

Promoting Multi-Actor ‘Innovation’ Platforms for Agribusiness Value Chain Models in Great Lakes Region of East Africa

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Abstract

The paper emphasizes the application of appropriate ICT tools to upgrade the smallholder producers in agricultural sector and to facilitate commercially-oriented production. In this context, the study examines digitalization of agribusiness value chains as a key ingredient in the industrialization process of the region which depends largely on smallholder agriculture. This is even more so considering the fact that many parts of the region still lack basic infrastructure such as ICT to spur industrialization of the sector by upgrading the agricultural sector and to facilitate market-oriented production. The study’s findings as well as in a number of baseline surveys in the region, notably, Green Forest Social Investment (GFSI, 2014) show that limited access to basic digital infrastructure such as ICT is major impediment in agricultural transformation from production of agricultural raw materials to processing and market driven agriculture. Furthermore, analysis of agribusiness opportunities, key drivers and challenges, including production conditions, marketing, and institutional support overwhelmingly call for the need to digitally connect agribusiness value chain players together. Also, the study has established that removing principal constraints associated with linkages and networking will enhance competitiveness of agribusiness in global agriculture by the region which incidentally fall within the armpit of effective information management based on production-to-market systems continuum. In developing a digitized value chain, the paper has considered the perspective of smallholder farmers and groups (who are only partially farming for the market) by taking into account the ways they need support in the short to medium-term. Equally critical is the recognition that such support must be self-sustaining and the value chain actors (producers/smallholders, service providers, input suppliers, agricultural processors and marketers, among others) need to be able to manage things for themselves. Key to this approach is the “knowledge of opportunities” concept. In this consideration, it was noted that different agribusiness value chain actors/stakeholders provided information on the various opportunities that they are involved in that exist to support agribusiness and rural development but these are rarely available widely to all the value chain actors. For instance, the study also established that majority of value chain actors are still least informed about access to capital. This is a huge deterrent to agribusiness and yet there are plenty of opportunities for access to such resources. These gaps explains the study’s motivation for digital intervention to upscale uptake of popular agribusiness value chains such as the sunflower model, in which participating value chain actors are digitally networked in an agribusiness framework.

Key words: Agribusiness; value chains; digitalization; Information and communication Technology; and digital networking.

Introduction

Solution to Africa's Rural Poverty and unemployment lies in empowering Smallholder Farmers, Women and Youth to innovate in agribusiness value chains. Empowering Africa's Smallholder Farmers, Women and Youth to innovate in agribusiness value chains is one of the most serious challenges facing the continent today. Although a number of African countries are registering strong economic growth trajectory (African economy is on track to be worth \$3 trillion by 2025 – from the current which is \$1.3 trillion), rural poverty and unemployment, especially among the youth is at crisis level. While countries in the Great Lakes of E. Africa have made great strides in providing access to education, we have not matched this with access to jobs. The regions' youth are better educated than ever before, and with increasing access to internet and mobile connectivity, they are more exposed to access greater opportunities provided that they are up-skilled and tooled appropriately. This will enable our Youth especially, to fit into a world that have opportunities that match their aspiration. Therefore, equipping our Farmers and the Youth with appropriate ICT skills is critical to move African countries from emerging to developed agribusiness agenda and related markets.

The Millennium Development Goals identify young people as among the most vulnerable of the African population upon whom issues such as poverty, hunger, lack of education, maternal mortality, unemployment, and HIV/AIDS have a great impact. These problems are set to rise unless an intervention is made. Sub-Saharan Africa's population is becoming more youthful and this is worrying when an estimated 50 per cent of its youth lack the business and life skills needed to enter a productive economic and social life. We can resolve these challenges, first, by leveraging the multiple opportunities provided by agribusiness value chains. These opportunities can be fostered and expanded through public-private-partnerships related sectors for all categories of farmers, youth, women and marginalized population.

Any solution to the smallholder farmers and youth empowerment issue must include a mechanism that allows farmers and young people to create their own jobs. To catch up with the developed world, Africa countries must grow faster and innovate more aggressively than ever before. In this study, ARDC, in partnership with smallholder farmers association, youth, women associations, private and public sectors, launched e-entrepreneurship in agribusiness value chains in the Great Lakes region in Africa, initially focusing in East Africa. This initiative, which by 2020 aims to empower millions of farmers, young Africans, women and marginalized populations in eleven countries with e-agribusiness and commerce skills aims to create and access sustainable agribusiness sector for productive jobs.

Methods and Procedures

The study employed review of existing theoretical literature, evaluations, economic and sectoral analyses and other evidence (including data sets) from various sources such as agriculture sector programme, formal and informal agribusiness market opportunities, Green Forest Social Investment project baseline survey 2011, among others. Field testing and validation was conducted using from "Informing to Engaging" tool to support multi-actor participation in

agribusiness value chains to assess the contribution of existing and proposed ICT demand driven education and agri-entrepreneurship and business model(s)/interventions on appropriateness of education, sustainable management and utilization of natural resources. The study conducted economic and social capital assessments through focus group discussions, individual interview of key informants and field observations and household surveys to determine smallholder farmer attitudes, gender parity and challenges in selected interventions. A costs and benefits analysis from existing and proposed agri-entrepreneurship in terms of providing food security, nutrition and resilience for smallholder farmers was also conducted.

A capacity needs assessment was done after designing an appropriate tool that was to capture the required data. A stratified random technique was applied in selecting the smallholders and other beneficiary household's interviews.

Results and Discussions

The study was based on a case study of development-oriented assistance to focus on how to engage less commercially-oriented smallholder producers in Western Kenya and to address inclusivity, engaged actors in enterprise development that targets vulnerable, lower-resource households to design how they can meaningfully be involved to benefit. In this regard, the study has shown that majority of agribusiness value chains are buyer-driven; the ultimate buyers are large processors, exporters and retailers who owing to their knowledge and information networking advantage unduly exploit the actors in the lower end of the agribusiness value chain. As a result of our agribusiness digital network initiative, many organizations are currently restructuring and re-orienting its economic and social development programmes to:

- Generate sufficient information to identify the main opportunities and bottlenecks of agribusiness and renewable natural resource value chains within the Great Lakes region;
- Assessing whether development of selected value chains could bring about economic empowerment for a critical mass of people reflected, in increased income, and if so,
- Build a business case to inform a five-year development programme based on agribusiness and effective utilisation of resources to create a competitive advantage that would provide a lower product cost and improved profit margin.

The study has built a good understanding of the constraints associated with poor information management and lack of knowledge of opportunities for the selected agribusiness value chains to enable the mapping of possible interventions. Consequently, the study proceeded to interrogate key factors necessary to be considered in the development of smallholder-based agribusiness value chain actors. This approach involving smallholder producers who are the majority in this region is often linked with the creation of multi-actor 'innovation' platforms as illustrated in Figure 1 or inclusion of a participatory market chain approach in which representatives of the various stages in a value chain are invited to discuss the challenges that each face and to come up with ways in which these could be reduced. Such platforms of approaches are facilitated by concerned organisations and serve to create trust, improve

communication and collaboration among the value chain actors so that they can jointly identify, analyse and exploit new market activities.

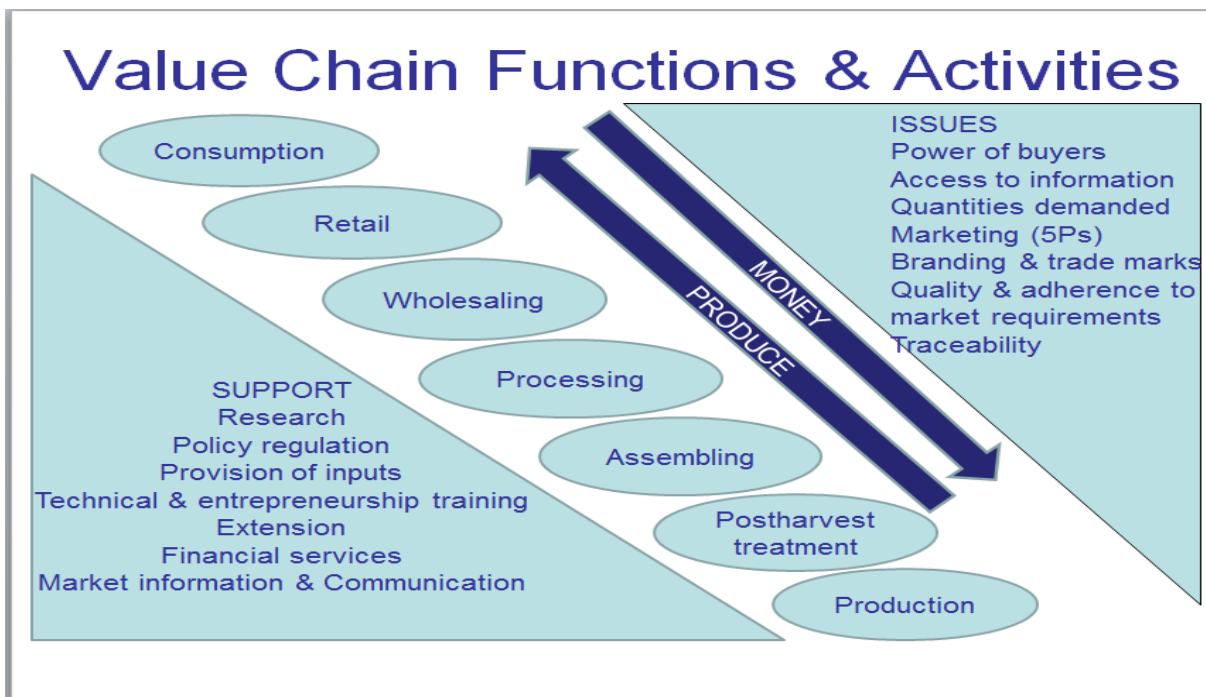


Figure 1: Overview of agribusiness value chain functions, activities and issues. Source: GFSI, 2014.

The specific findings are presented and discussed under nine different but related themes as follows: (i) Effects of ICT in facilitating the development of agribusiness value chains;(ii) Information and communication infrastructure;(iii)Stakeholders’access to information and knowledge; (iv) Capacity building and impacts; (v) Effects of the study on agribusiness value chain Entrepreneurship; (vi) Fostering knowledge of opportunities for agribusiness; (vii) Creating youth and women entrepreneurship platforms; (viii) Strategic partnerships and linkages for production-market continuum; (ix) Access to extension, production and marketing advice.

Effects of ICT in Facilitating the Development of Agribusiness Value Chains

There is no doubt ICT and Internet tools have already had a major impact on economic and social development. Governments, business, civil society and individuals have adopted them extensively. Mobile telephony, Internet access and social media have transformed communications opportunities for individuals, while governments and businesses increasingly rely on the Internet for communications and administration, delivering services and disseminating information. Many African governments have adopted strategies to leverage ICTs for development (ICT4D) and introduced programmes that take advantage of the Internet stimulating access to information through telecentres and mobile applications; promoting

business sectors such as outsourcing and software development; disseminating e-agriculture (M-farm) and e-health information, distance learning and mobile money (M-Pesa, EquiTel, Airtel Money, Orange Pesa etc.); and establishing mechanisms to provide early warning of natural and man-made disasters.

The report of the 10-year Review of the World Summit on the Information Society (June 2015) informs of ICT and Internet applications to new approach to development under the umbrella of “Sustainable Development Goals (SDGs)”. According to WSIS recommendations for ICT applications to realise SDGs, the issue of rurally-relevant applications and content needs to be addressed alongside the issue of connectivity. For rural households to bridge the knowledge divide and access public services, they need to have access to relevant information and applications. WSIS report suggests that demand for content and communication could drive ICT adoption to relevance and sustainability for rural communities. Finally, in terms of connecting rural communities, more public-private partnerships should be formed as per the conceptual framework illustrated in Figure 2.

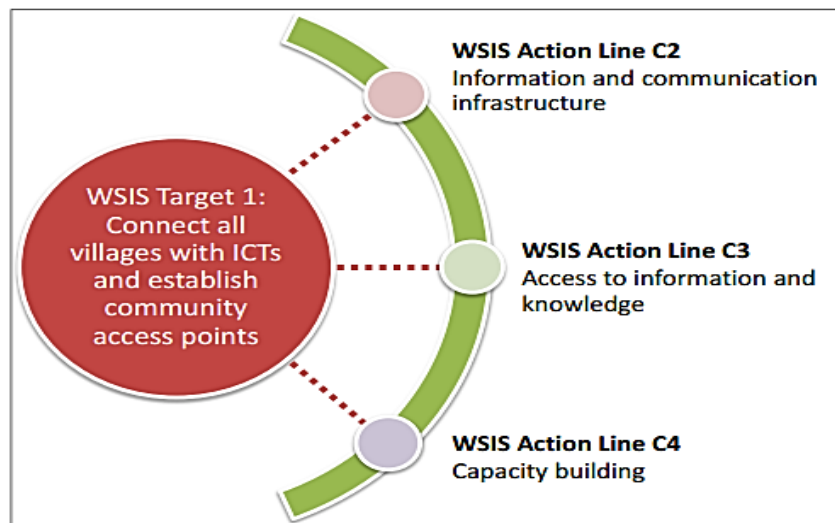


Figure 2: Conceptual Framework Adapted from WSIS, 2015

Information and Communication Infrastructure

The context of this study with respect to WSIS: this study resonates with WSIS highlights that “Infrastructure is central in achieving the goal of digital inclusion, enabling universal, sustainable, ubiquitous and affordable access to ICTs by all to provide sustainable connectivity and access to remote and marginalized areas at national and regional levels.” This action line also calls on governments to provide ICT connectivity not only for agricultural producers but also for schools, libraries, post offices, community centres and other institutions accessible to the public. Further, the study presupposes action line that advocates for strengthening national broadband network infrastructure, which is critical for rolling out high-speed Internet access to rural areas. It also calls for national e-strategies to cater for disadvantaged and vulnerable groups,

who are often found in rural areas, and refers to unused wireless capacity, including satellite, for providing access in those areas.

Stakeholders Access to Information and Knowledge

As articulated above by WSIS, access to information and knowledge is directly linked to Target 1 which states that “Governments, and other stakeholders, should establish sustainable multipurpose community public access points, providing affordable or free-of-charge access for their citizens to the various communication resources, notably the Internet. The study noted that these access points should, to the extent possible, have sufficient capacity to provide assistance to users, in libraries, educational institutions, public administrations, post offices or other public places, with special emphasis on rural and underserved areas International Telecommunication Union (ITU, 2005).

Capacity Building and Impacts

The study shows that capacity building is directly linked to Target 1 of WSIS which states that basic ICT literacy skills are essential for making use of the connectivity supplied to farmers, women, youth and villages via community access. Indeed, the study agrees with WSIS Action line 4 which explicitly refers to the potential of rural digitalization: “Promote e-literacy skills for all ... taking advantage of existing facilities such as libraries, multipurpose community centres, public access points ...” the study also calls for the empowerment of “local communities, especially those in rural and underserved areas, in ICT use and promote the production of useful and socially meaningful content for the benefit of all” as cited by ITU, 2005.

Effects of the Study on Agribusiness Value Chain Entrepreneurship

The study established the significance of leveraging a combination of enabling economic environment and policy framework in Africa to spur competitive market-place offering a dynamic business environment. This was realized the study following the capturing of essential values to foster an inclusive agribusiness value chain development models driven by smallholders. To this end, the study through ARDC is engaging African entrepreneurs in expanding their footprints in agribusiness opportunities to enable them vie for a share of the growing continents’ and the world’s consumer market for agribusiness commodities. Moreover, the study noted that many multinational companies are attracted to African markets because of fast-growing consumer spending on agribusiness products. At the same time, greater purchasing power is also driving economic diversification. Consumer demand for new products and services is creating opportunities across a wide range of agribusiness sector. For instance, as agribusiness products consumers increase, it is expected that public services and infrastructure as well as investment in agribusiness processing industries will accelerate rural development and employment.

Based on the study findings, it is recommending enhancement of knowledge of agribusiness opportunities in East Africa through ICT for investment companies as critical. Data on market sizes and product categories are largely non-existent or provide little information about the market's potential. This challenge will be overcome by the findings of this study to direct ICT investments in rural areas in order to enable companies which otherwise are reluctant to put feet on the ground before the market can fund them. To this end, knowledge of agribusiness opportunities driven by soft skills (e-commerce) and thus proximity to the markets allows companies and consumers to adapt products and marketing strategies to both domestic and international needs.

The study's innovation is modelled on ICT empowerment to entrench best practices in agribusiness value chain. It has demonstrated changes brought about by Africa's Smallholder Farmers, Women and Youth as they interact with private sector, government and the public. This way, agribusiness related entrepreneurship which will impact the lives of people at the bottom of the economic pyramid by being able to employ millions of people through wealth creation is crafted. Further, the study recommends the process of developing open-data portal which crystalizes key data on various agribusiness value chains as well as key public services. This open data platform is truly a game-changer innovation in networking agribusiness value chain actors which is currently being discussed with business community, entrepreneurs, mentors and public policy institutions as identified in table 1. Successful operationalization of this platform will transform agribusiness value chain actors and entrepreneurs as a vehicle for prosperity. This approach will inspire farmers, youth and women to embrace agribusiness-based entrepreneurship. The study strongly believes that one way to get agribusiness value chain actors out of the current challenges is to invent our way out through ICT innovation.

Similarly, it is worthy considering initiating a complementary programme in education and economic opportunities targeting youth, marginalized and under-privileged communities, disenfranchised and economically disadvantaged people using agribusiness value chain window for development. This will have long-term effects in empowering the youth and putting them on a path to self-actualization in business for shared prosperity.

Fostering Knowledge of Opportunities for Agribusiness

The study shows that different agribusiness value chain stakeholders need to be provided with information on the various opportunities that exist to support their active participation in the value chain and rural development. However, these are often inadequate or rarely available. Improved access to electronic communication and the use of social media (such as young farmer groups on Face book) to relay and share information is becoming more common among certain groups especially in Kenya even though many are still not well informed about opportunities.

An information broker or central point could ensure that agribusiness value chain actors and farming communities are aware of all the opportunities available and help them access these. An example is the loans available to Youth and Women's groups for start-up businesses in the Great Lakes countries. The take-up by women's groups and youth funds in the region is still low

compared to other regions. It appears that few women and youth groups are aware of this opportunity or they do not feel confident to get involved in the scheme, perhaps owing to inadequate information or due to low literacy and business skills.

The findings of this study will support plans to build capacity of champions and mentors to encourage women to consider agribusiness investments that have the potential to unleash their potential to make money. The study established that youth and women groups are being educated and networked to financial capital institutions for access to loans for targeted investments in various agribusiness value chains. Also, ARDC as organisation working with agribusiness value chain actors is well placed to broker information on agribusiness value chains-related opportunities available and lobby government ministries, the private sectors, NGOs and development agencies and projects to ensure that their activities are extended to these targeted agribusiness actors. Such a role could support a more holistic approach to agribusiness.

Table 1: Suggested linkages for proposed agribusiness value chains in the Great Lakes

Value Chain	Possible Traders	Possible Processors	Training and Capacity Building
Sunflower	BIDCO Arkay Ltd Western Fresh Ltd Golgotha Oil Press	BIDCO Arkay Ltd Western Fresh Ltd Golgotha Oil Press	Western Fresh Ltd Agricultural Support &Development Programme- Homa Bay Crop Nuts
Soya Beans	Migori Soya and Passion Fruit Association (MISOPA)	Promasidor Ltd SoyAfric KabansoraMillers UngaMillers EdomNutrition, Kisumu	MISOPA ASDSP Homa Bay Kenya Agricultural and LivestockResearchOrganization -Kisii Centre ICRISAT CropNuts
Sorghum (Gadam)	Smart Logistics East African Malting Ltd	East African Malting Ltd Keroche Brewers	Community Action for Rural Development; ICRISAT N2Africa
Cassava (dried chunks)	Check Homa Bay	Edom Nutrition, Kisumu Kabansora Millers	Farm Concern International; Kenya Agricultural Productivity and Agribusiness Projects Kenya Agricultural and LivestockResearchOrganization
Tomatoes	Contact M-Farm Contact Nyandiwaagrovet Wholesalers, Kisii		Kenya Agricultural Value Chain Enterprises
Watermelon	Caroline Ochieng, Kisii 0713432344	Fresh an Juici Ltd, Kisumu	Kenya Agricultural Value Chain Enterprises
Onions	Contact M-Farm		Kenya Agricultural Value Chain Enterprises

Creating Youth and Women Entrepreneurship Platforms

The study designed entrepreneurship platform which operates and is guided by the following principles: The extent to which smallholder-farmers, youth and women can be trained to use value chain data to sharpen their innovation skills and develop products that solve local challenges; key factors for agribusiness entrepreneurs are a great idea with clear market orientation for the people and talents to realize it, the infrastructure and technology to base their

solution and services as well as a dynamic and powerful business network that is willing to invest in the entrepreneurs; that leading entrepreneurs, top scholars, investors, ventures capitalists, executives of multi-national companies, among others with their wide network of partners, will provide a number of business models to support dialogue with potential strategic partners; and partnering with leading entrepreneurs, top scholars, investors, ventures capitalists, executives of multi-national companies and others will transform processes such as smallholder agriculture to market oriented agriculture through agribusiness as part of effort to improve income, environment conservation, among others.

Strategic Partnerships and Linkages for Production-Market Continuum

The study articulated agribusiness-based organisations can provide a conducive entry point for linkage with markets especially those requiring assurances that volumes of commodities required will be supplied in the required qualities. The legal but personality of the organisation provides extra security to the agribusiness actors that their interest will be secured either between them and their organisation or with any other third party that the organisation may choose to deal with on their behalf. To initiate well-established agribusiness networking and facilitation, the study seeks relevant market intelligence for negotiating commodity prices on behalf of the groups. For example, the brewing companies in the region which are seeking to contract farmers for cereals such as sorghum who use farmers' organisation as entry point.

Access to Extension, Production and Marketing Advice

The study identified the need to set up plans to address the current limited access to information on agribusiness value chains, for instance, niche crops, processing techniques and marketing opportunities as a particular problem. Already, some agribusiness actors have access to good information via radio, TV and text messages but many have expressed the need for capacity building and demonstrations to show them the benefits. Some have received training on calculating agribusiness costs and gross margins and this is a priority for further research to establish the needs of stakeholders. It was noted that agribusiness value chain actors have limited experience in collecting and using market information and knowing about market requirements (market intelligence). There are massive needs for capacity building and networking/linking agribusiness actors to the markets. This is likely to have been exacerbated in many parts of the region by poor road infrastructure and attendant services.

Conclusion

The study concludes the key to good practice and sustainable agribusiness value chain development is the availability of information and the willingness of value chain actors to recognise and prioritize their needs, priorities and commitment to innovate. Similarly, there is scarce information related to agribusiness value chain production and marketing channels, particularly, anticipated prices, a fact that should be addressed urgently.

Recommendations

Mainstreaming successful agribusiness value chain models in the region is critical. Such models include but not limited to Sunflower – DrumNet model which operates a programme to improve smallholders’ access to financial services by digitally integrating them into the oil seed value chain; Sorghum - Smart Logistics COBO model which buys sorghum on contract from smallholder farmers and sells to East African Maltings Limited (EAML); and, Cassava and onions – Farm Concern International Model has facilitated farmers to transform their cassava and onion production through the creation of Commercial Villages and has digitally connected these to large scale, industrial buyers. Secondly, the development of farmers' databases and digital connectivity of value chain traders and their phone numbers in major markets, across the region has had significant impact in marketing.

References

- Aker, J.C., 2008. “Does Digital Divide or Provide? The Impact of Cell Phones on Grain Markets in Niger.” BREAD Working Paper No. 177, GiveWell, New York.
- Aksoy, A., and O. Anil. 2011. “Consensus, Institutions, and Supply Response: The Political Economy of Agricultural Reforms in Sub-Saharan Africa.” Policy Economics Working Paper No. 5782, World Bank, Washington.
- Anderson, K., and W. Masters. 2009. “Sub-Saharan Africa and North Africa.” In *Distortions to Agricultural Incentives: A Global Perspective*, edited by K. Anderson. Washington, DC: World Bank.
- Ariga, J., and T.S. Jayne. 2010. “Unlocking the Market: Fertilizer and Maize in Kenya.” In *Millions Fed: Proven Successes in Agricultural Development, Report 14*, edited by D. Spielman and R. Pandya-Lorch. Washington, DC: International Food Policy Research Institute.
- GFSI, 2014. Analysis and Assessment of Potential Value Chains in Gwasssi Division of Suba Sub-County, Homa Bay County, for Green Forest Social Investment (GFSI)
- ITU, (2015) *Internet of Things*, Report
- ITU, (2005) *Internet of Things*, Report