvest methods. Indirect contact entrepreneurs receive project-generated benefits through their commercial relationships with direct contact entrepreneurs. In most cases, direct and indirect contact entrepreneurs are vertically linked in the value chain.

A third and potentially large category of project beneficiaries are the **imitator entrepreneurs** who have adopted new practices and entered into new business relationships as a result of the demonstration effect. In other words, the imitator entrepreneurs observed and copied the new practices of their neighbors (or business competitors). While the entrepreneurs providing the demonstration may be direct or indirect contact entrepreneurs, these “demonstrators” may themselves be imitator entrepreneurs. Such a spillover effect makes it possible for results to extend beyond the project’s direct or indirect outreach and can be an extremely important part of the project strategy for reaching scale.

These three categories—direct, indirect and imitator entrepreneurs—still may not fully capture project outreach. Project-facilitated changes in enabling environments or supporting markets may affect **all** the businesses in the value chain. Project benefits extend beyond entrepreneurs to people who are employed in new jobs created by production and sales growth or, just as importantly, to existing employees who have become more fully employed and are receiving a higher salary as a consequence. Of course, those enterprises that do not adopt new techniques or establish new business connections may be crowded out and become relatively less profitable. Overall, however, where new

services, inputs and sales outlets are available to everyone, or where there have been improvements in the business enabling environment, the entire sector should gain. Finally, benefits extend to the households and communities of the affected entrepreneurs and employees. When farmers' net profits and workers' salaries increase, there is more money to spend on household needs, and there can be multiplier effects that benefit the community as a whole.

When a VC project is successful, its outreach is an expanding set of ripples by which changes in some businesses induce other businesses to change and the demonstration effect reverberates throughout the chain until the VC as a whole has become more competitive. The empirical challenge is to correctly calculate the number of people a specific project has benefited in all three outreach categories. Project reports generally present the numbers of entrepreneurs targeted and reached directly and indirectly by the project although a few (such as RED) estimate the jobs created or the number of imitator entrepreneurs (GMED). Table 2 summarizes what the project reports identify as being direct or indirect beneficiaries in all VCs in which they worked. While these numbers do not include all those who may have experienced project-related improvements in income or living standards, the evidence indicates that the facilitation approach, a key strategy in VC projects, is capable of reaching large numbers of entrepreneurs.

Table 2: Project Outreach to Direct and Indirect Contact Entrepreneurs

| Project | Value Chains | Micro/Small Enterprises (1-9 employees)* | Larger Firms (10 or more employees) |
|-------------------|---|---|--|
| Cambodia MSME | Pigs | <ul style="list-style-type: none"> 1,209 pig farmers (22% female) 142 veterinarians 24 input suppliers | <ul style="list-style-type: none"> N/A |
| | Also: pond fish aquaculture, bricks & tiles | <ul style="list-style-type: none"> 264 fish farmers | <ul style="list-style-type: none"> 15 brick & tile-makers |
| Honduras RED | Horticulture | <ul style="list-style-type: none"> 2,200 lead farmers 4,896 FTE employment positions created in agriculture | <ul style="list-style-type: none"> 300 lead client firms |
| | Also: agroforestry, maize & beans, processed products | <ul style="list-style-type: none"> 1,700 lead farmers and client firms | <ul style="list-style-type: none"> 60 lead client firms |
| India GMED | Fresh Vegetables | <ul style="list-style-type: none"> 2,666 farmers 12,800 indirect beneficiaries | <ul style="list-style-type: none"> 5 corporate supermarket chains |
| | Also: fruit, maize, organic products, municipal solid waste | <ul style="list-style-type: none"> 7,200 fruit and mango farmers 3,990 organically certified farmers 450 maize farmers | <ul style="list-style-type: none"> 94 new municipal solid waste management firms, employing 1,323 people |
| Kenya KMDP | Maize | <ul style="list-style-type: none"> 384,925 farmers (34% female) | <ul style="list-style-type: none"> 172 BDS providers |
| | Also: pulses and tubers | <ul style="list-style-type: none"> 44,676 farmers (58% female) | <ul style="list-style-type: none"> N/A |
| Pakistan BTV | Embroidered Fabric | <ul style="list-style-type: none"> 9,425 rural embroiderers (100% female) 213 sales agents (100% female) 40 designers | <ul style="list-style-type: none"> N/A |
| Philippines B-ACE | Cardava Bananas | <ul style="list-style-type: none"> 25,469 producer MSEs | <ul style="list-style-type: none"> 290 supporting market MSEs 7 lead firms 10 trader SMEs |
| Zambia PROFIT | Maize, Beans and Groundnuts (inputs) | <ul style="list-style-type: none"> 143,810 smallholder farmers 1,500 in-community service providers | <ul style="list-style-type: none"> 4,067 agribusinesses |
| | Also: dairy, beef, cotton, pineapple, honey | <ul style="list-style-type: none"> 172,074 smallholder farmers | |

* Classifications based on average firm size (including family labor)

IV. OUTCOMES

The overall goal of all VC projects, including the seven considered here, is “sustainable economic growth with poverty reduction.”⁵ The pathway to this goal can be represented by a causal model in which the links between project interventions and changes in production, processing, marketing and the enabling environment are spelled out. Measuring outcomes (observed changes or absence thereof in outcome indicators) is critical to determining a project’s effectiveness in reaching its goals, although the exercise of inferring causality can be difficult since projects operate within specific environmental, economic and political contexts that affect outcomes while being outside the implementer’s control. An impact evaluation can establish a counterfactual to help distinguish project outcomes from changes that were not caused by the project. Of the seven VC projects in this study, only three—GMED, KMDP and PROFIT—were the subjects of impact evaluation studies comparing outcomes for project participants to non-participant comparison groups. But even without establishing a counterfactual, there is still sufficient evidence to examine the effectiveness of VC interventions.

A. QUALITATIVE OUTCOMES

While some project outcomes are specifically economic and measurable—such as growth in production, sales, processing and income—some of the more qualitative changes can be particularly significant indicators of a project’s effectiveness and long-term viability. These kinds of outcomes were visible particularly in the projects that worked directly with government agencies. In Kenya, for example, KMDP worked closely with the Ministry of Agriculture and supported the development of industry-wide standards and arbitration boards. In Cambodia, the MSME project worked with the government to end extralegal slaughterhouse fees and stop illegal pig imports, both of which were serious constraints to developing the swine value chain. In the Philippines, B-ACE worked with the government to develop campaigns promoting the cardava banana as a healthy and desirable food and brokered talks between the cardava cooperative and the government, as well as collaborating with local government authorities in outreach and advocacy. In Pakistan, BTV collaborated with the government to promote products sold by its sales agents through exhibitions. In all these cases, the projects successfully facilitated the development of a more open and receptive environment for development of the VC.

Another important outcome is an increase in trust among VC actors. The B-ACE staff organized workshops for actors in the cardava VC, held roundtables on GAP standards, promoted festivals and competitions and gave small growers the opportunity to understand and incrementally adopt needed upgrades in production and changes in marketing behavior. This gave producers the awareness and self-confidence they needed to trust the larger firms. RED facilitated the establishment of links among private sector actors at different levels of the fresh fruit and vegetables chain, leading to more clearly defined relationships among actors and increased trust and confidence. KMDP provides a third example: it promoted farmers’ groups as agents for their members in buying, selling, and receiving credit, information and training. By project end, 95 percent of the farmers in all KMDP project areas belonged to such groups.

An intangible but significant contribution of many of these VC projects was “opening a door” that established a precedent for future commercial interactions. Such was certainly the case with BTV where, along with observed changes in the overall social and cultural restrictions on the embroiderers, these homebound women were connected with market outlets, had access to improved design patterns, and were able to negotiate more favorable pricing. As in the outcome for KMDP, the embroiderers exhibited an increase in confidence combined with the ability to obtain better, more competitive prices for their work.

⁵ Campbell, Key Elements...op.cit., p. 1

Of course, not all of these precedent-setting interventions led to an immediate rush of product sales and growth in profits. In some cases expected economic outcomes did not even occur. For example, GMED took advantage of the government of India's relaxation of vegetable marketing rules to facilitate the establishment of direct links between large retail buyers and small vegetable farmers. Buyers encouraged farmers to adopt new production standards and techniques. By the end of the project, an economic recession led many of the larger buyers to retrench and withdraw from the initial market arrangements they had established with the farmers.⁶ As might be expected, vegetable farmers in the areas where the vertical linkages remained active adopted the new techniques at a significantly higher rate than farmers in areas where buyers had withdrawn. Despite the negative effects of the recession, two important outcomes were clearly accomplished. First, large companies saw that buying from small farmers made business sense (under certain economic conditions) and farmers recognized that altering production methods could result in better, more marketable products. Furthermore, farmers observed that the dynamics in the wholesale markets (*mandis*)—where collusion among traders was typical and no price premium was given for quality—could be influenced and arbitrarily low prices adjusted. The existence of another outlet for smallholders' produce (the large buyers) led *mandi* traders to increase transparency and adjust their pricing structure to remain competitive. These are very important precedents, which should favorably affect small vegetable farmers in the future.

B. QUANTITATIVE OUTCOMES

Changes in some of the more measurable outcomes are reported in table 3, which indicates that nearly all projects witnessed increases in firm sales and profits. The strongest evidence that these were results of the programs (and not due to general economic conditions) is found in the projects that established counterfactuals. In PROFIT, for example, producers who had access to the project's input agent network increased their earnings from maize, bean and groundnut sales by 173 percent on average between 2006 and 2009, compared to an increase of just 47 percent for non-participating producers. In KMDP, participating households sold 18.6 bags of maize per season in the final year of the project, whereas households in the comparison group sold only 6 bags of maize, a difference that was largely due to increases in farm productivity. Indeed, KMDP farmers experienced an impressive increase in productivity, with an average output of 27 bags of maize per acre (a 238 percent increase from 8 bags at baseline), compared to the comparison group's production of 16 bags per acre in 2010.⁷ In GMED, in the year before the general economic downturn, participant farmers earned significantly higher revenues than the comparison group. And, in 2009, after the economic downturn, in the project area where corporate buyers were still buying vegetables, farmers served by the GMED project again did significantly better than those who were not involved in the project.

Other projects also reported growth in the profits and sales of participating firms, although no counterfactual is provided. Honduras RED, Cambodia MSME and Pakistan BTV all registered significant profit increases for large numbers of producers. While these projects primarily targeted producers, other VC actors reported significant benefits as well—as would be expected from projects promoting win-win outcomes. In Pakistan, female sales agents increased their monthly profits by \$229—substantially higher than the embroiderers' profit increases of approximately \$15 per month.⁸ Similar patterns (of relatively higher increases in sales values for input or service providers) were found for supporting market small and medium enterprises (SMEs) and lead firms in Philippines B-ACE and for input suppliers in Cambodia MSME. In many projects, it appeared that producers started businesses at other levels of the VC through function upgrading. Looking again at Pakistan, BTV reports that a number of rural embroiderers became sales agents, thereby benefiting from the economic opportunities that resulted from increased mobility.

⁶This was not true in all project zones. In Medak, ITC continued to buy from the farmers who established very successful and profitable patterns of vegetable production and sales and showed a significant profit over the life of the project.

⁷This suggests a difference of 11 bags per acre, although the evaluation report states that treatment effect and propensity score matching reduce the difference between the two groups to just over 6 bags per acre.

⁸Nevertheless, the percentage increase in profits for embroiderers is high at 257 percent due to their low baseline profits (\$6), which increased to over \$21 by the end of the project.

Production costs are a key factor in determining whether or not increased sales lead to higher net profits. Changes in production costs varied across the projects. In the Philippines, the B-ACE program reported a decrease in production costs for targeted producers. In contrast, several projects reported production cost increases. In some instances, this was due to increased use of improved inputs, as in the case of pig farmers in Cambodia, but increased productivity and sales resulting from the improved inputs more than compensated for higher production costs. In Honduras, the RED program reported a 30-40 percent increase in production costs per hectare of vegetables; but increased productivity corresponded to production cost *decreases* of up to 50 percent per metric ton of vegetables produced. In other cases, increased costs were a result of an increase in input prices, such as the increase in fertilizer prices observed in KMDP. Here the counterfactual suggests that the project had a positive effect, as KMDP participants saw their production costs rise by 118 percent, while a comparison group saw its costs rise by 200 percent.

Poverty reduction was an overall goal in all seven projects. A poverty impact assessment of three USAID programs in Kenya, including KMDP, was conducted by Edgerton University's Tegemeo Institute. The researchers compared project participants, non-participants in villages where one or more of the projects were working, and non-participants in villages where none of the projects was working (the control group). They observed significant poverty reduction between 2004 and 2008 in all three groups, but the poverty rate for the control group dropped significantly less. A decrease in the poverty rate of 4.9 percentage points (where poverty was defined as household members having incomes below \$1.25 a day) was found to be attributable to the projects. One possible inference is that KMDP participant farmers (and imitators) gained knowledge, confidence and access to relevant information and services, rendering them more capable than before of dealing with market changes associated with the economic downturn and more capable than their neighbors in control villages. To the extent that other VC projects operate in this way, they may have the same result.

Table 3: Project Outcomes (Quantitative)

| Project & Value Chain | Economic Growth Indicators | Results Data | | | Timeframe |
|-----------------------|------------------------------|--|---|--|-----------|
| | | Producers (n = 1,209) (22% women) | Veterinarians (n = 142) | Input suppliers (n = 24) | |
| Cambodia MSME Pigs | VC Actors/ Service Providers | | | | 2005-2008 |
| | Productivity | 23% decrease in average days to raise pig to 80-90 kg live weight (from 167 to 129 days) 30-45% reduction in pig mortality (depending on pig age) | | | |
| | Production costs | 50% increase in annual cost of production (from \$1,360 to \$2,036) | | | |
| | Sales volumes/values | 363% average increase in sales volume (8 to 38) 487% average increase in sales value (\$645 to \$3,786) | 87% average increase in sales value (\$1,516 to \$2,840) | 45% average increase in sales value (\$134,150 to \$194,281) | |
| | Firm profits | 41% average increase in gross profit (\$1,241 to \$1,751) | 20% average increase in gross profit (\$577 to \$691) | 46% average increase in gross profit (\$63,653 to \$92,751) | |
| | Employment | 3.5% increase in household member employed (3.16 to 3.27/SME) | 15% increase in household member employed (1.65 to 1.9/SME) | 11% increase in household member employed (2.47 to 2.73/SME) | |
| | Exports | Not reported | | | |

| | | | | |
|--------------------------------------|---|--|---------------------------|-----------|
| Honduras RED Horticulture | VC Actors/ Service Providers | MSMEs (n = 2,200) | | |
| | Productivity | Increases of 25% to 400%, depending on vegetable and baseline technology level | | 2005-2010 |
| | Production costs | 30-40% increase in production costs by area, but up to 50% decrease in production costs by unit 30% average decrease in post-harvest losses | | |
| | Sales volumes/values | \$34.8 million total increase in sales | | |
| | Firm profits | 703 fruits & vegetables producers increased their annual incomes by over 40% | | |
| | Employment | 4,896 new full-time equivalent (FTE) employment positions created | | |
| | Exports | Not reported | | |
| India GMED Vegetables | VC Actors/ Service Providers | Farmers (n = 2,666) | Lead firms (n = 5) | |
| | Productivity | 81% of farmers in Haryana Cluster had more than 15% increase in average vegetable production 91% of farmers in Kolhapur and Sangli Cluster had more than 15% increase in average vegetable crop production | | 2004-2008 |
| | Production costs | Not reported | | |
| | Sales volumes/values | 143% growth in sales by smallholder farmers | | |
| | Firm profits | Not reported | | |
| | Employment | Not reported | | |
| | Exports | Not reported | | |
| Kenya KMDP Maize | VC Actors/ Service Providers | Producers (n = 384,925) | | |
| | Productivity | 238% increase in productivity (from 8 to 27 90-kg bags per acre) Comparison group: 16 bags/acre (treatment effect and PSM reduce difference between two groups to 6.1 bags/acre) | | 2002-2010 |
| | Production costs | 118% increase in maize production costs for KMDP farmers 200% increase in maize production costs for comparison group | | 2006-2010 |
| | Sales volumes/values | 18.6 bags of maize sold per household in 2010 (59% of total production) 129% increase in average annual sales value (13,325 KShs in 2006 to 30,524 KShs in 2010) 6 bags of maize sold per household in 2010 for comparison group (32% of total production) | | |
| | Firm profits | 1,239 KShs increase in profits per 90-kg bag (from -26 KShs in 2006 to 1,213 KShs in 2009) | | |
| | Employment | Not reported | | |
| | Exports | Not reported | | |

| | | | | | | |
|---|-------------------------------------|--|--|---|-----------|-----------|
| Pakistan BTV Embroidered Garments | VC Actors/ Service Providers | Producers (n = 9,295 total, 6,546 active) (100% women) | Sales agents (n = 174) (100% women) | Designers (n = 40) | | |
| | Productivity | Not reported | | | 2004-2007 | |
| | Production costs | Not reported | | | | |
| | Sales volumes/values | \$1,289,407 total sales per year | \$1,973,704 per year | \$17,600 per year | | |
| | Firm profits | 257% average increase in monthly profits during active months (from \$6 (est. baseline) to \$21.43) Revenue/unit: \$9 - \$16 (vary by region) | \$2,745 average annual benefit (difference in income pre-project and post-project) Revenue/suit: \$13 - \$28 (vary by region) | Not available | | |
| | Employment | 174 sales agents jobs | | | | |
| Exports | Not reported | | | | | |
| Philippines B-ACE Cardava Bananas | VC Actors/ Service Providers | Producers (n = 25,469) (53% women-owned/managed) | Supporting market MSEs (n = 290) | Lead firm SMLEs (n = 17) | | |
| | Productivity | 24% increase in annual productivity (539 kg/ha in 2008 to 668 kg/ha in 2009) [no baseline available] | | | 2008-2009 | |
| | Production costs | 38.3% decrease in production costs per unit [no baseline available] | | | | |
| | Sales volumes/values | 28% increase in sales value per producer January-June (\$412 to \$526) | 313% increase in sales value per firm January-June (\$124 to \$511) | 538% increase in sales value per firm (\$238,200 to \$1,520,837) (est.) | | 2007-2009 |
| | Firm profits | Not reported | | | | |
| | Employment | Not reported | | | | |
| Exports | Not reported | | | | | |
| Zambia PROFIT Maize, Beans & Groundnuts (inputs) | VC Actors/ Service Providers | Producers (n = 143,810) | In-community service providers (n = 1,500) | | | |
| | Productivity | 75% increase in maize production (compared to 65% increase for non-participants) 118% increase in bean production (compared to 29% decrease for non-participants) 61% increase in groundnut production (compared to 62% increase for non-participants) | | | 2006-2009 | |
| | Production costs | Not reported | | | | |
| | Sales volumes/values | 273% increase in average earnings from maize, beans and groundnut sales (compared to 47% for non-participants) | | Not available | | |
| | Firm profits | Not reported | | | | |
| | Employment | Not reported | | | | |
| Exports | Not reported | | | | | |

V. SUSTAINABILITY

Ultimately one of the most important questions about value chain projects may be whether their outcomes and impacts are likely to endure and, indeed, to continue to grow after the projects end. Figure 2 illustrates the progression of outcomes—such as profits and incomes—under two distinct intervention strategies.⁹ Outcomes under the “facilitation approach” are expected to build relatively slowly, as project personnel seek to identify firms that are willing and able to become catalysts for change within the VC. Outcomes are not expected to reach their highest levels until several years after the project has ended, but they should continue to be strong due to project-facilitated shifts in the fundamental dynamics and market relationships within the value chain.

On the other hand, the more conventional “direct delivery approach” is characterized by direct intervention into the VC (rather than facilitation). Outcomes from this approach may appear fairly quickly, as the project becomes involved in the direct provision of goods and services to firms in the chain. However, when the project ends and direct support is removed, the results may fade just as quickly as they appeared unless there are underlying shifts in market incentives and relationships that serve to perpetuate the change. Anyone with experience in development is familiar with economic assistance projects that were considered very worthwhile, but for which outcomes had completely disappeared five or eight years after the intervention ended.

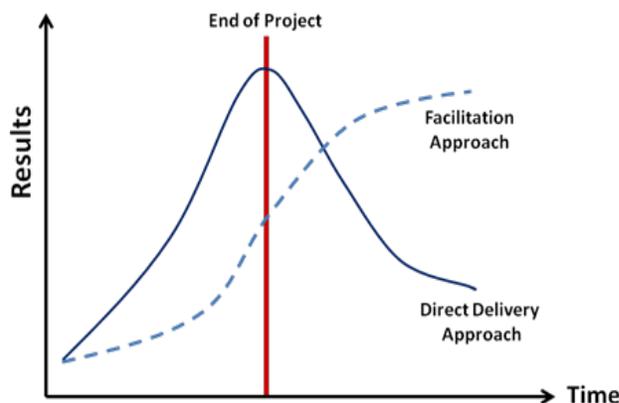
In the absence of data that track project outcomes over time, only tentative evidence can be offered on whether the seven projects reviewed here have achieved, or will achieve, sustainability. Since the oldest project ended in 2007, slightly less than four years before this paper was written, it is hard to say definitively that project outcomes are sustainable. Nonetheless, we still advance the essential hypothesis, justifying the time and expense of these programs, by asserting that the results of VC projects will be sustainable to the extent that firms in the chain have exhibited three characteristics by the time a project ends. These three characteristics serve as predictors of sustainability:

1. Firms exhibit changes in their commercial behavior, becoming more responsive to market forces and end market demands.
2. Firms in new or modified vertical or horizontal relationships have experienced win-win outcomes that lead to greater trust and continued incentives to cooperate.
3. Firms exhibit a pattern of learning and upgrading that seems to extend, and even go beyond, project-promoted innovations.

A. INCREASING MARKET RESPONSIVENESS

All seven of these projects introduced new commercial behaviors in at least one VC. Farmers and artisans were introduced to new products and improved production techniques, buyers were introduced to new sources of products, and firms at all levels were introduced to the benefits of collaborating to deliver products better suited to

Figure 2: Outcomes of Two Intervention Approaches



⁹This figure was created to illustrate expected outcomes under “Making Markets Work for the Poor”, an approach that is similar to the VC approach. See *A Synthesis of the Making Markets Work for the Poor (M4P) Approach* (DFID/SDC 2008)

end market requirements. In all cases, the projects relied on market forces to create and maintain incentives for behavior change. The projects provide numerous examples of entrepreneurs changing their behavior and becoming more responsive to market demand:

- In Kenya, farmer groups gained access to better market information through communication with traders and through mobile phones, leading members to improve their maize quality.
- In Pakistan, embroiderers became newly aware of more profitable markets and modified their product designs to respond to consumer requirements in these new markets.
- In Zambia, agricultural input suppliers learned to view smallholder farmers as a viable market, created a new type of sales agent and began gathering information on smallholder input demand.
- In India, vegetable farmers were introduced to upgraded production and post-harvest techniques, which they adopted at different rates, depending on the market channels available in their region.

In reviewing these projects, it was clear that external shocks were capable of affecting markets—and project interventions—in ways that overwhelmed any project results. During the second half of the GMED project, a general economic decline in India led corporate buyers to retreat, vegetable prices to fall and income from vegetable production to drop sharply for all groups of farmers. Such shifts due to factors outside a project's control are not uncommon. After four years of developing the maize VC in Kenya, KMDP encouraged farmers to focus on other crops in the project's fifth year when profitability was wiped out by the twin shocks of sharply increased fertilizer prices and widespread drought. Many of the programs shifted to different VCs or different regions of a country in response to unforeseen market shocks. For example, PROFIT shifted locations for its work in the cotton VC after markets in the original region were overwhelmed by the abrupt entry of foreign investors. Such project adaptability and responsiveness to changing markets may improve project effectiveness, but it complicates impact evaluation and the consistent tracking of outcomes over time.

B. EXPERIENCING WIN-WIN OUTCOMES

The second predictor of sustainability is based on the precedent that is set when firms experience win-win outcomes within the context of new or improved vertical, horizontal and supporting market linkages. Win-win outcomes are based on the assumption that collaboration between vertically and horizontally linked firms promotes VC competitiveness and has the potential to expand returns to firms at all levels of the VC. If firms can be convinced to assume the initial risk of forming new, or strengthening existing, business relationships AND if firms on both sides subsequently experience positive outcomes, this lays a foundation for trust and future cooperation. The win-win outcome provides the impetus for continuing the relationship beyond the life of the project.

One of the most common opportunities for win-win outcomes occurs when information about end market requirements is shared. It is in the best interests of all firms to capture timely, accurate information about end market demand and to transmit this information to producers. If producer response to this information is constrained by lack of knowledge or supplies, then buyers have an incentive to address these constraints through embedded support services. All firms can potentially benefit from the resulting increases in value added.

The cases reviewed here provided many examples of win-win outcomes based on sharing end market information and providing embedded services to support upgrading:

- In Pakistan, embroiderers gained access to more profitable markets and learned how to improve their product lines to respond to the requirements in these more lucrative end markets. This access and information was

provided by the sales agents who, by improving the market responsiveness of embroiderers, were able simultaneously to expand their own enterprises and substantially increase their business earnings.

- In Cambodia, veterinarians trained pig farmers in animal husbandry techniques that allowed them to produce better-quality pigs and receive higher market prices. Both pig farmers and veterinarians benefited from farmers' improved access to routine vaccines and medicines.
- In the Philippines, banana producer groups were prepared for new vertical linkages through project-provided training in GAP. Producer groups, buyers and processors worked together to develop product quality standards, which led to higher returns for all firms in the VC.
- In Kenya, greater access to fertilizer and improved seeds and greater knowledge about their use and value, along with better channels to intermediate and end markets for maize growers, all led to enhanced business relationships and, ultimately, to increased productivity and profits and increased supply to end markets. Business service and input providers also improved their businesses and profit margins.

C. EXTENDING LEARNING AND UPGRADING

As is usually the case for VC projects, all seven projects in this study emphasized learning and upgrading. Becoming aware of new products, processes and markets is a first step on the path to upgrading. After awareness, the next step is to gain the information, skills and resources needed to adopt the new practices. Finally, entrepreneurs must be reasonably confident that their businesses will be more profitable if they make the effort to upgrade. All seven projects emphasized product quality improvements as a means to gain access to more profitable markets. The third and final proposed predictor of sustainability is evidence that learning and upgrading has been extended beyond what is promoted by the project.

Many of the projects showed evidence of developments going beyond project boundaries both in actors reached and in innovations explored. There is a distinct pattern of imitation and replication which openly appeared in most cases. In Honduras for example, non-supported agricultural institutions adopted RED's drip irrigation programs. In Zambia, competition led input suppliers to develop their own agent networks, which they did without any support from PROFIT. In Kenya, non-participant farmers in KMDP villages followed participant farmers' lead and showed better profit margins than those living in non-project villages. In some cases, there is evidence of unexpected innovations as VC actors identified and responded to market signals on their own. In Pakistan, BTV saw two unplanned developments: function upgrading in which embroiderers became sales agents with much higher profit margins, and sales agents, on their own initiative, bought a trading house to conduct their transactions with wholesalers and retailers. In Zambia, two input sales agents began a new system of sub-agent networks to better organize their outreach to farmers.

Not all of the seven projects exhibit the three predictors of sustainability to the same degree. Indeed, not all of the VCs supported by these programs have thrived. However, the evidence suggests that, even if not enough time has elapsed to prove these interventions sustainable, there is substantial reason to propose that, barring market collapse or major climatic or political disasters, the VCs will continue to grow, adapting as they do so to changing market demands.

VI. SUMMARY AND CONCLUSION

The seven VC projects included in this study reported numerous successes measured both by economic outcomes as well as by more qualitative criteria. In this paper we have looked closely at only one VC for each project, while ignoring many positive outcomes in non-highlighted VCs. The full scope of these projects is indicated in tables 1 and 2. For example, outcomes under PROFIT included significant increases in production and income for dairy and wheat farmers. GMED's solid waste management component led to regularizing the employment of thousands of workers employed by the solid waste management firms referred to in the project report as well as by other firms that have imitated the initial group. Similarly, in addition to fresh fruits and vegetables, RED reported increased production and profitability in ten agricultural VCs, along with the establishment of a model farm.

Returning to the original three hypotheses about the results of VC projects—that they have extensive outreach, that they lead to positive economic and social outcomes, and that they are sustainable—our review suggests that two of these are borne out by the combined evidence from these projects, and one (sustainability) has yet to be established. For this third hypothesis, we instead put forward three potential indicators. Based on these indicators, some of the projects appear to be consistent with the sustainability hypothesis. Furthermore, this review suggests that the likelihood of future growth and development opportunities for firms at all levels of the VC is greatly enhanced by the project's systems approach and largely indirect facilitation.

It would be an oversight to end without a caveat, however. The projects that appear to have had the broadest outreach, the most varied and extensive outcomes and the greatest chance of sustainability also happen to be the three most expensive projects—RED in Honduras, PROFIT in Zambia and KMDP in Kenya. Along the way, these projects experienced downturns and were forced to adapt and change to meet new conditions. None of them met all the specific goals that they had set for themselves. Strong management teams and supportive project donors were required to bring these projects successfully to their end points. But, if the goal is to set in motion a self-perpetuating, market-based process of growth and development with a view to reducing poverty, the review of these projects suggests that the value chain approach is an appropriate strategy.

REFERENCES

GENERAL

- Campbell, Ruth (2008). *Key Elements of the Value Chain Approach*. AMAP Briefing Paper. USAID. 4 pp.
- Campbell, Ruth (2008). *The Value Chain Framework*. AMAP Briefing Paper. USAID. 4 pp.
- Creevey, Lucy, Jeanne Downing, Elizabeth Dunn, Zan Northrip, Don Snodgrass and Amy Cogan Wares (2010). *Assessing the Effectiveness of Economic Growth Programs*. USAID. 19 pp.
- DFID and SDC (2008). *A Synthesis of the Making Markets Work for the Poor (M4P) Approach*. 49 pp.
- Pietrobelli, Carlo and Roberta Rabellotti, eds (2006). *Upgrading to Compete; Global Value Chains, Clusters and SMEs in Latin America*. Inter-American Development Bank. 330 pp.
- Porter, Michael (1985). *Competitive Advantage: Granting and Sustaining Superior Performance*. The Free Press. 557 pp.

PROJECT-SPECIFIC

B-ACE (Philippines)

- SDCAsia (2009). *Final Report – Banana Agrichain Competitiveness Enhancement*. USAID. 56 pp.
- SDCAsia (2008). *July-December 2008 Semi-Annual Report – Banana Agrichain Competitiveness Enhancement*. USAID. 83 pp.

BTV (Pakistan)

- Management Systems International (MSI) (2008). *Report on Evaluation of the Access to Contemporary Markets for Homebound Women Embroiderers Project*. USAID. 30 pp.
- MEDA (2008). *Behind the Veil: Access to Markets for Homebound Women Embroiderers in Pakistan – Final Report*. 22 pp.

GMED (India)

- ACDI/VOCA (2008). *Growth-Oriented Microenterprise Development (GMED) Final Report, October 1, 2004 – November 15, 2008*. USAID. 57 pp.
- Dunn, Elizabeth, Hannah Schiff and Lucy Creevey (2011). *Linking Small-Scale Vegetable Farmers to Supermarkets: Effectiveness Assessment of the GMED India Program*. AMAP MicroReport #166. USAID. 39 pp.

- Woller, Gary (2008). *Impact Assessment of the Growth Oriented Microenterprise Development Program; Baseline Research Report*. AMAP MicroReport #104. USAID. 131 pp.

KMDP (Kenya)

- ACDI/VOCA (2010). *Kenya Maize Development Programme Final Report*. ACDI/VOCA-Kenya. 68 pp.
- ILRI and ReSAKSS (2010). *Kenya Maize Development Program: Annual Household Survey Report*. 55 pp.
- Oehmke, James F., T.S. Jayne, Sarma B. Aralas and Mary Mathenge (2010). *Impacts of USAID/Kenya Supported Agricultural Productivity Interventions on Household Income and Poverty Reduction*. Tegemeo Institute (Kenya). 20 pp.

MSME (Cambodia)

- Indochina Research Limited (2008). *Cambodia MSME Project: Final Monitoring and Evaluation Report*. USAID. 116 pp.

PROFIT (Zambia)

Brown, Meg, Ron Stryker and Charles Mvula (2008). *Assessment of USAID/Zambia's Economic Growth Portfolio – Final Report*. 55 pp.

CLUSA (2009). *PROFIT: 2009 Annual Report*. USAID. 86 pp.

RED (Honduras)

Fintrac (2010). *Final Report USAID-RED: Rural Economic Diversification Project*. USAID. 39 pp.

ANNEX

PROJECT INTERVENTIONS MAPPED TO VALUE CHAIN FRAMEWORK

| | Cambodia MSME Pigs | Honduras RED Horticulture | India GMED Fresh Vegetables | Kenya KMDP Maize | Pakistan BTV Embroidered Fabrics | Philippines B-ACE Cardava Bananas | Zambia PROFIT Maize, Beans & Groundnuts |
|----------------------------|--|--|--|---|---|--|---|
| End markets | | <ul style="list-style-type: none"> Support exporters in SPS training and export certification | <ul style="list-style-type: none"> Identify end market segments with growing demand and improve flow of information about requirements of those segments to producers | <ul style="list-style-type: none"> Conduct advocacy through EAGC/CGA for harmonization of quality standards Support participation in WFP's Purchase 4 Progress | | <ul style="list-style-type: none"> Conduct "Cardava Snack Smart" promotion campaign (with government) to reach local market through street vendors, schools, etc. | |
| Structural Elements BEE | <ul style="list-style-type: none"> Provide advice & research for trader advocacy to eliminate extralegal slaughterhouse fees & curb illegal pig imports | | <ul style="list-style-type: none"> Seize an opportunity created by a change in the enabling environment to introduce a new business model for fresh produce procurement | <ul style="list-style-type: none"> Establish the EAGC, with reps. from all parts of the VC, to constructively engage with government Develop industry-specific arbitration services Conduct advocacy with Ministry of Agriculture through Cereal Growers' Association Promote agricultural research (seeds, fertilizer) | <ul style="list-style-type: none"> (Ties with government promotion boards for exhibitions) | <ul style="list-style-type: none"> Use cardava festival as advocacy tool Broker conciliatory talks between coop and government Use local government units & officials as "co-catalysts" | |

| | Cambodia MSME Pigs | Honduras RED Horticulture | India GMED Fresh Vegetables | Kenya KMDP Maize | Pakistan BTV Embroidered Fabrics | Philippines B-ACE Cardava Bananas | Zambia PROFIT Maize, Beans & Groundnuts |
|----------------------------|---|---|--|---|---|---|--|
| Vertical linkages | <ul style="list-style-type: none"> Facilitate embedded technical assistance by vets & input suppliers for improvements in feed, breeds and animal health | <ul style="list-style-type: none"> Establish private sector alliances for embedded technical assistance and technological upgrading from lead firms to producers | <ul style="list-style-type: none"> Create schemes to link producers to buyers through farmer-buyer and farmer-intermediary-buyer models | <ul style="list-style-type: none"> Connect input suppliers and farmers through annual field days & demo plots in rural areas Connect farmer groups and millers & buyers | <ul style="list-style-type: none"> Link sales agents with isolated rural women for input supply & sales Support sales agents in establishing buying houses to link to wholesalers & retailers | <ul style="list-style-type: none"> Facilitate linkages to processors & exporters Create alliances with traders to reduce transport costs & mitigate market risks Promote embedded services by lead firms & traders | <ul style="list-style-type: none"> Encourage agri-input providers to target smallholders Facilitate win-win commercial relationships at community level |
| Horizontal linkages | | | <ul style="list-style-type: none"> Lead farmer training of other farmers | <ul style="list-style-type: none"> Develop farmer groups and formal associations, leading to bulk input purchasing through farmer groups | <ul style="list-style-type: none"> Create producer groups to share sewing machines & fulfill large orders Create sales agent association | <ul style="list-style-type: none"> Promote collective action Support Napungas Cooperative (coop of Cardava Doctors) & others | <ul style="list-style-type: none"> Promote dealer networking |
| Supporting markets | <p>Sector-specific:</p> <ul style="list-style-type: none"> Facilitate technical assistance by vets | <p>Sector-specific:</p> <ul style="list-style-type: none"> Develop alliances with private firms & agri-schools as BDS providers <p>Financial:</p> <ul style="list-style-type: none"> Facilitate bank loans for lead clients | | <p>Cross-cutting:</p> <ul style="list-style-type: none"> Engage mobile phone service providers for market info dissemination <p>Financial:</p> <ul style="list-style-type: none"> Develop precursor to warehouse receipts program | <p>Sector-specific:</p> <ul style="list-style-type: none"> Work with designers to provide new designs via sales agents Transform project rural facilitation offices into commercially viable BDS centers | <p>Sector-specific:</p> <ul style="list-style-type: none"> Disseminate GAP messages by Cardava Doctors through ICT (radio program “GAP on the air” & interactive programs), in collaboration with government | <p>Cross-cutting:</p> <ul style="list-style-type: none"> Work with input supply firms to select/train agents Provide or support agent training to enable them to provide advice along with inputs & spraying services |

| | Cambodia MSME Pigs | Honduras RED Horticulture | India GMED Fresh Vegetables | Kenya KMDP Maize | Pakistan BTV Embroidered Fabrics | Philippines B-ACE Cardava Bananas | Zambia PROFIT Maize, Beans & Groundnuts |
|-------------------------|---------------------------------|---|---|---|---|--|---|
| Dynamic Elements | Value chain governance | | <ul style="list-style-type: none"> • Develop non-binding farmer-buyer arrangements to develop relationship for trust and loyalty (based on transparency and reliability) rather than contracts | | <ul style="list-style-type: none"> • Train embroiderer groups in bargaining & negotiation to increase power & prevent sales agent monopolies • Develop 2-tiered sales agent system, with community sales agents preventing exploitation by urban sales agents | <ul style="list-style-type: none"> • Build farmer capacity & confidence before initiating vertical linkages, to equalize power imbalance, create environment of trust and reduce perceived risks | <ul style="list-style-type: none"> • Support establishment of directed governance structure by input firms |
| | Inter-firm relationships | <ul style="list-style-type: none"> • Facilitate embedded technical assistance & knowledge transfer by vets & input suppliers | <ul style="list-style-type: none"> • Establish private sector alliances | <ul style="list-style-type: none"> • Facilitate embedded service provision by buyer (wholesaler) | <ul style="list-style-type: none"> • Build farmer capacity and confidence to equalize power imbalance and improve linkages through farmer groups | <ul style="list-style-type: none"> • Train community sales agents who sell to, but also compete with, local (urban) sales agents • Train sales agents to enhance cooperation with & knowledge transfer to embroiderers | <ul style="list-style-type: none"> • Organize stakeholder workshops to promote dialogue & accountability • Organize roundtables for joint est. of GAP standards • Provide matching grants for cardava festivals and competitions to encourage learning & sharing |

| | Cambodia MSME Pigs | Honduras RED Horticulture | India GMED Fresh Vegetables | Kenya KMDP Maize | Pakistan BTV Embroidered Fabrics | Philippines B-ACE Cardava Bananas | Zambia PROFIT Maize, Beans & Groundnuts |
|------------------|--|---|---|---|---|--|---|
| Upgrading | <p>Product:</p> <ul style="list-style-type: none"> Facilitate embedded technical assistance on pig production techniques and pigpen upgrading Facilitate exposure trips to Thailand <p>Function:</p> <ul style="list-style-type: none"> Support pig producers in becoming traders | <p>Product:</p> <ul style="list-style-type: none"> Promote new technologies for upgrading, including drip irrigation Promote crop diversification <p>Process:</p> <ul style="list-style-type: none"> Train processors in marketing, budgeting, etc. Provide direct farmer training Organize farmer field days Give technical assistance in pack-house design <p>Market channel:</p> <ul style="list-style-type: none"> Promote market diversification | <p>Process:</p> <ul style="list-style-type: none"> Support demo plots & provide training on seedling production, GAP, grading and sorting | <p>Product:</p> <ul style="list-style-type: none"> Support development of new seeds (research) Support new patterns of planting and cultivation including selected seeds, fertilizer and water use (demo plots and training courses) Support development of fortified maize meal for PLHIV, lactating mothers & kids <p>Process:</p> <ul style="list-style-type: none"> Promote better drying techniques to reduce aflatoxin levels Provide training to small-scale milling operations Provide farm management training | <p>Product:</p> <ul style="list-style-type: none"> Support upgrading to new embroidery designs <p>Process:</p> <ul style="list-style-type: none"> Provide technical training to sales agents in design, cutting & stitching and marketing <p>Function:</p> <ul style="list-style-type: none"> Support embroiderers in becoming sales agents | <p>Product:</p> <ul style="list-style-type: none"> Support organic banana farming & processing <p>Process:</p> <ul style="list-style-type: none"> Train Cardava Doctors in GAP Encourage small steps in upgrading Organize GAP competitions & facilitate exposure visits & benchmarking to drive upgrading <p>Function:</p> <ul style="list-style-type: none"> Support farmers in establishing first fry facility & train community trainers in good manufacturing practices & food safety | <p>Product:</p> <ul style="list-style-type: none"> Promote use of improved inputs |