

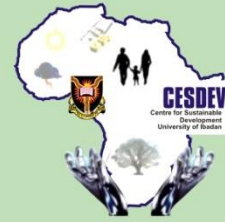
CESDEV MONOGRAPH SERIES

The Impact of Consortium Approach in Food Value Chains Development on Incomes of Smallholder Farmers in Uganda and Rwanda

**Cecilia Abosedo Dada
&
Saka Oladunni Jimoh**

November, 2017

CESDEV Issue Paper No. 2018/6



**CENTRE FOR SUSTAINABLE
DEVELOPMENT**

www.cesdev.ui.edu.ng



**UNIVERSITY OF IBADAN
Ibadan, Nigeria**

www.ui.edu.ng

**The Impact of Consortium Approach in Food
Value Chains Development on Incomes of
Smallholder Farmers in Uganda and Rwanda**

by

Cecilia Abosedo Dada
and
Saka Oladunni Jimoh

Centre for Sustainable Development
University of Ibadan, Nigeria

CESDEV Issue Paper No. 2018/6

Centre for Sustainable Development
University of Ibadan, Nigeria

November 2017

The Impact of Consortium Approach in Food Value Chains Development on Incomes of Smallholder Farmers in Uganda and Rwanda

Published by:
Centre for Sustainable Development
University of Ibadan, Nigeria

ISBN: 978-978-56659-7-3

All rights reserved.

This paper is the report of the research conducted as part of student internship programme sponsored within the IFAD-Universities Win-Win programme Support for the University of Ibadan Centre for Sustainable Development and coordinated by the Global MDP Association Office, Columbia University, New York, USA

Cecilia Abosedo Dada is a student of Development Practice, Centre for Sustainable Development (CESDEV), University of Ibadan, Nigeria. Saka Oladunni Jimoh is the Coordinator, Environmental Protection and Natural resources Programme at the Centre for Sustainable Development (CESDEV), University of Ibadan, Nigeria

© 2018 Centre for Sustainable Development University of Ibadan

Printed by:
Deleprints 08060328997

Abstract

Agriculture as one of the most important sectors in East African Community (EAC) accounts for about 80% of the workforce, involving the smallholder farmers in rural areas who depend largely on it for their livelihoods. In spite of this, the EAC is characterized by low agricultural productivity and low incomes, thus rated amongst the poorest in Africa. The consortium approach under the Regional East African Community Trade in Staples (REACTS) project implemented by Kilimo Trust is a response to address the gaps of low agricultural productivity and incomes of smallholder farmers and other actors in the value chain.

This study, therefore, assessed and analysed the effectiveness of the consortium approach *vis-a-vis* conventional approach in food value chain development on productivity and incomes of smallholder farmers in Uganda and Rwanda. A multi-stage/stratified random sampling method was used to select the value chain actors. Semi structured questionnaires, key informant guides and focus group discussion guides were used to obtain information from the respondents. A total of 374 respondents were sampled from all the districts. Data collected were coded and analysed using Statistical Package for Social Sciences, descriptive statistics, inferential statistics and cost benefit analysis.

The result of the study provides evidence-based information of the effect of the consortium approach on productivity and profitability of smallholder farmers with a view to promoting scalability and sustainability of the consortium approach in the EAC. The findings also reveal the critical success factors for sustainability of consortium approach, the strengths, weaknesses; opportunities and threats (SWOT) for further development in the value chain.

Key Words: Agriculture, Consortium Approach, Smallholder farmers, Productivity, Income.

Introduction

Agriculture is one of East Africa's most important sectors, with about 80 percent of the population living in rural areas and depending on agriculture for their livelihoods (East African Community (EAC), 2015). Despite this, the region is categorized amongst the poorest in the world with more than 60% of the population living below the poverty line (EAC, 2015). Majority of the EAC's poor (Uganda 7,329,365 and Rwanda 4,252,130) live in rural areas (State of East Africa Report, 2016). According to the report by International Fund for Agricultural Development (IFAD 2013), approximately 2.5 billion people living in developing countries are involved in full or part-time smallholder agriculture, managing an estimated 500 million small farms and majority of the farmers earn daily income below USD2. The report indicates that these smallholder farmers, who live in rural areas, manage 80 percent of the world's estimated 500 million small farms and provide over 80 percent of the food consumed in a large part of the developing world, contributing significantly to poverty reduction and food security. There is an extensive literature on the definition and concept of poverty based on income or consumption, wellbeing, basic needs and deprivation.

Poverty here is defined, according to the human rights approach, in terms of a range of interrelated and mutually reinforcing deprivations, and drawing attention to insecurity, stigma, discrimination, and social exclusion. The manifestation of poverty includes: low income and productive resources sufficient to ensure sustainable livelihood; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; unsafe environment;

social discrimination and exclusion, characterized by lack of participation in decision making and in civil, social and cultural rights (EAC, 2015).

The East African Region is characterized by low agricultural productivity and, thus, food insecurity. The reasons for this are high populations, small land sizes, environmental degradation; poor marketing structures; inadequate access to information, poor physical and institutional infrastructure and inappropriate government policies, which hinder sustainable development of rural areas. The region also has diversity of farming systems, from the humid highlands of Uganda, the coastal areas of Tanzania and Kenya to the dry lands of Sudan and Ethiopia.

According to Shepherd (2007), there is considerable scope for adding value to agricultural production. He argues that, “NGOs and others sometimes approach agro-processing from a supply-led rather than market-led perspective. That is, they decide to promote processing because of an abundance of raw materials rather than because of a clearly identified market for the processed products.

According to Louw *et al.* (2007), the smallholder farmers can only have market power if they form co-operatives, which should be established with the help of the government. His work shows that groups have the potential to secure better terms of trade such as better sourcing production inputs prices, lower transaction costs, and greater access to training and other services.

Baloyi (2010) states that considerable changes would be required in small-holder farming operations if the economic benefits of increased incomes would be fully realized. These changes entail producing good-quality, high-value crops on

a large scale and accessing high-value markets. This will only happen if smallholder farmers have access to comprehensive and holistic agricultural support services.

There are several conventional approaches in food value chain development. One of these is the clustering and network approach which focuses on a cluster manager or network broker facilitating business and cooperation relationships between member firms. Having established a basis for cooperation, demonstrated benefits, and built a momentum, the cluster manager or network broker withdraws, leaving the system fully functioning and able to move forward without further support. Clustering and network approaches offer a framework for identification of existing clusters, and some basic analysis of cluster dynamics (Marieke *et al.*, 2006). The process of analysis for intervention design tends to be generated through the intervention process itself. It is an approach similar to the cooperative-based in which the basis of their cooperation is to achieve a purpose which can be inputs supply (seeds, pesticides, and fertilizers), irrigation and extension service.

The Value Chain Development (VCD) approach applies different types of innovations in the agriculture sector, depending on the root cause of the problem in the specific location of study so as to competitively and sustainably increase productivity. The innovations had often led to agricultural growth, nutrition, food security and overall economic welfare of farmers, producers and marketers throughout the value chain. Since it is recognized that low income and food security are critical to human development, these issues have been addressed using different approaches, and have been given adequate attention in prior agricultural development programmes.

Catalyst approach is an intervention that focuses on training agricultural input retailers and developing “embedded services” within the input supply chain. The approach undertakes activities notably in relation to soil testing and packaging, and also stimulates the training of agricultural input retailers to ensure knowledge and information sharing within the distribution system. The underlying cause of poor productivity was low levels of knowledge and information in the market, which was attributed to weak private sector capacities (Gibson, 2005).

However, the commitment to facilitate smallholder farmers to aim at the market rather than production was not there. The Catalyst approach played different role of intervention on the project, one of which was being consistent with a future market vision in which other approaches have no role. This defined the boundaries for Catalyst intervention all aiming at increasing farmers’ productivity without an identified market.

The consortium approach is a relationship or an association of at least two people, organizations, associations or governments with the target of partaking in a typical movement or pooling their resources for accomplishing a shared objective. A good consortium improves efficiency and reduces transaction costs, through joint planning, monitoring, and mutual accountability (Friedman *et al.*, 2014). The approach is more strategic because individuals pool their resources together, and this increases the potential return on investment.

On the other hand, value chain is defined as the full range of activities required to bring a product or service from conception, through the different phases of production, to delivery and to final customers, as well as disposal after use. In the context of food production, these activities include farm production, trade and support to get food commodities to the end-consumer (Kaplinsky and Morris, 2002). Its existence in the aspects of food security enables agricultural goods, services or information to be passed on between different actors. The consortium approach to value chain development is an approach that uses high quality knowledge and information on markets and demand characteristics to support market-driven formation of win-win business consortia, each anchored on an agribusiness SME as lead firm, and composed of sufficient actors along the entire value chain, including the end market players linked to the final consumers. The adoption of this approach in value chain development enables actors to sell their surplus food commodities and gives them access to efficient and reliable production inputs and common interventions that help to identify common problems among actors in the chain, and then proffer a sustainable solution. The overall outcome of consortia is to attain tangible benefits in terms of economic performance and poverty reduction in the lives of the actors. The project recognizes that increase in agricultural productivity with a defined market will result in improved incomes for the farmers.

This study assessed and analysed the effectiveness of the consortium approach vis-a-vis conventional-based approach in access to production inputs, finance, infrastructure, markets, foods value chain development on incomes of smallholder farmers. The findings reveal both the strengths,

weaknesses; opportunities and threats (SWOT) for further development in the value chain. It also proffers recommendations on further strengthening and up-scaling of the project in the value chain.

Consortium Approach to Value Chain Development

Typically, consortium approach is a model that catalyses private sector investment in agribusiness value chain built on win-win partnership involving actors along all the nodes, and intervening on issues on the entire value chain, to capture value addition in delivering to a specific end market.

The consortium approach is a collaborative approach that ensures that smallholder farmers are integrated into agribusiness in a manner that enhances their capacity building in good agricultural practices, improves their access to production inputs, finance and creation of market for their commodity. However, few value chain approaches adopt collaborative approach in delivering value to the actors, enhancing economic growth, improving efficiency and maintaining better competitiveness and gaining increased market share. In the EAC, not very many value chain approaches yield to collaborative model, and documented studies on impact of a collaborative value chain approach on income of smallholder farmers are not widespread. This study seeks to fill this gap through assessment and analysis of the effectiveness of the consortium approach vis-a-vis conventional-based approach on incomes of smallholder farmers.

Description of Project Using Kilimo Trust Consortium Approach

Kilimo Trust (KT) is an independent organization working on agriculture for development across the East African Community (EAC) Region in Burundi, Kenya, Rwanda, Tanzania, and Uganda – and more recently in the new Republic of South Sudan. KT support programmes focus on value-chains and how small and medium scale farmers can access profitable markets. KT promotes regional solutions to local problems with the aim of making agricultural markets work better for the reduction of poverty and elimination of hunger. The organization brings a commercial mind-set and market understanding to agricultural development within the EAC Region. In response to bridging the gap in low productivity and income of smallholder farmers, Kilimo Trust, a not-for-profit organization, adopts consortium approach in the implementation of projects. Kilimo Trust Consortium Approach to Value Chain Development (KTCAVD) is a model that catalyses private sector investment in agribusiness value chain, built on win-win partnership involving actors along all the nodes, and intervening on issues on the entire value chain, to capture value addition in delivering to a specific end market. The approach is built on a win-win partnership involving all the actors – smallholder farmers (producer), input suppliers, financial institution (bank), off takers (buyer/processor) and service providers - research and training institutions in value chain development. The consortium approach ensures that smallholder farmers are integrated into agribusiness in a manner that enhances their capacity building in good agricultural practices and improves their access to quality production inputs and finance as well as market for their

commodity. The consortium approach was used to deliver the objectives of the REACTS project: Regional East African Community Trades in Staple.

Regional East African Community Trades in Staple (REACTS) Project

REACTS, formed in 2014 with an exit period of 2017, is an IFAD-sponsored, Kilimo Trust implemented project in Uganda, Tanzania and Rwanda in the EAC, with the main objective of increasing farmers' income through regional trade in targeted rural areas. The project is supporting smallholder farmers in the EAC to focus on regional cross-border markets and trade, assisting smallholder producers of key food commodities to 'farm as business' and become competitive by effectively utilizing their comparative advantage. REACTS project seeks to use network of IFAD-funded projects in the EAC to build long-term programmes that leverage investment to effectively link small-scale farmers (men, women and youth) to regional and cross-border markets in the EAC, thereby strengthening a structured regional trade in food, driven by private sector involvement, and building business linkages among the actors. The REACTS project was executed through two output components comprising knowledge-driven targeting of EAC's regional cross-border markets with others in the region and improvement in the structuring and efficiency of business-linkages for integrating smallholders to regional cross-border markets and building-on successes of access to national markets. The objective of the REACTS project was to enhance income and accelerate wealth creation for smallholder producers of food commodities through regional trade. The project covered West Nile Region, Northern Region of Uganda, Eastern Region of Rwanda and

Arusha Region of Tanzania. At the conclusion of the project, it is expected that the beneficiaries will experience a 20% increase on income -- at least 10,000 smallholder farmers and 15,000 small-scale farmers are targeted by the IFAD projects in the EAC as part of inclusive business linkages to cross-border market (IFAD Report, 2014).

Statement of Problem

In spite of the various approaches to value chain development in the EAC, food and income insecurity is still a problem. The development of food markets in East Africa, which is a vital aspect in achieving income, and, by extension, food security, is given very little attention in agricultural development programmes, thereby limiting opportunities for enhanced incomes for the smallholder farmers, and good nutrition at prices that low-income earners in rural and urban areas can afford. One of the reasons for limited impacts in farmers' income is that most projects/programmes work in isolation, focusing on one or two nodes of the value chain, and not the entire value chain. Kilimo Trust Consortium Approach to Value Chain Development (KTCA2VCD) is a holistic method that intervenes at all nodes of the value chain in a coordinated way to solve the challenges affecting the entire value chain towards delivering to a specified market.

Food and income insecurity have been attributed to limited access to production inputs such as seeds, pesticides and fertilizers. Other constraints are poor access to production inputs, finance, a well-structured, reliable and timely market information; small volumes of products of varied quality offered by individual smallholder farmers; and poorly structured and inefficient markets (Nyende, 2011). This has

resulted in wastage of produce and low prices for the commodities of smallholder farmers.

Several approaches have been used to develop agricultural markets in East Africa. One of such approaches earlier discussed is the co-operative-based approach which has been extensively used in value chain development to access finance with the aim of providing inputs supply for the production of the smallholder farmers. The approach has also helped to reduce transaction costs for the farmers and encouraged more widespread participation in markets.

Accordingly, in Kenya, evidence suggests that dairy co-operative approach played a significant role in fostering dairy development, primarily by providing a stable market environment and delivering services to farmers. However, dairy co-operative development was heavily dependent on good co-operative management, honest and effective investment of resources and accountability to the interests of the farmer members. (Abdulsamad and Gereffi, 2016).

In Rwanda, the dairy cooperative-based approach was undermined because the general thrust of supply-side investment was not matched by market incentives. One of the major factors was the buying power and short-sighted behaviour of processor firms (Makoni *et al.*, 2014). Farmers are not paid according to quality-based pricing, and their income was further negatively affected by the seasonal variations of milk prices (Land O' Lakes Inc., 2012). The consortium approach is a new approach of food markets development that has been experimented in East African countries. However, little is known about its effectiveness in easy access to production inputs and access to finance and

markets. Therefore, this research ascertains the effect of consortium approach vis-a-vis conventional approach in augmenting the income of the smallholder farmers.

Review of Literature

Smallholder farmers generally do not have access to all factors that are needed for delivering a product that responds to market demand. They often face strong economic, social and physical disadvantages: in some areas the infrastructure is poor, while in other areas up-to-date market information is not always available. Other challenge is the difficulty in accessing technical advisory services, agricultural inputs; lack of financial services and lack of post-harvest facilities make it difficult to consistently deliver good quality produce (Ellen and Bart, 2010). Farmers owning or renting less than two hectares of land are both the majority of the world's farmers and of the world's poor (Nagayets, 2005). These smallholder farmers represent half of the malnourished population globally (Hazell *et al.*, 2007). Bettering the lives of smallholder farmers is therefore crucial to alleviating global poverty. Although other sources of income (such as labour) are critical for smallholder farmers and the poorest (Mueller and Chan, 2015), sales of agricultural output remain important. A research conducted by USAID 2015 reported that the first strategy of alleviating poverty is to improve production quantity and quality, which requires addressing information flow, knowledge of market requirements and production practices, as well as linkages to inputs and finance. Direct intervention strategies used to implement this include standardized production packages for smallholders to ensure appropriate ratios of inputs and increased access to credit. At a more systemic level, other projects facilitated the development of private-

sector grading standards to clarify and communicate end market requirements or developed contracts or market signals to decrease the perceived risk by both sides (USAID, 2015).

A second common strategy identified shifts from the direct interface between smallholder farmers and output markets, to reducing transaction costs to attract buyers to procure from smallholder farmers. These cost reductions were achieved through better cooperation, either on the supply side through producer collectives, or on the demand side through buyer coordination mechanisms (USAIDS, 2015).

The concept of consortium approach to food value chain development has not attracted many scholars in the marketing environment. For smallholder farmers to be integrated along the value chain, they must be able to comply with market requirements such as economies of scale, good quality, and consistency. The concept of consortium approach in value chain is a horizontal alliance of enterprises collaborating to secure a more rewarding position in the market first. The term horizontal alliance means that agribusiness is connected from the production stage, through the processing stage to the marketing stage, until the products are in the hands of the consumers. Producers, processors and marketers become interdependent in the chain and work together to discuss challenges and share information.

According to Baloyi 2010 and ADB, 2005, the main compensation of being involved in an effective value chain is the ability to reduce the costs of doing business, increase revenues and bargaining power, and improve access to technology, information and capital, and by doing so,

innovate production and marketing processes in order to achieve a higher value and provide a higher quality of product to consumers. The consortium approach can help smallholder farmers to access secure markets and enter into formal market contracts that can be used to access credit; to share information among partners, thus helping poor farmers to access information better than in spot markets. It can also be used to consolidate production and minimize transaction costs; to improve their bargaining power; to add value to the products; and to access high-value markets.

The consortium approach is a holistic approach to full value-chain membership; interdependent relationship is envisaged on all the actors in the chain. It seems to work better than single segments approach previously used in value chain. Many scholars have emphasized that if a value chain approach is not adopted, especially in developing countries, opportunistic behaviour, self-interest, short-term relationships, limited information sharing will predominate in the conventional approach.

Conventional Approaches to Food Value Chain Development

Global Value Chain Approach

The Global Value Chain (GVC) approach cuts through all kinds of economic realities and specifies constraints surrounding a specific product. This approach combines two important analytical tools. Firstly, it applies a business management approach by identifying constraints of individual firms (stakeholders), and secondly, it uses power analysis to expose different types of governance within the firm. A combination of an analysis of constraints and governance type provides the right basis to compose

upgrading strategies that have the ability to improve the value chain. However, the approach is limited in providing insight into the heterogeneity in outcomes for different types of producers (Laven, 2010). The first shortcoming, lack of inclusion of institutions in the analysis, is corrected by making use of literature on institutions, transactions costs, and social capital. The second shortcoming of GVC is its effects of upgrading at different scale levels and with different stakeholder groups.

According to Gilbert (2006), the term 'global value chains' appears to be originally due to Hopkins and Wallerstein who proposed to analyse a sequence of processes culminating in the production of the final product. This endeavour in part is motivated by the realization that many industrial goods are processed in multiple countries prior to final sale, and that trade in intermediate products has become a major component of all international trade. Industrial products typically combine a number of different raw materials and other inputs. Global value chain analysis looks at the value contribution of each of these to the final product without a well-structured market.

Value chain analysis suggests a number of strategies for adding value. In particular, it emphasizes the opportunities for adding value through increasing buyer service elements of the total product package delivered to buyers. Particularly in fresh produce value chains, value can be added through reliability of delivery, speed of delivery, and product innovation. In other words, adding value needs not involve physical transformation of the product. Global buyers such as supermarkets and large processors are not solely buying a physical product. They are buying a product that is bundled

with a set of value-adding services. Moreover, GVC linkages offer the prospect of private sector knowledge transfers that should provide up-to-date and relevant information for producers, processors and exporters in developing countries. This knowledge transfer is not automatic (Humphrey, 2006).

The Agriculture Value Chain Analysis Approach

The approach uses concepts and analytical tools for analysing the functioning of agricultural value chains are, therefore, important to understand the impact of chain development interventions on smallholders and the rural poor. Similar to the agricultural innovation systems perspective, value chain approaches help orient agricultural development thinking more towards a systems perspective (Rich *et al.*, 2008). Value chain has been used to analyse the dynamics of markets and to investigate the interactions and relationships between the chain actors. The agricultural value chain approach is utilized by many development interventions that intend to engage smallholders either individually or collectively into the production of market oriented high value crops (Anandajayasekera and Berhanu, 2009). It is a dynamic approach that examines how markets and industries respond to changes in the domestic and international demand and supply for a commodity, technological change in production and marketing, developments in organizational models, institutional arrangements or management techniques. The analysis looks at the value chain as a set of institutions and rules; a set of activities involved in producing, processing, and distributing commodities; and as a set of actors involved in performing the value adding activities. Value chain analysis focuses on changes over time in the structure, conduct and performance of value chains, particularly in response to

changes in market conditions, technologies and policies (Kaplinisky and Morris, 2001).

Cooperative-Based Approach to Food Value Chain Development and Smallholder Farmers

Cooperatives are economic entities depending on the relevant legal system, which may combine commercial and not-for-profit features, and play a major role in the economic and rural development of many countries around the world. In certain geographical areas and for particular commodities, agricultural cooperatives gather very large numbers of producers and manage most of the production. They take several forms, depending on their membership, object and activities. Cooperatives may vary considerably in size as well as in technical and economic capacities.

An agricultural cooperative performs different tasks. It may market the products of its members or even organize the production process itself. Moreover, cooperatives sometimes provide services such as planning, technical assistance, access to equipment, supply of inputs and quality control. As the cooperative acquires more business and financial strength, activities and services to members could expand to include, for example, group certification or obtaining third-party certification, developing specialized products and labels, and engaging in downstream activities such as pre-processing, transformation and packaging. These activities may often be undertaken through commercial subsidiaries (vertical integration) or based on contract alliances and networks (horizontal integration). Cooperatives may also gather associations of producers rather than just individual ones. Cooperatives are regulated by a special legal regime, and particular rules are applied to those engaged in

agriculture or the production of specific commodities (UNIDROIT, 2015). Cooperatives serve dualistic goals of organizing smallholders into larger, productive entities and facilitating the formation of the state. In many situations, cooperatives were utilized as instruments of control by governments, through which national interests had dominance over individuals. One of the best-known types of producer organization is the cooperative, an 'autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically-controlled enterprise' (ICA, 2010). Although modified to adjust to different legal and local circumstances, all cooperatives are built on generic principles (Williams, 2007). The purpose of a cooperative is to provide services to its members with regard to inputs, outputs and marketing. As members do pay contribution, they also own the cooperative (Van Dijk and Klep, 2005). Economic benefits are distributed according to the members' level of economic activity in the cooperative, not according to their capital equity (IFAD, 2007). Cooperatives have difficulties in raising investment capital. As members have equal ownership and voting rights, there is little motivation to invest in the cooperative. Furthermore, cooperatives establish a lot of rules and regulations which can make them inflexible (Oxfam, 2007).

Theory Based Approach

Theory-based approach was used in the study because it is in the design of Independent Office of Evaluation of IFAD (IOE) and is particularly appropriate. It is also highly relevant for impact evaluation. As shown in Figure 2.1 and 2.2 below, the approach measures outcome/output and impact indicators. The outcome/output indicators are

activities relating to the implementation of the project while impact indicators relate to changes that occur as a result of the project activities. Table 2.1 shows the five steps to form consortia.

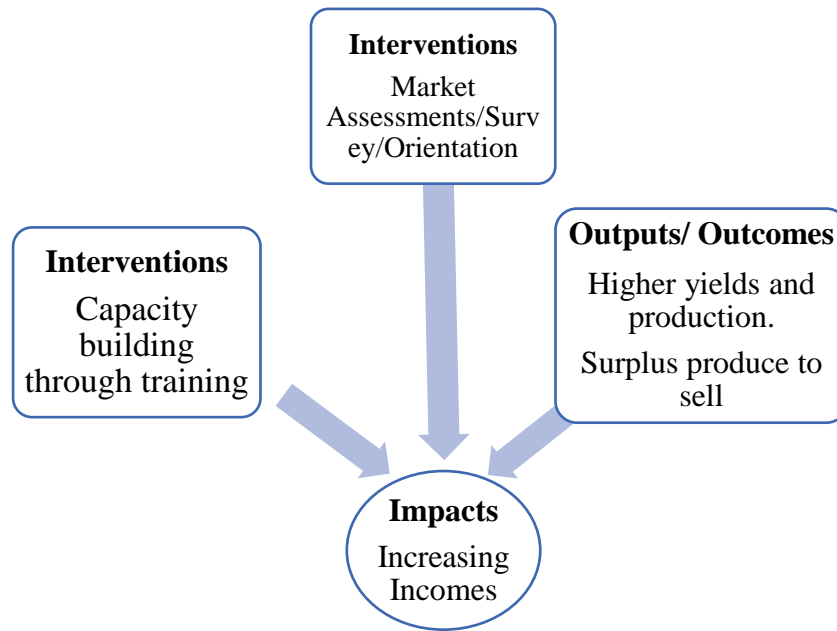


Figure 2.1: Diagram of Theoretical Framework of Consortium Approach

Source: Survey (2017)

About the Consortium Approach: Distinguishing Attributes

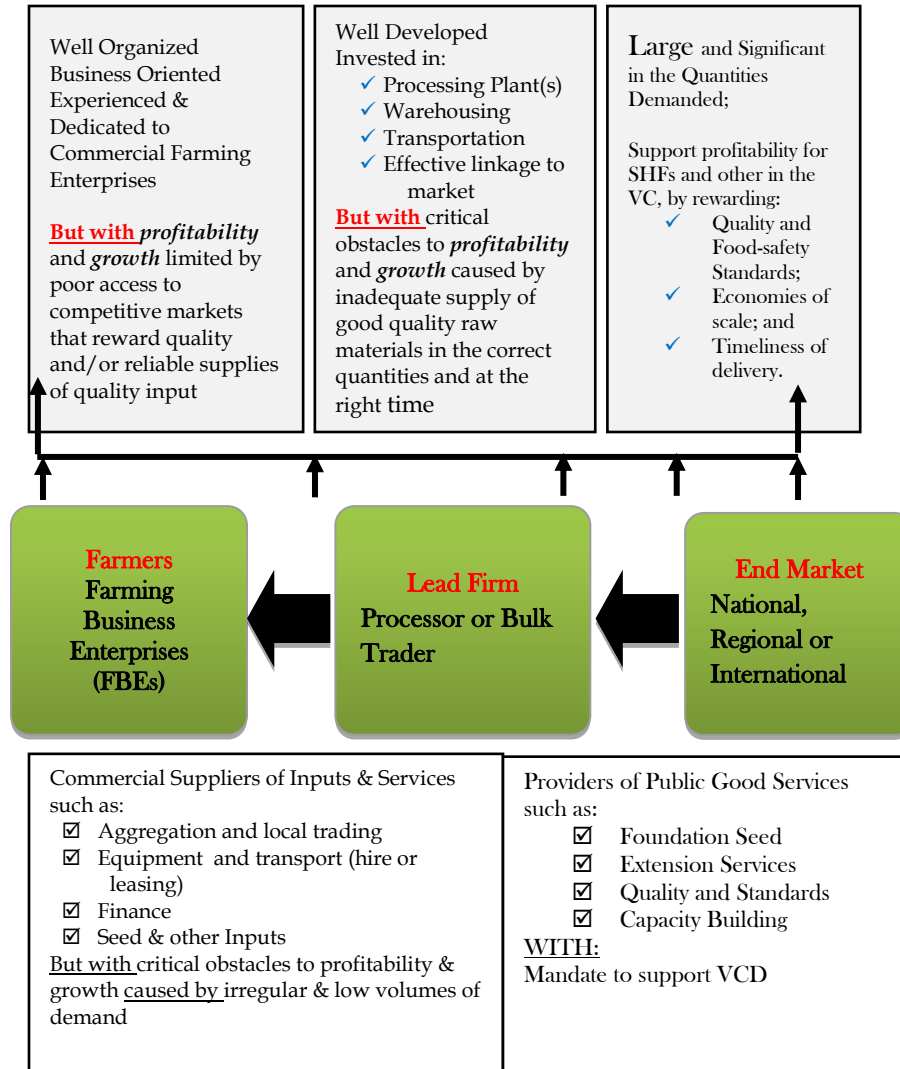


Figure 2.2 Kilimo Trust Consortium Approach to Value chain Development (KTCA2VCD)

Source: Why Regional Trade? Kilimo Trust (2017)

Research Methods

Table 2.1: Five steps to form consortia

Step 1:

- ☑ Open Invitation to agribusiness firms and FBOs to express interest to forming consortia
- ☑ Intensive due diligence and selections of promising firms and FBOs

Step 2: TA and BDS to enable firms and FBOs to negotiate and agree on partnership and shared vision of success - i.e. putting the consortia backbone in place.

Step 3:

- ☑ Each consortium backbone then identifies critical constraints to capturing and competing in the identified market, so as to deliver their VoS.

They then determine which partners from the inputs and services sub-sector they should invite to their consortium.

Step 4: With support from KT Team, the two parties then identify, profile, assess, select and invite the most suitable **suppliers** of inputs and other services, to join their consortium.

Study Area

Uganda

Uganda is a landlocked country in East Africa, stretching along the equator between the Democratic Republic of Congo and Kenya. Uganda faces a lot of challenges of access to international markets due to its landlocked feature. However, it has the title of 'The Pearl of Africa' due to the beauty of its natural features and significant natural resources.

Uganda takes its name from the Buganda Kingdom, which encompasses a large portion of the south of the country, including the capital Kampala.

The capital city, Kampala, lies on the shores of Lake Victoria, the biggest lake in Africa and second-biggest freshwater inland waterway on the planet.

The country has a tropical atmosphere, with temperatures running from 21-25°C (70-77°F) aside from the sloping territories, which are much cooler. The highest point of Mount Elgon is frequently secured with snow. The most sizzling months are December to February.

The regions of Uganda are known as Central, Western, Eastern, and Northern. These four regions are in turn divided into districts. There are 111 districts plus one city (Kampala). The Northern region is comprised of the West-Nile, Lango, Acholi, and Karamoja sub-regions. West-Nile sub-region includes the districts of Arua, Adjumani, Koboko, Maracha, Moyo, Nebbi, Yumbe, and Zombo. Lango is a sub region of Uganda covering the area that was previously known as Lango District until 1974 when it was split into the districts of Apac and Lira, Amolatar, Alebtong, Apac, Dokolo, Kole, Lira, Oyam, and Otuke. It is home mainly to the Lango ethnic group. The 2012 national population census estimated Lango's population to be one and a half million people.

The agricultural sector is an important source of income to Uganda's economy. It employs almost 75% of the labour force and 69% of the populace in this sector contributes about 26% to the GDP (UNDP, 2015). The government identifies agriculture as a vital contributory sector capable of reducing poverty and stimulating economic growth.

Developments ongoing in Uganda focus on increasing production and productivity, improving household food security, increasing farmers' income and increasing the value of exports (UNDP, 2015). In spite of the various agricultural development programmes in the country, poverty still remains a concern, especially among the rural people. In Uganda, about 60% of the people are poor and 30% are very poor, living below the poverty line (UNDP, 2015). Poverty is more intense in the rural settings than in the urban settings (34% and 14% respectively) and with high level of inequality (César *et al.*, 2013). Eighty seven percent of the population lives in rural areas, out of which around 10 million live below the national rural poverty line (Cesar *et al.*, 2013).

The vast majority of the population in rural areas depend on the Agric-food sector for their livelihood (Gagnon 2012; Banson *et al.*, 2014). These agribusiness people, particularly small farmers, are under pressure to achieve economic sustainability. The smallholder farmers face major challenges such as poor access to land; lack of on-farm and off-farm infrastructure; lack of access to finance for production inputs; lack of access to mechanization, transport logistics, extension and research support services; and limited access to high-value markets. Lack of access to markets is a major constraint facing smallholder farmers and without easy access to market, it is difficult to move from subsistence farming to commercial farming.

Rwanda

Rwanda, a landlocked nation the size of Maryland in the US, is one of the poorest in sub-Saharan Africa. The population is largely comprised of two ethnic groups: the Tutsis (about

14%), who had been the dominant political and economic force until 1961, and the majority Hutus (about 85%), who took power at independence. Shortly after independence, many Rwandese Tutsis left Rwanda and became refugees in Uganda. For decades, Rwanda suffered from periodic ethnic clashes in which hundreds of thousands died. Rwanda's economy is market-based and primarily driven by the agricultural sector. Agriculture is the backbone or mainstay of the nation's economy and the majority of her households are currently engaged in crop or livestock production activity (Claude *et al.*, 2012).

More than 85% of the labour force is engaged in subsistence agriculture. In recent years, Rwanda's economy has been growing at a fast pace, especially the service sectors. The country enjoys four seasons of which two are rainy and two are dry. Rainy season extends from October to December while dry season runs from January to February. There is another rainy season which runs from mid-February to mid-May and a dry season from mid-May to early October.

The main agricultural crops found in the EAC include banana, cassava, beans, potatoes, maize, finger millet, sorghum, rice, wheat, pulses, oilseeds, cotton, tobacco, fruits, vegetables, plantains, coffee, grains, sugarcane, cotton and tea. The livestock produced are sheep, pig, fish and goat. The main agricultural export commodities include fish, cereals, horticultural crops, coffee (Robusta and Arabica), cotton, tea, sugar, tobacco, fruits and vegetables, banana, hide and skin.

Like it is for Uganda, agriculture is the main driver of Rwanda's economic growth. It contributes 34% to the GDP

and employs 85% of the Rwandan population (Claude *et al.*, 2012). The transformation of agriculture, therefore, will have the greatest impact on the economy in terms of poverty reduction and wealth creation in the country. In Rwanda, like in much of the developing world, small-scale subsistence farmers produce most of the agricultural output. Agricultural exports represent over 70% of the total value of exports; coffee and tea are the two main export crops and the most widely cultivated cash crops. The Government of Rwanda has also made efforts to diversify the country's exports by investing heavily in horticulture geared towards exports. The country produces several products as staple foods: maize, sorghum, rice, wheat, beans, soya beans, Irish potato, sweet potato, cassava and bananas (Claude *et al.*, 2012).

Study Locations in Uganda and Rwanda

Uganda: The Northern part of Uganda is one the areas where beneficiaries of the REACTS project are found. Districts of Lira, Otuke, Oyam, Gulu and Amuru were the study areas in Uganda.

Rwanda: The Eastern part of Rwanda is one of the areas where beneficiaries of the REACTS project are found. Districts of Ngoma, Gatsibo and Bugesera were the study areas in Rwanda.

Lira District

The district is located in Lango sub-region in Northern Uganda and is bordered by the districts of Pader and Otuke in the North and North East, Alebtong in the East, Dokolo in the South and Apac in the West, as shown in Figure 3.1. There are 291,000 people in the rural areas of Lira District. The economy of the district is mainly based on agriculture, with 81% of the population engaged in subsistence farming.

Other sectors in the district's economy include agro processing industries (3.1%), commercial activities and banking (15.9%).

Otuke District

The district was carved out of Lira district in 2010. It is bordered by Agago district to the north, Napak district to the east, Abim district to the northeast, Alebtong district to the south, Lira district in the southwest, Amuru district in the southeast and Pader district in the northeast, as shown in Figure 3.1. The population of Otuke district comprises 78,420 people, according to 2012 national housing and population census. Over 90% of the population is engaged in subsistence agriculture.

Oyam District

It has a population of 353,700 from the 2012 national housing and population census. The population is predominantly rural with 95% percent living in rural areas and facing high poverty level, high level of illiteracy and low level of income. Oyam has a total area of 2, 207km² of which 2,024.4km² is for human settlement and agricultural land area. Over 97% of the population is engaged in subsistence agriculture.

Gulu District

According to the 2012 census, Gulu has a total population of 407,500 people, with a total land area of 6,850 km². Agriculture remains the major source of income to the population since over 80% of the population still relies on subsistence agriculture to earn a living.

Amuru District

The district's major economic activity is subsistence agriculture, which employs about 98% of the population. However, with the construction of the great Juba Road and ready market in South Sudan, agriculture is likely to transform from mere subsistence production to large-scale commercial farming and the district is likely to experience a higher level of economic activity. According to the 2012 census, the population of Amuru District has been increasing over the years from 135,723 in 2002 to approximately 183,600 in 2012.

Ngoma District

Ngoma district, as shown in Figure 3.1 below, like other regions of the country, enjoys four seasons of which two are rainy and two are dry. Generally, the dry season begins earlier and ends later, compared to other regions of the country. According to the 2012 national census provisional results, the total population of Ngoma District is 338,562 inhabitants among which 162,388 are males and 176,174 are females (NISR, 2012). Agriculture is the main economic activity and also the main source of income for about 57% of households against only 21% whose source of income is wages. With regard to the income from agriculture products, 23.6% of the produce from Ngoma is sold within the district compared to 20.9% sold outside it. This shows to what extent the agriculture is for subsistence rather than a market-oriented one.

Gatsibo District

According to the 2012 national census provisional results, the total population of this district is 433,997. The percentage

of males in the population is 48% while females are 52%. Agriculture is the main economic activity. According to the Integrated Household Living Conditions Survey report, 84.9 % of Gatsibo's population, both men and women, basically depends on agriculture and 80% uses traditional agriculture practices. This district is known to have low rainfall and high temperatures that limit the availability of water. However, the district has promoted marshland reclamations for rice, banana and maize production on a large scale. The district is shown in Figure 3.1 below.

Bugesera District

The district, as shown in Figure 3.1, covers a total surface area of 1337 km² of which arable land is estimated at 91,930.34 ha. According to the 2012 national census provisional results, the total population is 363,339 people in the following proportion: 177,404 males and 185,935 females. Crop farming and livestock rearing are the district's economy's backbone as 77.8% of the population depends on agriculture. Subsistence agriculture is still dominant; hence less is produced for the market (EICV report, 2012).

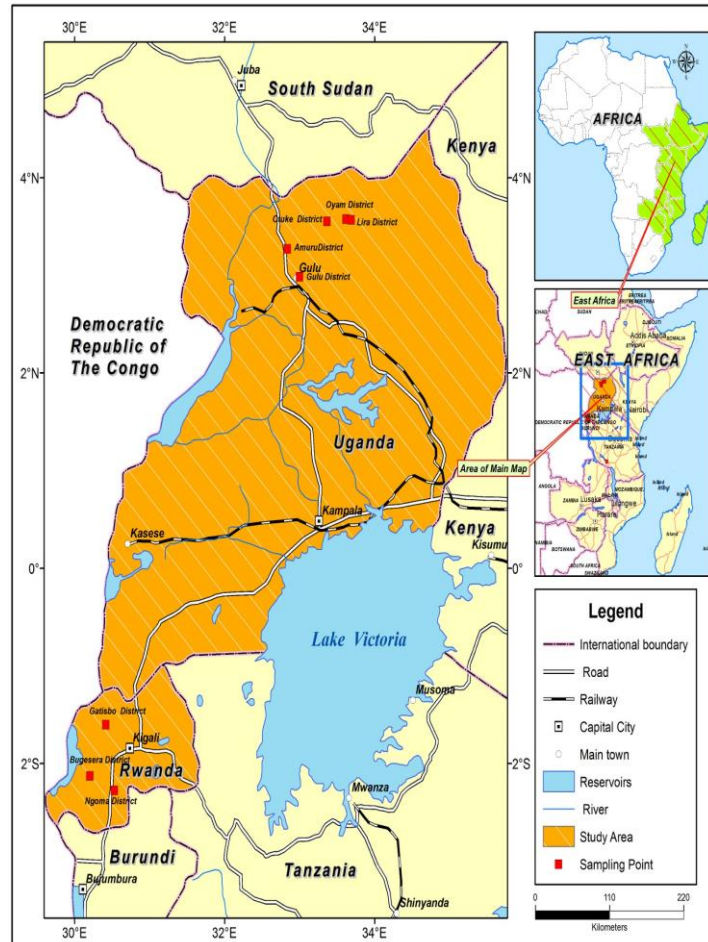


Figure 3.1: Map Showing Study Area.

Source: Geographical Information System (GIS) Authors (2017)

Sources of Data

Both primary and secondary sources were used. The secondary data were collected from journals, newsletters, base-line survey, published research works and books .The primary data were collected through key informant

interviews, focus group discussions, individual farmers' interviews, questionnaire and observations.

Instrument of Data Collection: Both structured and semi structured questionnaires were used to collect data from the beneficiary. Voice recorder and photo camera were also used, following the proper ethical standard.

Sample Selection and Sampling Procedures

A combination of different sampling procedures was used to select the samples to successfully meet the objectives of the study. The sample size was determined largely by financial and time constraints. However, effort was made to improve the reliability of the samples at each level of data collection processes.

Sampling Techniques

Multistage purposive cluster sampling techniques were used in selecting the study area and entail:

Stage 1: The purposive selection of 3 consortiums to make up the consortia: Ngetta, Equator Seeds and BABC consortiums in REACTS project.

Stage 2: The purposive selection of Northern Uganda and Eastern Rwanda for REACTS project because these are the regions where the projects were implemented.

Stage 3: The purposive selection of Lira, Otuke, Oyam, Gulu and Amuru districts in Uganda; Ngoma, Gatisbo and Bugesera districts in Rwanda. Districts with close proximity were selected.

Stage 4: The purposive selection of respondents from the active farmer members that grow the traded commodity in the consortium in each country.

Stage 5: The random selection of 374 smallholder farmers in the districts of the consortia.

Stage 6: The purposive selection of key partners in the consortia.

Stage 7: The purposive selection of the top management of partnered organizations (commercial inputs suppliers, lead firm/buyer, financial institution and team leader of the implemented project) in the consortia resulting to the interview of 12 key informants.

The sample units are smallholder farmers who are beneficiaries in the Ngetta, Equator Seeds, and BABC Consortium under the REACTS project in Uganda and Rwanda.

From each of the districts, the sample size from the population of beneficiaries was calculated using sample size calculator. Ten percent of the calculated sample size of the beneficiaries was selected. Questionnaires were administered on a total of 374 of beneficiary farmers in Uganda and Rwanda. The sample size for the survey was determined using the sample size calculator which is presented as a public service of Creative Research Systems via <http://www.surveysystem.com/sscalc.htm>. The Creative Research Systems calculator was used to determine how many people (beneficiaries) to interview in order to get results that reflect the target population as precisely as needed. The sample size was calculated using the statistics on confidence level (95 percent), confidence interval (1.96), and the population of beneficiaries as shown below in Table 3.1.

Table 3.1: Sample Size Determined for the Study

Consortium/ Location	Districts	Number of Benefici aries	Calculated Sample Size	Beneficiary Survey Sample Size (10% Of Calculated Sample Size)
Greater North Consortium	Lira	760	583	58
	OTUKE	822	619	62
	OYAM	405	349	35
Northern Ugandan Beans Consortium	Gulu	311	277	28
	AMURU	129	123	12
Babc Consortium Rwanda	Ngoma	1088	758	76
	GATSIBO	895	659	66
	BUGESERA	400	345	36
Total		4810	3713	374

Method of Data Collection

The data collected and used for the study cover both primary and secondary data sources and are both quantitative and qualitative. The secondary data were collected from journals, newsletters, baseline survey, published research works and books. Primary data were collected from smallholder farmers through questionnaires, one-on-one interviews, focus group discussions and observations. Data were also collected from key informants and stakeholders participating in the consortium.

Quantitative data were collected from smallholder farmers using structured questionnaires and the items measured male and female socio-economic characteristics, farmland cultivated, farm inputs, production outputs, production

costs and income level. Focus group discussion guide and key informant interview guide were used in addition to structured questionnaire to obtain qualitative data from smallholder farmers covering socio-cultural variables of the male and female farmers.

Coordinates and photograph of projects and respondents were taken with digital cameras, Global Positioning System (GPS), while voice recorder was used to tape the interviews with respondents. The structured questionnaires were pre-tested before the commencement of the research. The use of combination of tools was to obtain the desired data and validate respondent views and comments in order to ensure the integrity of the information provided.

Methods of Data Analysis

The data collected were coded and analysed using Statistical Package for Social Sciences (IBM SPSS statistics 20 and 22), MS Excel spreadsheet, Cost Benefit Analysis and SWOT Analysis. Collected data were collated, verified, coded, entered, cleaned and merged in the data sheet. Both qualitative and quantitative information were generated for the study and presented through a combination of cross tabulation, graphical and pictorial representations. Descriptive (frequencies, percentage, means, and standard deviation) and inferential statistics (t-test and p-value) were used to ascertain the distribution of the variables in the study. Quantitative data were analysed to generate descriptive statistics and qualitative data were analysed to obtain frequencies, percentages and acquire applicable project specific information.

Measurement of Variables

The study assessed independent and dependent variables of the projects. The independent variables measured in the study cover socio-economic characteristics of the respondents namely gender, age, ethnic background, marital status, educational attainment, nativity, farm size, planting season, capacity building on good agricultural practice (GAP), post-harvest handling (PHH), farming as business, farm inputs, technology, payment modality for inputs, delivery mechanism, and access to credit and storage facilities. Others are cost of production, production outputs, market requirement, farm proceeds (income), savings and other livelihoods of farmers in addition to constraints and challenges they faced. The dependent variable of the study covers productivity and income of the farmers.

Experimental and Randomized Control Variable

Randomized control trials estimate programme effectiveness by comparing participant outcomes before and after the intervention of consortium approach. The study employed randomization in order to demonstrate a causal relationship between the interventions of consortium approach and outcomes on income of smallholder farmers in REACTS project (Uganda and Rwanda). The sampled smallholder farmers were randomly selected as control group and the outcome of consortium approach interventions on their income before and after were assessed to ascertain causal relationship between intervention of consortium approach and outcomes toward determining the effectiveness of consortium approach. The strategy used in the data collection was to collect information from the beneficiaries before joining the consortia and after joining the consortia. The randomized control variable (RCV) enhanced precision

in the estimates of effects (reliability) of the study and accounts for selection bias.

Results, Discussion and Implication

Demographic and Socio-Economic Characteristics of Respondents

Result of the study reveals that of the 374 smallholder farmers interviewed in the three consortia, majority were females, as shown in Table 4.1. Age as one of the household characteristics is important to describe households' situation and can provide a clue on working ages of households. It is assumed that age would have a relationship with farmer's investment, gender roles and decisions on the value chains in the consortia. Majority of respondents mean age were found to be 43 years. The similar findings of age distributions were revealed by Chenyambuga *et al.*, (2008) and Nenganjwa (2005).

On marital status, the findings show that majority of respondents are married, followed by single, and widows; separated and divorced are the least. Similar findings were obtained by Aksoy *et al.*, (2011) and Lwelamila *et al.*, (2011). Married people have more responsibility towards their families (compared to those who are single) which makes them get involved in more income generating activities. These findings imply that involvement in the consortia has been in a way influenced by the responsibility individuals are shouldering in the family.

Table 4.1: Demographic and Socio-economic Characteristics of the Smallholder Farmers (Respondents)

Domains	Number of Farmers (Respondents) Percentage		
	Ngetta Consortium	Equator Consortium	BABC Consortium
Gender	n=156	n=40	n=178
Male	41.7	65.0	29.4
Female	58.3	35.0	70.6
Marital Status	n=156	n=40	n=178
Single	7.7	7.5	2.8
Married	84.6	75.0	93.2
Divorced	1.3	0.0	0.6
Separated	1.9	2.5	0.6
Widow	4.5	15.0	2.8
Educational Attainment	n=156	n=40	n=178
No Formal	17.5	15.4	5.6
Adult Literacy	1.9	10.3	2.2
Primary	51.2	64.1	81.5
Secondary	22.4	10.3	7.3
Advanced Level	4.5	0.0	0.0
University/Tertiary	2.6	0.0	3.4
Source of Farm Land	n=156	n=40	n=178
Self-owned	55.1	52.6	78.6
Inherited	37.8	47.4	16.3
Leased/Borrowed	7.1	0.0	5.1
Main Planting Season	n=156	n=40	n=178
March- July	98.1		
October - January		95.0	
November - March			100
Total land Owned (Acres)	n=156	n=40	n=178
Minimum	0.25	2	0.25
Maximum	31.0	60.0	17.3
Mean	5.5	14.0	2.7
Source of land	n=156	n=40	n=178
Self-owned	55.1	52.6	78.6
Inherited	37.8	47.4	16.3
Leased/ borrowed	7.1	0.0	5.1

Source: Own computation based on survey data (2017)

Findings of this study based on educational attainment reveal that majority of the smallholder farmers in all the consortia had attained primary level education. Similar findings were also reported by Changa *et al.*, (2010), Omondi and Meindert (2011), Chagunda *et al.*, (2010), Evans (2013) and Ogola *et al.*, (2010).

Findings of the study also reveal that March - July is the main planting for Ngetta consortium and Equator seeds consortium in Uganda, October-January and for BABC consortium in Rwanda, as shown in Table 4.1 The reasons are availability of rain, lower pest infestation and good germination rate of crops during the various seasons.

Land is a critical factor of endowment in any production activity, especially agriculture. The land ownership by respondents before and after the consortium ranges from leased/borrowed, inherited and self-owned. The findings show the source of land by respondents varies among the consortium. In the consortia, majority of the land are self-owned. The minimum and maximum land owned in the consortium ranges from $\frac{1}{4}$ acres to 60 acres. In Ngetta consortium, the land ranges from $\frac{1}{4}$ acre to 31 acres, in Equator consortium is from 2 acres to 60 acres, and BABC consortium is from $\frac{1}{4}$ acre to 17.25 acres.

The Effectiveness of the Consortium Approach vis-a-vis Conventional Approach on Incomes of the Smallholder Farmers Skills and Knowledge Acquisition

Training is one of the important components of the consortia. The respondents reported that before the

implementation of the consortium approach, only few have skills and knowledge about profit seeking, record keeping, producing for a well-understood market, techniques for minimizing costs of production; good agricultural practices, post-harvest handling and financial literacy. After introducing the consortium approach, 100% of the respondents from Ngetta and Equator consortium received training and knowledge on these skills, as shown in Figure 4.1.

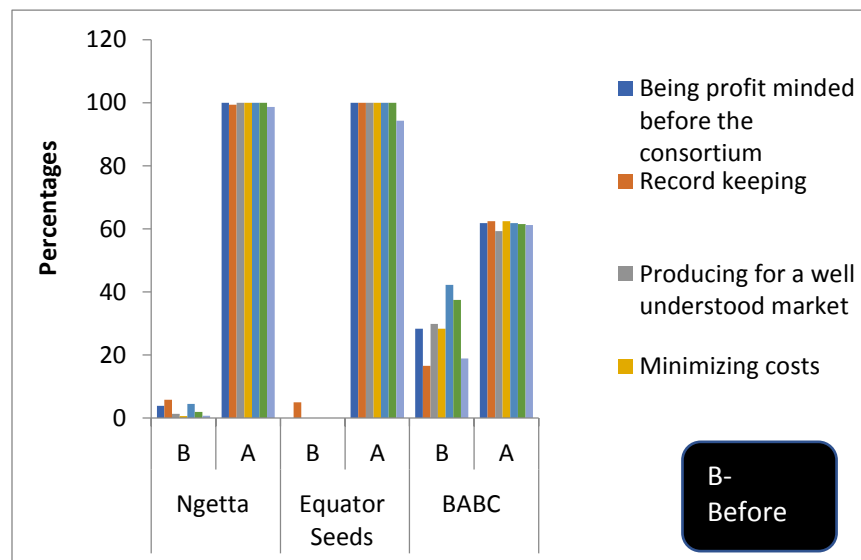


Figure 4.1: Distribution of respondents according to skills and knowledge acquired before and after the consortium approach.

Source: Own computation based on survey data (2017)

Impact of Consortium on Mean Harvest, Gross Margins and Total Revenue

As shown in Tables 4.2- 4.6, the mean harvests in one acre of sunflower cultivated in Ngetta before and after the consortium approach were 0.2034MT and 0.4641MT respectively. The gross margins before and after the consortium were 85USD and 12USD respectively. These margins indicate that farmers made a loss of 85USD before the consortium but a profit of 12USD was realized after the consortium. The mean revenues before and after the consortium were 66.7USD and 166.7USD respectively. The p-values for mean harvest, gross margins and mean revenue show that there was a significant difference, as shown in Table 4.2.

Table: 4.2 Effectiveness of Ngetta Consortium on Mean Harvest, Gross Margins and Total Revenue per Acre for Sunflower

VARIABLE	BEFORE	AFTER	P- VALUE
Mean harvest per acre (MT)	0.2034	0.4641	0.000**
Gross margins per acre (USD)	85	12	0.000**
Mean Revenue per acre (USD)	66.7	166.7	0.000**

Source: Own computation based on survey data (2017)

Respondents from Equator consortium reported mean harvests of 0.4964MT and 0.839MT in one acre of beans cultivated before and after the consortium respectively. The gross margins before and after the consortium were 15USD and 471USD respectively. This indicates that the farmers made a loss of 15USD before the consortium but realised a profit of 471USD after the consortium. The total revenues before and after the consortium were 58.3USD and

544.4USD respectively. The p-values for mean harvest, gross margins and total revenue show that there was a significant difference, as shown in Table 4.4.

Table 4.4: Effectiveness of Equator Consortium on Mean Harvest, Gross margins and Total Revenue per Acre for Beans

VARIABLE	BEFORE	AFTER	P- VALUE
Mean harvest per acre (MT)	0.4964	0.8395	0.005**
Gross margins per acre (USD)	15	471	0.000**
Mean Revenue per acre (USD)	58.3	544.4	0.000**

Source: Own computation based on survey data (2017)

Respondents from BABC consortium record mean harvests of 0.797MT and 0.8893MT in one acre of maize cultivated before and after the consortium approach respectively. The gross margins before and after the consortium were 124USD and 150USD respectively. The gross margins indicate that farmers made a loss of 124USD before the consortium but realised a profit of 150USD after the consortium. The mean revenues before and after the consortium were 125USD and 357.1USD respectively. The p-values for mean harvest, gross margins and mean revenue show that there was a significant difference, as shown in Table 4.6.

Table 4.6: Effectiveness of BABC Consortium on Mean Harvest, Gross Margins and total Revenue per Acre for Maize

VARIABLE	BEFORE	AFTER	P- VALUE
Mean harvest per acre (MT)	0.797	0.8893	0.000**
Gross Margins per acre (USD)	124	150	0.000**
Total Revenue per acre (USD)	125	357.1	0.000**

Source: Own computation based on survey data (2017)

Costs-Benefits/Profitability Analysis

This section discusses the cost benefits/profitability before and after the consortium. In all the three consortia accessed, farmers made losses before but made profits after, as shown in Figures 4.2-4.4. The explanation for this is that before the consortium, farming was done as usual; farmers did not make use of the best agricultural practices. Majority replanted from previous harvest; no proper record keeping; cost of production was not minimized; no reliable market; produce was sold through middlemen and market price was low. For instance, 1kg of sunflower grains was sold at 0.21USD, 1kg of bean grains was sold at 0.42USD and 1kg of maize grains was sold at 0.17USD.

However, after the consortium, farming is now done as business; good agricultural practices are adopted; farmers have acquired the skills to be business- minded and they also know that it is not about the price offer but about making profit. They now do record keeping, which enables them to determine the best price at which they sell their commodity. Farmers know whether they are doing a good business or not. They now plant improved seeds and their cost of production is minimized through the use of family

labour and collective action in accessing production inputs and marketing of produce.

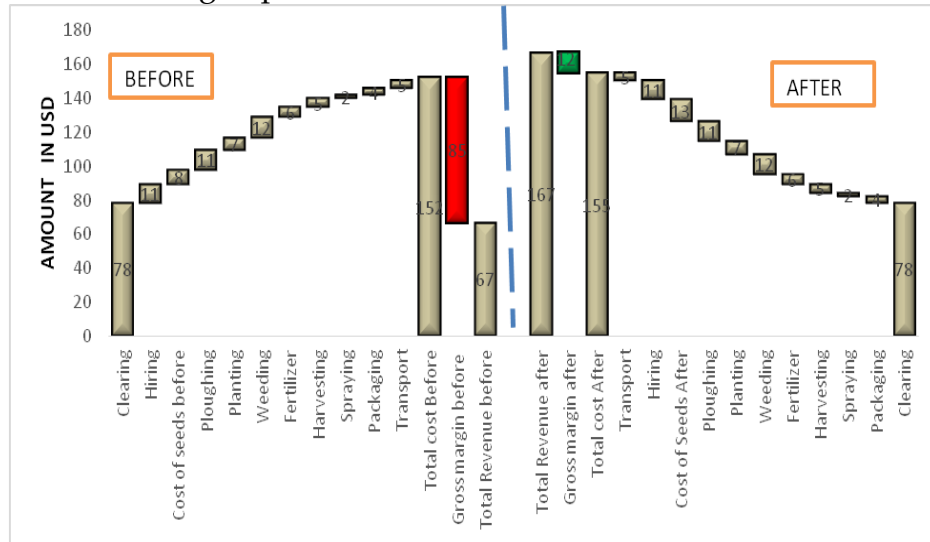


Figure 4.2: Cost- Benefits/Profitability Analysis of Ngetta Consortium for Sunflower Per Acre.

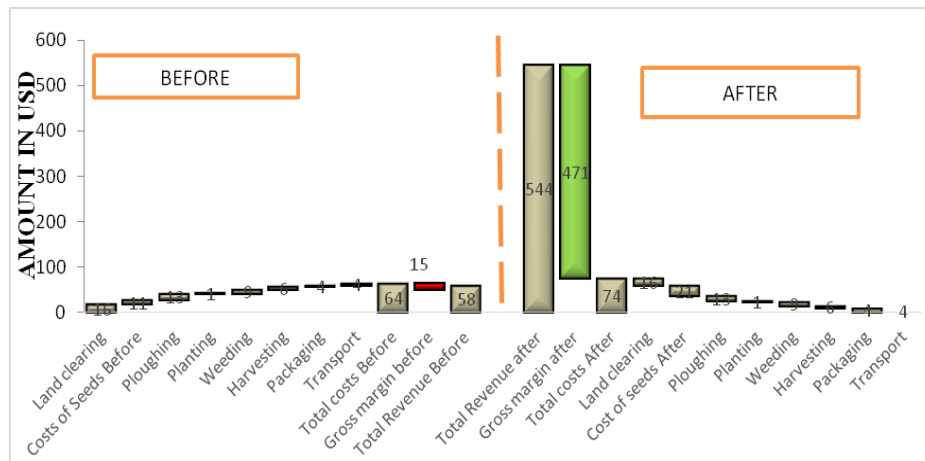


Figure 4.3: Cost- Benefits/Profitability Analysis of Equator Consortium for Beans Per Acre

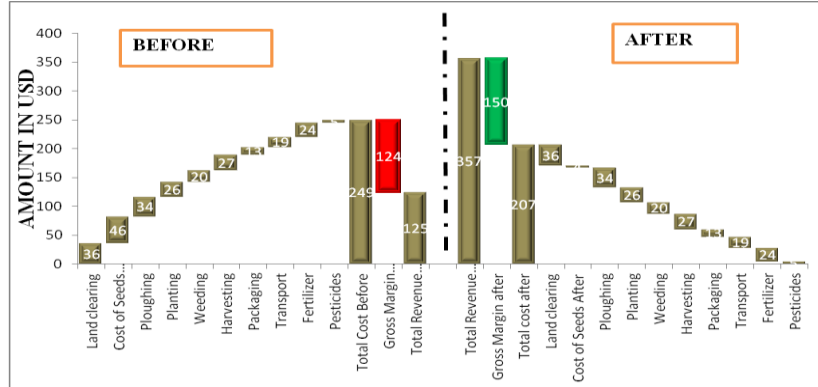


Figure 4.4: Cost- Benefits/Profitability Analysis of BABC Consortium for Maize Per Acre

Critical Success Factors for Sustainability of Consortium Approach

The critical or key success factors of consortium approach lie in strong capacity training on skills and knowledge which enhance the adoption of ‘farming as a business’ concept as well as market orientation for farmers, as referenced from the results. These two points form part of the module used in training farmers at Kilimo Trust Farmers Business School (KTFBS). Close monitoring of farmers is also important to ensure dedication and commitment. Availability of a lucrative market in the consortium as well as farmers’ understanding of the market opportunities/requirements is also important. Joint/seasonal planning among all value chain actors is important to ensure that targets/satisfaction/expectations of all actors in the consortium are met.

Supply of good quality production inputs by the contracted commercial inputs supplier is germane because this directly has an impact on the farmers’ production outputs and the

quantity of produce that is supplied to the buyer. A trust-based team or collective work among the actors in the consortium is crucial. Joint problem and equal risk sharing between farmers and buyers in the consortium is also important. Table 4.2 reveals the comparison of key attributes of before and after the consortium approach in food value chain development.

Table 4.2: Comparison of Key Attributes/Success factors of Conventional Approach (Before) and Consortium Approach (After) in Value Chain Development

Attributes	Conventional Approach (Before)	Consortium Approach (After)
Transaction Terms	Short- term transactions (individually)	Long-term transactions (group)
Market Decision	Made on price/role of personal bargaining	Made on value/joint-decision making
Partnership	Many	Fewer are selected
Interdependence	Low	High
Production	Supply-driven and low	Demand-driven and High
Communication	Limited	Open
Coordination	Limited	Strong
Level of Investments	Avoided /low level	Higher level
Information	Proprietary	Shared
Improvement	Unilateral initiatives	Continuous joint activities
Activities	Separate	Engaged
Goals	Disharmonious (conflicting) goals	Compatible / common goals
Oppportunism	Behave opportunistically	Mutual trust
Incentives	Adversarial attitudes	Common, mutual attitudes
Acting	Act only in own interest	Act for mutual benefits
Orientation	Win-lose	Win-win

Strengths, Weaknesses, Opportunities and Threats of Consortium Approach

The SWOT Analysis of Kilimo Trust Consortium approach to food value chain development in improving incomes of smallholder farmers as shown in Table 4.3

Table 4.3. SWOT Analysis of Kilimo Trust Consortium approach

Strengths	Weakness
<ol style="list-style-type: none"> 1. Market first orientation and market certainty before production. 2. Business stand of making profits from all actors. 3. High demand to attract market. 4. Optimization of economies of scale. 5. Joint decision making is high and price determination through negotiation. 	<ol style="list-style-type: none"> 1. High dependency on the lead firm/buyer/off-taker in the consortium. 2. Low source of income diversification. 3. Lack of trust due to limited transparency among partners on transactions. 4. Low volume storage capacity at the farmers' cooperative collection centre.
Opportunities	Threats
<ol style="list-style-type: none"> 1. Well organized approach that attracts investors like banks and leverages a lot of financing for the value chain which help farmers invest money. 2. Ease of scaling up the approach is high. 3. Demand driven rather than 	<ol style="list-style-type: none"> 1. Advocacy of governments in Uganda and Rwanda giving out free inputs with low quality standard could threaten the approach because farmers tend to diversify. 2. Government rules on food security - for example,

<p>supply driven</p>	<p>Rwanda’s first harvest last season was sold to the government store before consideration of bulking to the buyer in the consortium.</p> <ol style="list-style-type: none"> 3. Fellow farmer: Low carrying capacity of available storage facility, improvising this by renting, high rate is given to farmers. 4. Buyer: farmers demand of exorbitant prices on produce. Low quality and quantity of produce from farmers especially in post-harvest handlings. 5. Financial Institution: Delay in payment from the buyer after the off taking farmers produce. 6. Pests and disease infestations or outbreak. 7. Changing Climate, drought is a threat to the approach. 8. Poor infrastructure such as bad road, and unavailability of transport facilities.
----------------------	---

Summary of Major Findings

The findings of the study describe the demographic characteristics of farmers in the consortia who cultivated sunflower, beans and maize from Ngetta, Equator and BABC

consortium respectively. The study reveals variations in the age, marital status and education level of respondents. The findings show that most of the farmers are married, most have primary level of education and most are distributed between ages 40 and 43 years. The main planting season for Ngetta and Equator consortium is distributed between March-July while BABC consortium is distributed between October-January.

The findings reveal that majority of the respondents before the consortium do not have the skills and knowledge of being business-minded in their farming activities and so they only practised subsistence farming. Farming was done on a low scale and there was low production output; farmers were not ready to invest money in production inputs – they had the mindset of accessing free inputs from government, NGOs and the like. However, after the consortium approach, farmers have acquired skills and knowledge of being business-minded and market-oriented before production. There is now a shift from subsistence farming to commercialized farming.

Findings of this study also reveal that collective action or cooperative organization plays a great role in consortium activities. Farmers' joint involvement in accessing production inputs and bulking of marketable volume of produce were achievable because of the large number of farmers involved.

There are significant differences on mean harvest seasonally and per acre cultivated before and after the consortium. Mean revenues generated seasonally, gross margins, total revenue generated per acre and total land dedicated or cultivated for commodity before and after the consortium all

show significant differences. The reasons given for the differences in the aforementioned variables were: market first orientation before production, ready market to supply, good market price offered directly to farmers without interference of middle men and use of good quality inputs with high germination rate and yield.

Generally, findings reveal that the consortium is a profitable approach to food value chain development. The results of cost benefits analysis in all the consortia show that before, farmers did business at a loss, but now they are making profits in their farming business.

The result also reveals that the key success factors for consortium approach are market and business orientation of all the actors and collection action. The SWOT analysis results show that the main strengths of the approach are that all actors in the value chain stand the chance to make profits while the main weakness is that there is high dependency of other actors on the identified lead firm/off-taker/buyer in the consortium. The opportunity is that the approach is demand driven rather than supply driven while the main threat of the approach is advocacy of giving out free inputs to farmers.

In summary, results of the study show that consortium approach addressed knowledge of market requirements, information flow and production practices, improve production quantity and quality, as well as linkages to inputs and finance. The approach facilitated the development of private-sector grading standards to clarify and communicate end market requirements, developed

contracts to decrease the perceived risk of side selling by farmers.

Conclusions

The study reveals that consortium approach has been effective *vis-a-vis* conventional approach in addressing the constraints of smallholder farmers which are inadequate or lack of knowledge of good agricultural practices, lack of access to credits, lack of access to quality production inputs, poor post-harvest practices and inefficient markets as well as inability to produce commodities that meet the requirement of a competitive market. The evidence-based findings from the study also show the effectiveness of consortium in increased productivity and incomes of small holder farmers in the project areas. Similarly, the results indicate that farmers' access to quality production inputs, credits and capacity building (good farming skills and knowledge) were increased through the consortium approach.

The noticeable impacts in production and incomes of smallholder farmers emphasise the critical success factors that underlie consortium approach. These factors include farming as a business, market orientation, access to quality production inputs, collective action, which has helped actors in good decision making, and availability of market, that is, the buyer partnering in the consortium and providing market for farmers.

The SWOT analysis of consortium approach justifies that there are sellable strengths and opportunities that outweigh the weaknesses and threats of the approach, and, so, the consortium approach should be scaled up to other commodities.

One lesson learnt from the study is that the consortium approach helps in faster decision making. The opportunities provided by the approach help all actors in the value chain to be faster in the adoption of recommendations and in sending constant success message of the Regional East African Community Trades in Staples (REACTS) project.

Policy Implications

The policy implications of the study include that the governments of Uganda and Rwanda should continue to ensure that the national trade policies encourage the operation of cooperatives/farmer groups. Government should adopt stable and supporting policies that would enhance the formation of consortium for important and selected food crops as well as dairy or livestock. Government policy should ensure increased production/productivity and also provide good storage capacity to support this increment at farmers' group level. Government policy on export bans and rules for both countries' food security should be considerate enough to support buyers in the consortium, and ensure that private sector investment, ownership and leverage of public sector involvement have an enabling environment to thrive.

Recommendations

The REACTS project was a pilot project in Rwanda and Uganda from 2014-2017. The outcome of the assessment study indicates that the approach has been effective in increasing the production outputs, productivity and income of smallholders' farmers. Therefore, the programme should be extended to 3-5years and should also be scaled up to incorporate more farmers producing the traded commodity in other districts that are not part of the pilot project.

Similarly, other commodities should be integrated into the consortium. The provided targeted funds by the donors should be used to strengthen certain phases of the value chain, for example warehousing receipt system.

Farmers should be trained on climate resilience agriculture. In Ngetta and Equator consortia of Uganda, there is a need to increase the level of farmers' access to finance, since farmers' business organizations, cooperatives are registered. Buyers should also be made readily available. There should be provision of financial credit advance for inputs supplied to farmers with the payment arrangement financed by the bank. Farmers should have a diversified source of income which would help to reduce the rate of side-selling through middlemen as it would also enable farmers to improve on post-harvest handlings. Farmers should be constantly sensitized and mobilized into groups/cooperative so that training can be easy, and their voices can be heard.

Buyers should have access to working capital to address the problem of delay in payment to farmers. Buyers of each consortium should be linked to many cooperatives to avoid buying low volumes when an unforeseeable risk occurs on production outputs of farmers.

Contracted financial institution involved in the consortium should be considerate on the interest loan given to farmers – at least 15% per year. In addition to this, Village Savings Loan Associations (VSLA) should be encouraged because the interest rate on money accessed is lower than in financial institutions – 10% -- and at end of the year, the returns are shared among members of the association -- this is better than financial institutions.

Government should align their policy objectives to incorporate smallholder farmers in a manner that promotes commercialised farming. Government should provide infrastructure such as good roads to facilitate movement of produce to markets and should also enhance resources for extension services for more effective and wider coverage. Government, NGOs and industries should support climate smart programmes or technologies to develop a much larger range of varieties and hybrids that are better adapted to the changing environments to combat drought. The choice of the varieties to be promoted must be determined by agro processors.

Kilimo Trust, as the implementing partner, should strengthen the activities of monitoring and evaluating each phase implemented within the consortium. More diligence is required when choosing or selecting a lead-firm/off-taker/buyer in the consortium to reduce farmers' disappointment after production.

The level of accountability and transparency of each actor's activities should be improved so that the level of trust among all partners is increased. More advocacy and constant sharing of the success stories of adoption of consortium approach from beneficiaries would also help.

References

- Abdulsamad, Ajmal, Shawn Stokes, and Gary Gereffi. (2015). "Public-Private Partnerships in Global Value Chains: Can They Actually Benefit the Poor?" *USAID. LEO Report No. 8. Available at SSRN:* retrieved from <http://dx.doi.org/10.2139/ssrn.2594465>
- Agricultural Research Council (ARC). (2007). Report to Limpopo Department of Agriculture. *Report: GW/A/2007/01. A strategy for the Limpopo Department:Hydrological analysis. Unpublished Report.* retrieved from www.lida.gov.za.
- Ajmal Abdulsamad Gary Gereffi October (2016) Dairy Value Chains in East Africa Duke Centre on Globalization, Governance & Competitiveness.
- Aksoy,A. Kulekci,M and Yavuz, F.(2011) Analysis of the factors affecting the adoption of innovations in dairy farms in Erzurum Province, Turkey. *African Journal of Agricultural Research* Vol. 6(13): 2966-2970.
- Alberta Agriculture and Food Council (AAFC). (2004). Value chain guide book: A process for value chain development. Value Chain Initiative. 2nd Edition. September 2004. retrieved from www.agfoodcouncil.com
- Amos G. Steven F. Maryben C. Godwill N. and Kwadwo O. (2014) Collective action to improve market access for smallholder producers of agroforestry products: key lessons learned with insights from Cameroon's experience. *Current Opinion in Environmental Sustainability*, 6: pp 68-72
- Amuru District Local Government: Amuru District Local Government Statistical Abstract 2012/13Report prepared with support from UNFPA and Uganda Bureau of Statistics.
- Anandajayasekeram, P. and Berhanu Gebremedhin, (2009). Integrating innovation systems perspective and value chain analysis in agricultural research for development and challenges in

improving productivity and market success (IPMS) of Ethiopian farmers project. *Working paper 16. ILRI (International Livestock Research Institute), Nairobi, Kenya.*

Arias, P., Dankers, C., Liu, P., & Pilkauskas, P.,(2003). *The World Banana Economy, 1985-2002. Rome: Food and Agriculture Organization.*

Asian Development Bank (ADB). (2005). *Agricultural commercialization, value chains and poverty reduction: Making markets work better for the poor. Discussion Paper No.7. retrieved from at: www.markets4poor.org*

B Munyua, A Orr, J Okwadi, (2013) *Open Sesame: A Value Chain Analysis of Sesame Marketing in Northern Uganda.*

B. Vorley (2012), 'Small Producer Agency in the Globalised Market', Available at <http://pubs.iied.org/pdfs/16521IIED.pdf>

Baloyi J.K.(2010) *An analysis of constraints facing smallholder farmers in the Agribusiness value chain: A case study of farmers in the Limpopo Province M.sc Dissertation submitted to the Department of Agricultural Economics, Extension and Rural Development Faculty of Natural and Agricultural Sciences University of Pretoria.*

Banson, KE, Nguyen, NC, Bosch, OJH & Nguyen, TV (2014) 'A systems thinking approach to address the complexity of agribusiness for sustainable development in Africa: a case study in Ghana', *Systems Research and Behavioral Science*, pp.

Bienabe, E., Coronel C., Le Coq, J. & Liagre, L. (2004) *Linking smallholder farmers to markets: Lessons learned from literature review and analytical review of selected projects. Study Report, Final draft, March. CIRAD & IRAM. World Bank.*

Bienabe, E., Coronel C., Le Coq, J. & Liagre, L. (2004). *Linking smallholder farmers to markets: Lessons learned from literature review and analytical review of selected projects. Study Report, Final draft, March 2004. CIRAD & IRAM. World Bank.*

- Biruhalem, K.(2010). Rice value chain in Metema district, North Gondar, Ethiopia: challenges and opportunities for innovation. *An M.A Thesis Presented to the School of Graduate Studies of Addis Ababa University.*
- Chagunda, M. G .G., Msiska, A. C. M., Wollny, C. B. A., Tchale, H and Banda, J .W. (2010). An analysis of smallholder farmers' willingness to adopt dairy performance recording in Malawi. Retrieved from [http://www.lrrd.org/lrrd18/5/chag18066 .htm](http://www.lrrd.org/lrrd18/5/chag18066.htm). On 19 June 2017
- Chang“a, J.S., Mdegela, R.H., Ryoba, R. Loken, T. and Reksen, O. (2010). Calves health and management in smallholder dairy farms in Tanzania. *Tropical animal health production* Vol. 42(8): 1669–1676.
- Claude Bizimana, Felicien Usengumukiza, John Kalisa and John Rwirahira (2012) Trends in Key Agricultural and Rural Development Indicators in Rwanda.
- Contract document between IFAD and The Registered Trustees of Kilimo Trust (2014) *being a President's report on a proposed grant under the global/regional grants window to a non-CGIAR-supported international centre. EB 2014/LOT/G.7 pp 9.*
- Dempsey, J. (2006) A case study of institutional building and value chain strengthening: To link Ethiopian cooperative coffee producers to international markets. ACIDI/VOCA, Addis Ababa, Ethiopia.
- Dendena, G. Efrem, L. and Lema, B.(2009). Fresh mango value chain analysis in Arbaminch area. *Organization of Value Chain Competency. Addis Ababa, Ethiopia.* p. 63.
- Dereje Birhanu, (2007). Assessment of forest coffee value chains in Ethiopia: A case study in Kefa Zone, Gimbo District. *Agricultural Science and Resource Management in the Tropics.*

- Development Innovation Wageningen UR.Land O'Lakes Inc. (2012). Rwanda Dairy Competitiveness Program II (RDCP II): Baseline Survey Report.
- Dixon, J. and Taniguchi, K.(2003). Approaches to assessing the impact of globalization on African smallholders: Household and village economy modelling. *Proceedings of a working session on Globalization and the African Smallholder Study*. Rome: Food and Agriculture Organization.
- Ellen M. Bart S. P. (2010). Dealing with small scale Producers, Linking buyers and producers .pp 1-82
- Evan Jeckonia Mvurungu (2013). Gender Analysis on Milk Value Chain: A Case of Tanga City and Iringa Municipality, *A Dissertation Submitted in Partial Fullfillment Of The Requirement For The Degree Of Master Of Arts In Rural Development ofThe Sokoine University Of Agriculture*. Morogoro, Tanzania.
- Friedman, Lynette and LeBan, Karen. (2014). Consortium Management and Leadership Training Facilitator's Guide. CORE Group: Washington D.C.
- Gagnon, N (2012) 'Introduction to the global agri-food system', in JI Boye & Y Arcand (eds), *Green technologies in food Production and processing*, Springer New York, pp.3 22.
- Ganesh Thapa and Raghav Gaiha (2011) Smallholder Farming in Asia and the Pacific:Challenges and Opportunities. *Paper presented at the IFAD Conference on New Directions for Smallholder Agriculture*.
- Geoff Chalmers Jason Agar of Kadale Consultants, Malawi with funding from USAID's Leveraging Economic Opportunity (LEO) project. PORTFOLIO OWNERSHIP AMONG AGRIBUSINESS SMES IN MALAWI.
- Getnet Haile, (2009). The impact of global economic and financial crises on the Ethiopian dairy industry. Least developed countries ministerial conference, 3-4 December 2009, Vienna

international center, Austria. United Nations industrial development organization.

- Gibson A.(2005). Case Study Number 1 KATALYST approach Improving embedded information in the distribution system. Bringing Knowledge to Vegetable Farmers pp 1-32.
- Gilbert, C. L., (2006). Value chain analysis and market power in commodity processing with application to the cocoa and coffee sectors. *Presentation Paper for the FAO Workshop on Governance, Coordination and Distribution along Commodity Value Chains. April, Rome, Italy, FAO.*
- GTZ (German Agency for Technical Cooperation), (2007). Value links Manual. The Methodology of Value Chain Promotion. Eschborn, Germany, GTZ.
- Gulu District Local Government: Gulu District Local Government Statistical Abstract 2012/13 Report prepared with support from UNFPA and Uganda Bureau of Statistics
- Hazell, P., C. Poulton, S. Wiggins, and A. Dorward. (2007). The Future of small farms for poverty reduction and growth. International Food Policy Research Institute (IFPRI) 2009 *Discussion Paper 42, May 2007. Washington D.C.: IFPRI.* Hazell, P. 2009. *The Asian Green Revolution. IFPRI Discussion Paper 00911, November 2009. Washington D.C.: IFPRI.*
- Hazell, Peter, Colin Poulton, Steve Wiggins, and Andrew Dorward. (2007). "The Future of Small Farms for Poverty Reduction and Growth." Washington, DC: *International Food Policy Research Institute.*
- Hobbs, J.E., A. Cooney, and M. Fulton, (2000). Value chains in the agri-food sector: What are they? How do they work? Are they for me? *Department of Agricultural Economics, University of Saskatchewan. Canada. 31p.*
- Humphrey, J., (2006) Global value chains in the Agri-food sector. *Working Paper on Global Value Chains and Production*

Networks: Prospects for Upgrading by Developing Countries.
Institute of Development Studies University of Sussex, Brighton.

ILO (International Labour Organization), (2006). An ILO guide for value chain analysis and upgrading, Geneva.

Integrated District Development planning 2013- 2018, Situation Analysis for Ngoma District, LUP textbook Ngoma District Final (2014).docx

Integrated District Development planning 2013- 2018, Situation Analysis for Bugesera District, LUP textbook Bugesera District Final (2014).docx

Kaplinsky R and Morris M. (2002) A Handbook for Value Chain Research. Brighton: Institute of Development Studies, University of Sussex.

Kaplinsky, R. and M. Morris, (2000). A handbook for value chain research, IDRC. Ottawa, Canada.

Kaplinsky, R. and M. Morris, (2001). A handbook for value chain research, prepared for the IDRC in the Bellagio workshop.

Key, N. & Runsten, D. (1999). Contract farming smallholders, and rural development in Latin America: The organization of agro-processing forms and the scale of out-grower production. *World Development*, 27(2): 381-401

KIT, Faida MaLi and IIRR, (2006). Chain empowerment: Supporting African farmers to develop markets. *Royal Tropical Institute, Amsterdam; Faida Market Link, Arusha; and International Institute of Rural Reconstruction, Nairobi.*

KPMG, 'The Agricultural and Food Value Chain: Entering a New Era of Cooperation', retrieved from <https://www.kpmg.com/global/en/issuesandinsights/articlespublications/pages/agricultural-and-food-value-chain.aspx>.

Kilimo Trust Why Regional Trade? From Document (2017)

- Laven, A., (2010). The risks of inclusion: Shifts in governance processes and upgrading opportunities for cocoa farmers in Ghana. retrieved from: http://www.kitpublishers.nl/net/KITPublish_output/ShowFile2.aspx?e=1687. Accessed on April 2017.
- Lira District Local Government Statistical Abstract (2012) Report prepared with support from Uganda Bureau of Statistics.
- Lwelamira, J., Binamungu, H.K. and Njau, F. B. (2011). Contribution of small-scale dairy farming under zero-grazing in improving household welfare in Kayanga ward, Karagwe District, Tanzania retrieved from <http://www.lrrd.org/lrrd22/2/lwel22031.htm>. On 19 June 2017.
- Makoni, N., Redda, T., van der Lee, J., Mwai, R., & van der Zijpp, A. (2014). White gold: Opportunities for dairy sector development collaboration in East Africa: Centre for
- Marieke R.W. David E. Rob H. (2006) Comparative Approaches to Private Sector Development - a MMW perspective. *A working paper for the Employment & Income Division of SDC.*
- Markelova, H., Meinzen-Dick, R., Hellin, J., Dohrn, S., (2009). Collective action for smallholder market access. *Food Policy* 34(1), 1-7.
- McCormick, D. and H. Schmitz, (2002). Manual for value chain research on home workers in the Garment Industry, IDS, Brighton.
- Meaning of consortium retrieved from www.google.com.
- Mebrat T. (2014) Tomato value chain analysis in the central rift valley: The case of Dugda Woreda, East Shoa Zone, Oromia National Regional State, Ethiopia. *M.Sc. Thesis.*
- Mueller, Bernd, and Man-Kwun Chan. (2015). "Wage Labor, Agriculture-Based Economies, and Pathways out of Poverty: Taking Stock of the Evidence." USAID. LEO Report No. 15. retrieved from: <https://www.mi->

crolinks.org/sites/default/files/resource/files/Report_No_15_Labor_Stocktaking_Report_final.pdf

Mukwaya, Paul, Yazidhi Bamutaze, Samuel Mugarura and Todd Benson (2012) Rural -Urban Transformation in Uganda.

Nagayets, Oksana. (2005). "Small Farms: current status and key trends." In: *The future of small farms: proceedings of a research workshop*, Wye, UK June 26-29 IFPRI. retrieved from: www.ifpri.org/publication/futuresmall-farms

Nenganjwa, B. (2005). Gender relation in livestock production and ownership: Implication for household food security in Teso farming system, Makerere University, p92.

Office of the United Nations High Commissioner for Human Rights Principles and Guidelines for Human Rights Approach to Poverty Reduction Strategies retrieved from <http://www.ohchr.org/Documents/Publications/PovertyStrategiesen.pdf> (Accessed on 31/3/2017)

Olson, M., (1971). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press, Cambridge, Massachusetts.

Omondi, S.P.W and Meinderts, J. (2011). The status of good dairy farming practices on small-scale farms in central highlands of Kenya retrieved from <http://www.kari.org/biennialconference/conference12/docs.pdf>. on 19 June 2017.

Otuke District Local Government: Otuke District Statistical Abstract for 2012/13 Report (2013) prepared with support from UNFPA and Uganda Bureau of Statistics.

Ouma, E., Jagwe, J., Obare, G.A., Abele, S., (2010). Determinants of smallholder farmers' participation in banana markets in central Africa: the role of transaction costs. *Agricultural Economics* 41(2),111-122.

- Oyam District Local Government: Oyam District Statistical Abstract for 2012/13 Report (2013) prepared with support from UNFPA and Uganda Bureau of Statistics.
- Paul Nyende (2011) Building Networks for Market Access *Lessons Learned from The Rural Knowledge Network (RKN) Pilot Project for East Africa (Uganda, Kenya and Tanzania)* FAO/Government Cooperative Programme
- Ponte, S., (2002). The late revolution regulation, markets and consumption in the global coffee chain. *World Development*, 30 (7): 1099-1122.
- Porter, M. and V.E. Miller, (1985). How information gives you competitive advantage. *Harvard Business Review*. p. 149-160.
- Poulton, C., Dorward, A., and Kydd, J., (2010). The future of small farms: New directions for Services, institutions, and intermediation. *World Development* 38(10), 1413-1428.
- Reardon, T., Barrett, C.B., Berdegue, J.A. & Swinnen, J.F.M. (2008). Agrifood industry transformation and small farmers in developing countries. Forthcoming: *rldDevelopment*.
- Republic of Rwanda Gatsibo District Eastern Province District Development Plan (2013- 2018)
- Republic of Rwanda National Institute of Statistics of Rwanda, Integrated Household Living Conditions Survey: Enquête Intégrale sur les Conditions de Vie des Ménages (EICV3) (2011) District Profile East Gatsibo Report.
- Rich, K., A. Negassa and B. Ross, (2008). Concepts, applications and extensions of value chain analysis to livestock products in developing countries: *A review and research agenda*. Mimeo. ILRI (International Livestock Research Institute), Nairobi, Kenya.

Roy, D., Thorat, A., (2008). Success in high value horticultural export markets for the small farmers: The case of Mahagrapes in India. *World Development* 36(10), 1874–1890.

Rural and Agricultural Finance: Taking Stock of Five Years of Innovations. micro Report 181. USAID. December 2011

Schmitz, H., (2005). Value chain analysis for policy makers and practitioners. International labour organization, Geneva.

Shepherd, A.W. (2007). *Approaches to linking producers to markets: A review of experience to date.* Agricultural Management, Marketing and Finance. *Occasional Paper No. 13.* Rome: Food and Agriculture Organization of the United Nations.

Shiferaw, B.A., Obare, G., Muricho, G., Silim, S., (2009). Leveraging institutions for collective action to improve markets for smallholder producers in less-favoured areas. *African Journal of Agricultural and Resource Economics* 3(1), 1-18.

UNDP (2006) What is Poverty? Concepts and Measures, Poverty in Focus.

UNDP, (2015) Human Development Index Uganda, retrieved from <http://hdr.undp.org/en/statistics/> on January 2017

UNIDO (United Nations Industrial Development Organization), (2009). Agro-value chain analysis and development. Vienna.

UNIDROIT, FAO and IFAD. (2015). UNIDROIT/FAO/ IFAD Legal Guide on Contract Farming.

USAID (2015) Scaling Impact: Improving small holders farmers' beneficial access to output markets pp1-32.

Valentinov, V., (2007). Why are cooperatives important in agriculture? An organizational economics perspective. *Journal of Institutional Economics* 3(1), 55–69.

- Van Rensburg, A., (2006). Moving up the value chain. Report on Enabling Business Process Outsourcing with Business Fractals. Pretoria, South Africa, EUROMA International Conference. p 1161-1170.
- Wambugu, F., Kiome, R.M., (2001). The benefits of biotechnology for small-scale banana producers in Kenya. ISAAA Briefs 22. Ithaca, NY: *International Service for the Acquisition of Agri-biotech Applications*.
- WOCCU, (2009) Technical Guide: Integrated Financing for Value Chains. (www.woccu.org/publications/techguides).
- World Bank. (2003). Reaching the rural poor: A renewed strategy for rural development. Washington, DC.
- www.gatsibo.gov.rw accessed 26th April 2017.



Centre for Sustainable
Development

Centre for Sustainable
Development
20, Awolowo Avenue,
Old Bodija Estate, Ibadan,
Nigeria.

Tel: +234-708-077-1393
E-mail: cesdevui@gmail.com

ABOUT CENTRE FOR SUSTAINABLE DEVELOPMENT (CESDEV)

The Centre for Sustainable Development (CESDEV) was established by the University of Ibadan through Senate paper 5386 in May 2010 as a demonstration of the University's commitment to Sustainable Development. It was based on the need to provide intellectual platform for identification of issues germane to sustainable development, critically analyse them, and provide leadership in finding enduring solutions that will enhance sustainable development.

The establishment of CESDEV was sequel to series of events, paramount among which was the winning of a USD 900,000 grant from the MacArthur Foundation to establish the Master's in Development Practice (MDP) Programme. The University of Ibadan was one of the ten original Universities that won the grant in a global competition involving over 70 Universities. Further brainstorming led to defining the composition of the emerging Centre beyond the MDP Programme. It was resolved that a number of development programmes that were "hanging in the balance" be moved to the Centre. The **Centre for Sustainable Development** (CESDEV) thus became a Teaching and Research Centre with a mandate in multi- and inter-disciplinary approach to Sustainability issues affecting not just our continent but the whole universe. The Centre is designed to be a Teaching, Research and Development unit in the University. Presently, CESDEV has the following academic and outreach programmes:

- ◆ Development Practice Programme (DPP)
- ◆ Tourism and Development Programme (TODEP)
- ◆ Indigenous Knowledge and Development Programme (IKAD)
- ◆ Sustainable Integrated Rural Development in Africa Programme (SIRDA)
- ◆ Climate and Society Programme (CSP)
- ◆ Environmental Protection and Natural Resources Programme (EPNARP)
- ◆ Leadership and Governance Programme (LGP)
- ◆ Annual Ibadan Sustainable Development Summit (ISDS)

ISBN: 978-978-56659-7-3



978-978-56659-7-3