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## **Managing Agricultural Commercialization for Inclusive Growth in Sub-Saharan Africa**

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# CONTENTS

<b>Abstract</b>	1
<b>1. Introduction</b>	2
<b>2. Methodology</b>	4
<b>3. Policy and trends in agricultural commercialization in Sub-Saharan Africa</b>	5
3.1 Agricultural commercialization policies/models in the region	5
3.2 Major trends in commercialization of food and non-food agriculture in SSA	8
<b>4. Successes and failures of agricultural commercialization in SSA</b>	10
4.1 Factors hindering successful agricultural commercialization in SSA	11
(i) Socio-economic characteristics of smallholder producers	11
(ii) Lack of access to sufficient agricultural support services	12
(iii) Transaction costs and other institutional factors	14
(iv) Insufficient and/or missing infrastructure	16
(v) Effect of climate change-induced risks and uncertainty	18
4.2 Factors facilitating successful agricultural commercialization in SSA	19
(i) Farmer organization, collective action and innovation	19
(ii) Information and direct access to markets	21
(iii) Finance and credit	22
<b>5. Synthesis of policy issues</b>	23
(i) Public support for inclusive agricultural commercialization	24
(ii) Land tenure and property rights	25
(iii) Policy and program coordination	25
(iv) Enforcement	26
<b>6. A new model of smallholder agricultural commercialization in Africa</b>	27
<b>7. Funds and farms: likely implications of foreign land purchases on SSA smallholder farmers</b>	30
<b>8. Conclusions and future research</b>	31
<b>References</b>	33

## ABSTRACT

The commercialization of smallholder agriculture has been considered a key strategy for sustainably reducing poverty and for achieving equitable growth in many countries in Sub-Saharan Africa. The level of success of the strategy in different countries in the region has however been varied with some countries exhibiting far greater success than others. The key underlying factors influencing success and failure of the commercialization process all point towards the need for strong public and private policies and initiatives to support impoverished smallholder farmers in the agricultural commercialization process. In addition, in order for farmers to fully benefit from both public and private investments in agricultural commercialization, there is need for the development of new market models that will ensure that smallholder producers who are disadvantaged by pre-existing social, economic, environmental and political conditions are included in high value commercial markets, without jeopardizing their food security and livelihoods. Key words: agricultural commercialization, Sub-Saharan Africa, systematic review, smallholder farmers

Agricultural commercialization refers to the process in which farmers increase their productivity by producing more output per unit of land (and labour), produce greater surpluses which can be sold in the market and thus increase their market participation with a beneficial outcome of higher incomes and living standards (Jayne, Haggblade, Minot, and Rashid, 2011). Several factors are needed to bring about commercialization namely, better seeds, better animals breeds, better practices, fertilisers, and knowledge. In essence the process is about achieving greater output and agricultural growth which implies a process that links a large proportion of the rural farming population to commercial high value chains (Jayne & Muyanga, 2011). The agricultural growth brought about by commercialization can only be useful in reducing rural poverty if the process of commercialization is inclusive and broad based with as many smallholder families benefitting from the commercialization process.

This process involves gradual replacement of integrated farming systems by specialized enterprises such as crops and livestock (Pingali & Rosegrant, 1995); and in which the largely poor rural masses are assisted to transition from subsistence farming to producing for the market. This is regardless of the scale of production (small, medium or large farmers); and regardless of the crops (food crops, cash crops). Hence implying that any type of farm (family farm or commercial farms) when they produce certain crops specifically for the market can be considered commercialized (Poulton et al., 2008). The definition that focuses on “transition from subsistence farming...” suggests that commercialization focuses on the “peasantry” or smallholder farmers that are still largely autarkic. Such farmers participate in agricultural markets mostly as buyers because of, among other things, the endemic problems of market failure (Okello, 2005; Burke, 2009). Indeed, Barrett (2008) and Jayne et al. (2010) suggest that most smallholder farmers fail to participate in markets as sellers because they often have no or too little surpluses to sell. The lack of marketable surplus results from lack or inadequate use of improved techniques of production (i.e., lack of investment) which eventually results, again, in low yields—a situation described in the literature as low equilibrium poverty trap (Barrett, 2008).

Agricultural commercialization can occur on either the output or input side (Von Braun & Kennedy, 1994). On the output side, a farming household can become commercialized by increasing their marketed produce. On the input side, they can become more commercial by increasing their usage of purchased agricultural inputs. Many subsistence farmers use very little purchased inputs but as they gradually shift from subsistence farming towards market orientation, they start to increase their investment. Hence, smallholder commercialization also increases the backward and forward linkages of the rural economy with other sectors within the economy. Furthermore, commercialization is not only of cash crops (e.g cotton, tobacco, paprika) but also refers to the increased production and marketing for profit of crops that are traditionally grown for home consumption such as food crops (e.g maize, rice), grain legumes (e.g beans, groundnuts) as well as vegetables and fruits. In addition, the commercialization of livestock and their products that is reared, produced and sold in different channels (e.g. live animals, meat, milk, poultry, eggs, wool, and feathers) by smallholder producers also provides cash income.

The argument is therefore consistently presented that the process of agricultural commercialization, if implemented on a broad scale, is a key strategy for sustainably reducing poverty and for achieving inclusive growth. Inclusive growth is characterised as broad-based economic growth whose process embraces those that are ordinarily left out of economic growth and whose outcomes also benefit many people (Klasen, 2010). The key dimension of the commercialization process is therefore the broad-based all-inclusive approach which quite often requires state-led initiatives and investments (Eicher and Kupfuma, 1998).

Why is broad-based agricultural commercialization seen as an important conduit for poverty reduction? This is because it is believed that the process of agricultural commercialization is accompanied by economic growth; increased incomes; urbanization; increased welfare; greater linkages between farmers and service providers; and the gradual withdrawal of labour from the agricultural sector. Equitable growth, however, is difficult to achieve (Mellor, 1999; Jayne & Muyanga, 2011). This is because due to resource constraints and low productivity many rural producers mainly produce for subsistence consumption, with only a minority marketing their surplus production. This entails that policies and strategies that aim to increase market incentives as a means of achieving agricultural commercialization exclude the majority of rural smallholder producers.

With the majority of the population in Sub-Saharan Africa engaged in primarily agricultural production, it is commonly argued that there is no viable alternative to smallholder-led growth (Jayne & Muyanga, 2011). This is because it is the only growth pathway that has the potential to engage a large mass of the improvised rural population and reduce poverty through broad based growth. It is for this reason that smallholder agricultural commercialization has been highly promoted, documented and researched. Agricultural commercialization has been promoted with varied levels of success in the region. It is behind this backdrop that this paper sets out to consolidate the large volumes of work on agricultural commercialization in order to provide a concise source for policymakers, practitioners, and researchers to use in policy formulation, program development and implementation and research agenda setting. Specifically the paper sets out to:

- translate and consolidate both published and unpublished work on agricultural commercialization into a condensed and coherent story;
- consolidate the lessons from policy experiences pertaining to agricultural commercialization;
- propose a new market model for achieving inclusive sustainable agricultural commercialization.

The outline of the paper is as follows. The introductory section is followed by a brief methodology section. An overview of agricultural commercialization policies in the region and the underlying political and philosophical drivers follows the methodology section with the aim of providing a historical perspective of the evolution of agricultural commercialization policymaking. This is followed by a section that provides insights into the trends and changes in commercialization of food and non-food agriculture in the region. Subsequently a summary of the factors hindering and enhancing the failure and success of smallholder commercialization in SSA is provided. A section on the synthesis of emerging policy issues precedes the proposal of a new market model, conclusions and future areas of research.

This paper draws on studies (published and unpublished) in Eastern & Central Africa as well as Southern Africa and thus provides a wide geographical coverage and dynamism of typical SSA countries whose agriculture is mainly smallholder driven such as Malawi and Mozambique. In addition the review covers countries in SSA whose agricultural sector is more a mixture of highly commercialized value chains and agricultural production with smallholder farmers—e.g. South Africa, Kenya, Zambia, and Botswana. Furthermore, the studies included capture the diversity of the region under study by including studies on the commercialization of agricultural produce from different farming systems such as maize-based, rice-based, cassava-based, horticulture-based as well as banana-based farming systems. The geographical coverage as well as the different farming systems covered in this review provide great insight into the challenges as well as opportunities and policy environments facing the vast majority of smallholder producers in SSA that are in different stages of commercializing their agricultural enterprise.

The systematic review of the literature consolidated various works on agricultural commercialization in Africa. A review protocol was developed prior to commencing the review in order to set out the methods to be used for the study. It is based on a protocol as recommended by the CRD (2009). The review protocol was used to determine the studies to be included in the review; the type of information to extract from the paper; and the method of synthesizing study findings and the information that was extracted. The studies that were included in the systemic review included published literature and grey literature such as academic theses, conference proceedings and project reports. Academic theses included were from different universities in Southern Africa including the University of Pretoria, University of Malawi, University of Fort Hare, University of Stellenbosch and the University of KwaZulu-Natal.

In general agricultural commercialization policies are closely related to economic and political organization of the region with the policies evolving differently during the colonial era, the post-colonial era, the structural adjustment era and in more recent times the post-structural adjustment era (liberalization era). The trends in commercialization of the food and non-food agricultural sectors have advanced in line with global trade movements and the growth of multi-national agribusinesses. Both the policies in agricultural commercialization and the trends are largely driven by exogenous (international and global) forces with very few of the countries in the region spearheading the process by local initiatives.

### 3.1 Agricultural commercialization policies/models in the region

Discussions on the policies driving agricultural commercialization in African countries can be done by focussing on their objectives, policy and legal frameworks, experience and impact on the smallholder farmers. Table 1 provides some examples of policies implemented in support of commercialization in some countries in Southern and Eastern Africa. A common motivation behind the implementation of the policies discussed here is to improve the availability of and access to agricultural credit and seeds for smallholder farmers; increasing access to agricultural advisory services and improved technology. Improving the legal framework in order to create a better enabling environment is also an important policy objective. In recent years, Southern African countries, through the Common Market in Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC), instituted elimination of export bans and import tariffs on trade. This has enhanced regional and domestic marketing systems and promoted access to marketing for smallholder farmers (Delgado, 1997).

Table 1  
Agricultural Commercialization Policies in Southern African Countries ▼

Country	Policy and Rationale objective	Policy Framework	Legal regulatory framework	Policy experience	Impact on Smallholder farmers
Zambia	Agricultural Market Reforms, 1991 Pre-1991 agricultural policies believed to entail too much government control & crowding out of private players. Subsidies had perverse incentives for farmers, and huge fiscal burden on government budget	Role of government reduced to policy, legislation, and market support service and food security. Agribusiness forums, commodity exchanges were established. Several agricultural parastatals were privatised	Several acts passed since 1991 such as: Privatisation Act 1992, Food Reserve Act and Agricultural Credit Act of 1995. Redressal of cases pertaining to agriculture in courts is, however, known to be slow and lengthy.	Limited storage facilities, poor market infrastructure & information, financial constraints of govt & domestic private entities, and weak and lengthy judicial process have undermined the full benefits of these reforms.	The main beneficiaries of these reforms have been export crop producers and corporate agribusinesses. Elimination of price controls and subsidies have negatively affected small farmers, especially those located in remote areas, due to withdrawal of transport subsidies.
Malawi	Agricultural Input Subsidy Policy	<ul style="list-style-type: none"> <li>• Centralisation of fertiliser procurement and distribution</li> <li>• Creation of a national network of agro-service centres</li> <li>• Creation of national seed services</li> </ul>			
Kenya	Smallholder Horticulture Marketing Programme, 2007 Income augmentation of smallholder farmers in areas with medium/high potential for horticultural development; Reduced cost to consumers and enhanced choice and quality of horticultural items consumed.	To provide infra-structural support & know-how in producing, processing & marketing of hort. output; policy documents do not clearly outline specific strategies and policy instruments in use.	Government of Kenya & International Fund for Agriculture are the lead implementing bodies and responsible for funding the programme. No act/bill or other legal support to policy.	Initial stages developed on pilot basis, focusing on three horticultural crops having greatest potential for poverty reduction and livelihoods. Policy has been demand-driven largely, rather than attempting radical alterations to structure, organisation and trading practices.	

Country	Policy and Rationale objective	Policy Framework	Legal regulatory framework	Policy experience	Impact on Smallholder farmers
Namibia	Taxation on Commercial Agricultural Land, 1991Historically skewed land distribution leading from colonisation and distorted land tenure systems; and Need for re-distribution/diversification of ownership & poverty reduction through de-congestion of communal land.	Scientific methods of land valuation; and Streamlined procedure for appeals pertaining to land disputes and valuations via courts or renegotiation.	Agricultural (Commercial) Land Reform Act, 1995; and Land Valuation and Taxation Regulations Act, 2001	Strong political prevailed across legislature, judiciary and executives; No major political backlash due to gradual rollout; & Sound technical assistance for valuation crucial; further capacity-building required.	In theory, land redistribution in favour of landless/smallholder farmers will increase equity and efficiency of land use. Empirical evidence testing impact of re-distribution on smallholder farmers unavailable.
Tanzania	Agricultural & Livestock Policy, 1997. The 1983 policy by the same name was believed to have fallen irrelevant to the growing food security and technological needs of modern day agriculture. Erstwhile policies considered to be inward-looking with need to tap export markets in agriculture.	Framework mainly consists of research and extension service; mechanisation; irrigation development; agricultural information and marketing of inputs and outputs; natural resource mgmt.	Specific policies pertaining to support the particular policy are not known from available literature. However, several divestiture acts were passed for privatisation of parastatals.	Available literature does not outline policy lessons and beneficiaries. Ex-ante, smallholders are expected to gain from research and extension facilities, as also enhanced access to markets. However, in light of missing literature on safeguards against price volatility and pre-/post- policy cost of production, the net gain to smallholder farmers (if any) is difficult to gauge.	

Other good examples of agricultural commercialization models include cassava commercialization in Malawi, Mozambique and Zambia (Chitundu et al., 2011) and the poultry farming in Mozambique and dairy farming in Kenya and Malawi. Lessons learned from these models are that the success of agricultural commercialization depends on a wide range of policies that should be present and well-coordinated. These policies should address issues of land, technological development, promoting research and development, policies in health and disease control, road and infrastructure development, agricultural extension and private sector linkages. Some studies also reveal that improved agribusiness and capacity building are also critical for improved agricultural commercialization.

As observed from Table 1, the implementation of policies that drives agricultural commercialization would require a multi-sectoral approach where the public sector, international development community and the private sector complement each other. However, the involvement of government should only complement the private sector participation in the area of infrastructure development, research and development and formulation of policy and regulatory frameworks to assist smallholders in developing market-oriented agriculture that is economically sustainable (Omiti et al., 2006).

### 3.2 Major trends in commercialization of food and non-food agriculture in SSA

Important changes were observed in agri-food systems in the region. Food markets have been dramatically transformed in some countries such as Madagascar, Kenya, Tanzania, Malawi, Zambia, and Zimbabwe creating many commercial opportunities in local markets. Export markets are much more liberalized than they were in the 1970s, but a number of countries continue to control exports through state-owned enterprises. A major trend observed in food markets in the region since the mid-1990's has been the mushrooming of supermarkets which have become an important and lucrative market for smallholder producers. With South Africa, Kenya and Nigeria being the first three countries in Africa where the trend was largely observed and where it was spearheaded by a rise in urbanization, increased wealth and income and changing consumer demands (Weatherspoon & Reardon, 2003). Other countries that followed were Zimbabwe, Zambia, Namibia, Botswana, Swaziland, Madagascar, Mauritius, Angola, Mozambique, Uganda, Tanzania and Uganda. The rise of supermarkets in these countries was mainly the result of foreign direct investment (FDI) with South African supermarket chain stores (Shoprite/Checkers, Pick 'n Pay, Spar, Woolworths) dominating formal food retailing in the region with investments in other 13 countries in the region. In East Africa, Kenyan domestic supermarkets are also rapidly expanding and slowly displacing traditional food markets.

Analysis of the trends in supermarkets and other formal food retailing is essential and has important policy implications because supermarkets have taken over large segments of potentially profitable food retail markets which are also the targets of smallholder producers (Weatherspoon & Reardon, 2003). As such the impacts of the rise of supermarkets in the region have been widely documented. Emongor and Kirsten (2009) have demonstrated that supermarkets have offered ready markets for domestically produced output and this has led to increased output and income.

Also, the participation of both large-scale and some small-scale farmers in the supermarket supply chain in Botswana and Zambia contributed positively to smallholders farmer's incomes with smallholder producers who supply supermarkets having higher incomes than those who supply traditional markets. In addition, Omiti et al., (2006) indicate that rising trends in urbanization, emergence of supermarkets and changing consumer preferences offer potentially high-value niche markets for smallholder farmers of developing economies.

Despite the growing numbers of supermarkets in the region and the transformation of urban food retailing, market share is still relatively low with the majority of consumers in the region buying from traditional market outlets. It is mainly in South Africa where supermarkets have expanded to take over more than half of the national food retailing with supermarkets in South Africa having a 55% share of national food retail (South Africa has over 70,000 supermarkets). Other countries in the region such as Nigeria and Kenya exhibit far lower market shares of supermarkets at 5% and 10%, respectively (Tschirley, 2007; Traill, 2006). This hence entails that supermarkets largely remain a niche market for smallholder producers.

Apart from changes in food markets, there have also been changes in the non-food sector with a good example being Kenya with its non-traditional exports (which include both fresh export vegetables and cut flowers) being cited as a development "success story" (Minot & Ngigi, 2004; Weinberger & Lumpkin, 2007). Kenya is currently the biggest and most dynamic horticultural exporter in Africa (Njoka, 2008) with nearly all the exports destined for Europe. Between 2000 and 2007, the industry recorded rapid growth in exports to Europe after a brief decline during the 2000-2002 period. The brief decline was attributed mostly to food safety standards (Okello, 2011).

Although large commercial farms account for the bulk of export volumes (especially when flowers are considered), some also contract with smallholder groups to supplement their supplies of fresh fruits and vegetables (Jaffee, 2003). Such arrangements have facilitated smallholder farmer linkage to high-value European markets (Dolan, 2005; McCulloch & Ota, 2002; Minot & Ngigi, 2004). The capital intensive nature and the high setup costs in flower production have however limited the participation of smallholder farmers in flower business. Hence the majority of such smallholder farmers participate in the production of fresh fruits and vegetables. The fresh export horticulture accounts for only about 2% of the total horticulture production in Kenya. However, it employs thousands of smallholder farmers at the production level, and many more poor households at other points along the value chain (McCulloch & Ota, 2002; Okello, 2010; Friedberg & Goldstein, 2011). The exact number of smallholder farmers directly engaged in fresh fruit and export vegetable (FFEV) production is unknown. In general, the size structure of Kenyan FFEV production has varied considerably over the years. There were only a few hundreds of smallholders in the early 1970s but by the mid-1980s more than 15,000 smallholder farmers were producing FFEV (Okello, 2010). At the same time, the production base expanded as medium and large scale farms entered production, especially as the demand of the export started changing. Jaffee (1995) however estimated that only about 10% of the production of these products emanated from large scale estate farms by mid 1980s.

The organization of the production structure changed further during the 1990s with smallholder participation in production declining significantly between the early 1990s to late 1990s and even further in the new decade. By the early 2000s, smallholders accounted for approximately one-quarter of the export fruit and vegetable production (Dolan and Humphrey, 2000; Dolan & Sutherland, 2002). More recent estimates indicate that the number of smallholder farmers in the FFEV industry is 500,000 (Jaffee et al, 2011). There have also been changes across individual products destined for different export markets. For instance, the share of smallholders in the production of beans—the major fresh export vegetable—fell from more than 60% in the 1980s to 27% in the late 2000s. However, smallholder production of snowpea has increased significantly since the mid 1990s (Jaffee, 2003). Production and export of fresh fruits notably passion fruit and avocados also plummeted in the mid to late 2000s mainly because of crop disease, especially in passion fruit.

## 4

### SUCCESSSES AND FAILURES OF AGRICULTURAL COMMERCIALIZATION IN SSA

Scepticism surrounds the process of agricultural commercialization in Sub-Saharan Africa (World Bank, 2008). This is because the evidence that exists is at times conflicting with models for agricultural commercialization that have succeeded greatly in certain countries, and in some locations failing dismally. From the conflicting evidence it is however possible to clearly discern the overarching factors hindering and enhancing the success of agricultural commercialization. Throughout the evidence and experiences in Africa, successes are achieved when smallholder farmers are provided with comprehensive support. Comprehensive support from either government or private sector that leads to success is one in which smallholders are assisted to overcome multiple market and institutional failures and many constraints that prevent these farmers from participating in market opportunities within the entire agricultural value chain. Experiences from the region further show that not all successful smallholder commercialization efforts are sustainable over the long term. It is only those efforts in which governments or private promoters are able to build the capacity of a group of smallholder farmers to manage their enterprise from a business perspective that success is sustainable. In many instances this is only achieved through separation of the management of the business enterprise from the farmer membership. Consequently repeated failure to sustainably commercialize smallholder agriculture in the region has been caused by the lack of consistent and comprehensive support to assist smallholder farmers to overcome pre-existing bottlenecks along the agricultural value chain.

Due to the diversity of the region, successful models of agricultural commercialization cannot be simply replicated from one country or location to another. However it is clear from the evidence that success or failure of smallholder agricultural commercialization depend to a large extent on two interlinked factors. First, the ability of governments and private promoters to adapt commercialization models to suit specific social, economic, environmental and geographic conditions. This requires great understanding of the complexities of the specific location or country in which the model is being promoted.

Second, the extent to which support is provided to smallholder farmers to overcome pre-existing country and/or area specific bottlenecks along the agricultural value chain. The level to which governments and private promoters are able to do both these things determines the success and/or failure of endeavours to commercialize smallholder agriculture in Sub-Saharan Africa.

#### 4.1 Factors hindering successful agricultural commercialization in SSA

There are different factors that hinder the successful participation of smallholder farmers in commercialized agricultural markets and to transform traditional farming systems into commercialized agriculture. The different factors are categorized into four key areas which include socio-economic characteristics of the smallholder producers, lack of access to sufficient agricultural support services, transaction costs and institutional factors as well as lack of appropriate agricultural and developmental infrastructure.

##### i. Socio-economic characteristics of smallholder producers

Sub-Saharan Africa is characterised by smallholder subsistence farmers who have small land holding sizes (less than 0.5 hectares per households) which is cultivated continually under rain-fed farming with little or no irrigation. In addition farmers in the region often recycle seed and add very little additional nutrients. Furthermore smallholder producers are often faced with difficult agro-climatic and political conditions (Dorward & Kydd, 2002). The combination of these characteristics of smallholder farmers in SSA leads to low productive farming which is worsened by low and declining soil fertility, pest and disease outbreaks and land fragmentation. Evidence demonstrates that the socio-economic characteristics of smallholder producers are an important determinant of the success of commercialization. In many instances the household and farming systems characteristic of the majority of rural households in SSA are deterrents to successful market participation. Household characteristics such as the size of a household, educational and literacy levels, age and gender of the household head are found to determine a household's decision to participate in commercial markets as well as in determining the type of crops that households commercialize. For example, poor education and low literacy levels result in poor networking, poor negotiation and bargaining as well as poor management of enterprises. The gender of the household head also determines the types of crops that are marketed as well as the extent of marketing with female-headed households mostly marketing crops that are traditionally cultivated for home consumption such as maize, millet grain legumes (groundnuts, pigeon peas and beans); and roots and tubers (cassava, arrow roots and sweet potatoes). Crops that are mainly produced for the market (tobacco, paprika and cotton) are controlled by the male member of the household. In addition as any of the food crops listed above becomes commercialised, their production and marketing also becomes controlled by the male household member. Labour and resource constraints prevent female headed households from taking advantage of market incentives. For example in Malawi, the production of seed maize (open pollinated varieties) is a lucrative business as certified seed maize has a guaranteed and high value market. However the production of seed maize is governed by stringent requirements pertaining to farm isolation distances as well as management practices. Many female small scale farmers (as well as low income male farmers) are unable to qualify for seed maize production as they lack the land to meet the isolation distance requirements and the resources to hire additional labour to maintain the recommended management practices. As such the production and marketing of seed maize has become the forte of a few fairly well to do semi-commercial medium scale farmers.

Other household characteristics and endowments also determine the specific markets that a household participates in as well as the extent to which they commercialize their enterprises. This includes the remoteness of a household from markets, the quality of the road networks and the ownership of transport means such as ownership of a push bicycle, ox or donkey drawn cart. Hence, households that are in isolated areas; although having some of the needed assets to produce for the market; are often hindered from effectively participating in a market due to high transport costs. Households that own transport means (such as push bicycles and ox-carts) are better enabled to access more lucrative markets. However, participation using such means of transport is often unsustainable and inconsistent due to the drudgery of transporting goods and/or the difficulties of appropriate transport logistics.

Apart from household characteristics, evidence also shows that the farming characteristics of a producer determine to a large extent the level of participation and success in agricultural markets. For example the household asset base is an important factor with poorer households less likely to participate in high value agricultural markets or less likely to succeed in their attempts to become commercialized. Other farming characteristics such as the lack of access to sufficient land and water as well as lack of ownership of production equipment such as low cost mechanization equipment and draft power are also key factors that hinder individual producers' ability to enter a market successfully. This is the case as producers' lack of access to sufficient natural and physical capital makes it difficult to expand or increase production in order to meet market demand. In addition the smallness of the rural commercial endeavours make it difficult for producers to continue when faced with obstacles such as low prices and/or delays in payments. Contrary to these findings, many other studies demonstrated that increased access to land was not necessarily a pre-condition for a household to succeed commercially. Entrepreneurial skills and the ability to adapt to changing market dynamics were found to be a far greater precursor to success in market participation.

The implications of these findings are that in Sub-Saharan Africa there are pre-existing socio-economic bottlenecks that prevent rural smallholder producers from effectively and efficiently commercializing their agricultural enterprises. This entails that providing market incentives (such as higher prices through government pricing policies) is not in itself sufficient to ensure the inclusion of smallholder rural producers in commercialized agricultural markets. Government as well as private sector initiatives to increase market incentives for agricultural commercialization in Sub-Saharan Africa can only be inclusive if rural smallholder producers are provided with additional support services (see section ii) that go beyond the market.

## ii. Lack of access to sufficient agricultural support services

As stated earlier the majority of farmers in Sub-Saharan Africa live below the poverty line and are characterized by low physical and natural resources; poor technical skills and low managerial capacity as well as inadequate access to markets and infrastructure. As a result of these characteristics, public agricultural support services are essential in order to make it possible for smallholder farmers to attempt to enter lucrative agricultural commercial markets. Apart from the pre-existing socio-economic characteristics of rural producers in Sub-Saharan Africa such as deep entrenched poverty, the lack of access to agricultural support services is a key obstacle to successful and inclusive commercialization of smallholder agriculture.

In many instances smallholder farmers that have the potential, ability and willingness to commercialize their farming enterprises, are hampered by the lack of access to market information, agricultural credit, adequate and timely agricultural advisory services (production information) and the lack of access to input markets for high yielding seeds and inorganic fertilizer. In the past, the provision of inputs in many Sub-Saharan African countries was a function of public institutions such as the Agricultural Development and Marketing Cooperation (ADMARC) of Malawi and the National Agricultural Marketing Board (NAMBOARD) in Zambia. But with the dawn of liberalization, these functions were entrusted to the private sector to the disadvantage of small scale producers in very remote areas where it is not profitable for the private sector. In recent years, the realization that complete liberalization may not benefit all members of society has led to the re-introduction of the 'social' function of government marketing boards. This has increased both the availability and accessibility of inorganic fertilizer to many rural smallholder farmers in remote areas. The provision of agricultural support services goes far to create linkages between smallholders with markets, input and output dealers and agribusinesses.

Farmers with sufficient finances (either larger farmers or groups of farmers organized as cooperatives) are able in many instances to access inputs as well as to pay for agricultural advisory services and market information. Therefore the lack of agricultural support services is mainly a hindrance to inclusive agricultural commercialization for small individual farmers. These rural producers are unable to access basic agricultural support services, that may be available on the market for a fee and which other types of farmers (who are better off) are able to access. In addition access to credit and financial services are limited for the majority of rural smallholder producers in SSA due to the lack of secure land tenure. This is because the majority of producers operate on customary freehold/untitled land which cannot be used as collateral to secure credit facilities. Furthermore existing financial services are more expensive in Sub-Saharan Africa due to the lack of competition arising from limited service providers.

There is therefore a call for reforms in public agricultural support services so that smallholder farmers can become fully commercialized. This includes recommendations to make agricultural advisory support services more inclusive and responsive so that farmers are involved intellectually; putting in place innovative financing that takes into account the needs of resource poor farmers who in many instances have no titled land or other forms of collateral; reorganizing land reform initiatives to ensure efficient re-allocation of land and effective identification of beneficiaries; putting in place structures to build the capacity of smallholder farmers to add value to their products as well as to be able to take advantage of economies of scale thus reducing transaction costs and enabling them to enter high value agricultural markets.

Given that the delivery of support services to small-scale, very remote farmers by the private sector in most African countries is likely not to happen due to economies of scale and general profitability, it is most likely that agricultural support services will initially still be provided by the state. The reality is however that in many countries in the region, state failure is rampant and deep-rooted (Williams, 2010). State failure entails that the government is unable to provide public goods and services to some of the population. This has many consequences including security threats and domestic unrest which results in poverty, disruption of economic activities and further inability by governments to provide support services and public goods and services. The net result of all this is that farmers are not receiving any support services or hardly have access to finance, advice and inputs. There is thus an important need to address the delivery failure of the State in most countries.

For this reason input fertilizer subsidies and state enterprises that monopolize fertilizer distribution, once common, are now rare, but fertilizer markets continue to be subject to targeted distribution programs, indirect subsidies, and other forms of intervention (Kherallah et al., 2002). Governments in the region have recently invested heavily in input subsidy programs as a way to increase smallholder productivity in countries like Malawi, Zambia, Tanzania and Kenya. Jayne et al., (2011) found that input fertilizer subsidy programmes combined with good climatic conditions contributed to bumper maize harvests in Malawi and Zambia in recent years. However, the programmes have been found to be very costly, having taken up to nearly 45% and 70% of the Ministry of Agriculture's budget in Zambia and Malawi respectively, and hence potentially crowding out other public investments that may produce greater long-term benefits. Weighing the costs and benefits relative to other investments in support of smallholder welfare, Jayne et al. (2011) argues that input subsidy programmes can be implemented in ways that maximize their impacts on both productivity and poverty reduction. Consequently, this will require targetting the relatively poor rural smallholders and this can be combined with public social welfare programs that aim at improving their agronomic management practices, generate more productive, fertilizer-responsive seed technologies, and investments in rural infrastructure to allow smallholders to gain better access to input and output markets on a commercialized and sustainable basis.

### iii. Transaction costs and other institutional factors

Institutional factors are also critical factors hindering the full and sustainable participation of smallholder farmers in commercialized markets. Transaction costs are important aspects acting as deterrents in the process of information searching, contract negotiating, monitoring and enforcement, cost associated with transporting goods to market. In many cases the buyers of agricultural produce such as agribusiness owners are generally large and commercialized and they are able to take advantage of economies of scale and exert market power and negotiating power over small scale producers. This coupled with the poor socio-economic status of smallholder producers as well as insufficiencies in transport; processing and storage infrastructure (FAO/World Bank, 2009) bring about high transaction costs for smallholder producers. In addition, smallholder producers have low production capacities which entails that they are unable to rapidly change their production volumes in order to meet market trends; and they are unable to keep up with cost reducing technological advances thus making them less competitive.

#### **BOX 1**

### **Institutional failures: Smallholder farmers and supermarkets in Malawi**

In realization of the numerous bottlenecks plaguing smallholder agriculture in Africa, efforts have been taken in the past to assist smallholder farmers to successfully enter high-value supply chains and to become part of the 'supermarket movement'. In 2006, the Farmers Union of Malawi with the assistance of the World Bank country office attempted to establish linkages between smallholder horticultural farmer groups and the then newly established Shoprite chain of stores. The efforts mainly centred on creating dialogue and establishing linkages between the smallholder producers and the supermarket. Sustained linkages however failed as the farmers were unable to supply required volumes in a timely manner. In addition smallholders failed to meet the quality specifications (such as the size of the produce). This was mainly due to the smallness of their operation and the lack of finances to increase their operations.

Although producers may have knowledge of lucrative markets, their decision to participate in that market was determined by the level of transaction costs. In addition, other institutional factors that have the potential to lead to high transaction costs also worked to exclude smallholder producers from entering high value agricultural markets. This includes quality requirements, regulations governing the sourcing and procurement of produce for urban consumers as well as the speed of payment. Furthermore transaction costs do not only hinder smallholder farmers from participation in commercialized markets but also prevent agribusinesses from seeking to directly engage with smallholders as the involvement of smallholder produce led to incremental transaction costs. This is because contracting with smaller producers requires greater investment by the contractor in terms of start-up finance, training, administration activities as well as monitoring and controlling to ensure quality.

Despite this, contract farming arrangements have the potential to go far in providing a guaranteed market outlet thus assisting in reducing the transaction costs for farmers in accessing markets. There are many examples of contract farming arrangements leading to significant reductions in transaction costs for groups of farmers (Minot and Ngigi, 2004; Okello, 2005). In addition, the current and emerging institutional arrangements for contract negotiation have the potential to also positively impact farmers by maintaining their participation in the high value commodity chains. This is because modern supply chains or the supermarket model; which are on the rise in SSA and which are of high value; are inherently hostile to smallholder producers operating individually as the strategies employed in supply chain management and procurement are designed to extract as much as possible from supply chain players (Van der Heijden, 2010). The supermarket model typically favours large scale agribusiness corporations and large farmers, since large volumes of consistent quality are important for supermarkets. As a result individual smallholder farmers are as per definition at a disadvantage to larger farmers in engaging with supermarket chains. However, empirical evidence indicate that smallholder farmers can overcome this problem by banding together in groups thus attaining the economies of scale that supermarket value chains seek (Okello and Swinton, 2007). Further, studies indicate that collective action enables smallholder farmers meet stringent value chain requirements including food safety requirements and thus improving access to lucrative high end markets under closely monitored contracts with buyers (Okello and Swinton, 2007; Okello et al, 2011). However such economies of scale as found in the postharvest level as in this case do not exist during the pre-harvest stages of production<sup>1</sup>, especially where capital is expensive and labor is cheap. Hence the often cited preference for large scale production lacks the scientific basis.

Contractual arrangements between smallholder farmers and agribusiness firms have however not always proved sustainable in SSA as smallholder farmers in some cases cheated on the contracts by selling the produce elsewhere (i.e., sideselling). This resulted in high default rates on loans that were received by farmers as part of the contractual arrangements thus leading to a reduction in level of support and loss of trust between players. . In light of this, governments and developmental agencies have been working with smallholder producers in order to build their capacity to engage in sustainable contractual arrangements that enable them to participate in high value modern supply chains through capacity building and production support. This is done in order to create an environment in which smallholder producers are able to sustainably enter modern supply chains as a means of increasing income and livelihoods and therefore poverty reduction. The danger with this is that in the supermarket model, the market power is more often in the hands of the agribusiness owners or supermarkets while the producers have little or no bargaining power.

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<sup>1</sup>We thank our reviewer for highlighting this important aspect of smallholder agriculture.

Urban modern food systems have therefore the potential to favour large multi-national firms over small-scale farmers and can increase inequality and poverty as well as render poverty reducing public policies and programs redundant.

iv. Insufficient and/or missing infrastructure

Another key factor that hinders successful commercialization or participation of smallholder farmers in high-value agricultural markets in SSA is insufficient or absent infrastructure. In many cases farmers' attempts to either increase their production capacity or efforts to participate in lucrative markets are rendered unsuccessful by the absence of infrastructure such as irrigation and water resources, electricity/power sources, animal dip tanks and road networks. In cases in which groups of farmers are successful in becoming market oriented in terms of their production, the physical isolation/remoteness as well as the lack of telecommunication infrastructure prevents them from responding to higher market prices. Although some African governments are making considerable efforts in developing and investing in rural infrastructure<sup>2</sup>, the poor often do not directly benefit. This is because infrastructure is a public non-rival, non-excludable good; as such it is difficult to specially target the poor (Gunatilaka, 1999). Moreover there is historical evidence suggesting that the rural poor tend to retreat into the inaccessible interiors when infrastructure is improved (Jayne et al, 2010). Policymakers find it difficult to strategically place rural infrastructure such that it benefits the poorest since the poor are usually sparsely located in many rural areas thus requiring much greater targeted investments (Gunatilaka, 1999). Yet, research evidence indicates that investment in infrastructure has large net returns. Moreover, improved infrastructure reduces transaction costs thus facilitating smallholder farmers' access to high value markets. For instance poor road network strongly affects access by smallholder farmers to markets for high value perishable fresh fruits and vegetables characterized by high temporal asset specificity (Okello, 2005).

One area where specific targeting of the poor has been made is with information and communication technologies (ICT). This is because ICTs are recognized as a development enabler (UNCTAD, 2011). Efforts to resolve the problem of poor access to agricultural information (hence the high transaction costs) by smallholder farmers have focused on promoting information transfer through ICT-based innovations. Munyua (2007) documents the use of several ICT-based interventions in agriculture in Africa. In Kenya alone, for instance, there were 35 projects that used ICT as a platform for disseminating agricultural information in 2007 (Munyua, 2007). South Africa, Kenya, Tanzania, Uganda, Malawi, Madagascar and the whole of West African belt have ICT applications targeting the transfer of information to smallholder farmers.

The most commonly applied ICTs in smallholder market linkage interventions are mobile phones, web/internet-based resources, CD ROM, market information boards, and tele-centers (Okello et al, 2010). Radio and television are also used often interactively with mobile phones. The increased focus on modern ICT-based methods of information provision stems from the belief that they can:

- i) Provide a medium to communicate knowledge and real-time information to rural farmers,
- ii) Deliver training modules to farmers at low cost,
- iii) Improve farmers' access to markets and agricultural credit,
- iv) Empower farmers to negotiate prices better, and
- v) Facilitate and strengthen networking among smallholder farmers.

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<sup>2</sup>Chamberlin and Jayne (2011) present evidence for Kenya suggesting that the devolution of development funds to the constituency levels through the Constituency development Funds (CDF) has led to increase in the construction and repair of rural road thus directly benefiting smallholder/rural farmers.

As discussed earlier, the absence of market information exacerbates the problem of high transaction costs. Transaction costs on the other hand create a wedge between the prices reigning between any two markets thus raising the transfer costs and reducing the possibility of trade between such markets (Larson, 2006; Barrett, 2008). By facilitating easier access to market information, ICT could reduce transaction costs and thus improve the efficiency of trade between regional markets.

A few studies have investigated the above expectations and the effects of ICT-based interventions on smallholder and market performance in Africa (Ashraf et al, 2005; Aker, 2008 Okello et al, 2010; Asingwire et al, 2011; Kirui et al, 2010). These studies suggest that ICT usage has positive benefits to farmers and market actors with users of such services receiving higher margins than their counterparts due to reduced marketing costs. In addition, ICT services bring about a lower price spread between markets suggesting that marketing is more efficient; provide greater success of linkages to smallholder farmers with export markets and enable smallholder users to get better prices as compared to their counterparts that do not use ICT services.

Despite the above benefits, the use of ICT tools for agricultural transactions is still constrained by a number of factors. These factors and the consequences for smallholder producers are summarized in Table 2.

Table 2  
Factors hindering ICT use in African agriculture and consequences ▼

Factors hindering ICT use	Consequences
Low literacy levels	Affects the ability to use the short messaging system (SMS) as farmers are unable to navigate the mobile phone menu to seek or receive price information (Kenya and Malawi experiences)
High cost of ICT tools and phone calls	Prevents farmers from owning user friendly smart phones which are less complicated. Costs also prevent farmers that own mobile phones from using it to access agricultural transactions and information.
Lack of supporting infrastructure (especially electricity)	Lack of access to electricity causes difficulties in charging mobile phone batteries and/or computers and poor signal (network).  Smallholder farmers have to walk long distances to market centres with electricity hook-ups to charge their phones. Thus farmers mostly charge their phones on market days and are out of reach till the next market day once the power runs out.  Agricultural information sent to farmers in areas with poor network and/or no electricity takes many days to reach and, in the case of price information, may no longer be useful.

Factors hindering ICT use	Consequences
Age	Older farmers are less likely to use mobile phones for agricultural transactions than their counterparts  Younger, more educated individuals are more likely to use ICT as information sources than older ones
Asset endowments	Financial asset endowments determine the ability to purchase mobile phone handsets and afford airtime vouchers for calling.

Sources: Okello et al (2010) and Katengeza et al, (2011), Aker (2010), Kamungi & Okello (2011)

Many of the factors listed in Table 2 are interlinked to the factors that contribute generally to the failure of agricultural commercialization in the region. Hence it can be seen that the challenges to improving agricultural commercialization in the region are interlinked and hence doubly complex.

v. Effect of climate change-induced risks and uncertainty

Climate change affects small farm households in the form of weather-induced shocks namely, droughts and floods that directly affect agricultural production and marketable surpluses. Recent studies indicate that other climate change induced effects on agricultural households include rapid outbreak and spread of crop and livestock diseases, increased incidence of human diseases, increased incidence of crop and livestock pests, and changes in seasons as the onset and quantity of rains become variable. Shocks emanating from changes in seasons, crop and livestock pest and diseases, floods and droughts affect agricultural household production and hence participation in the market. Changes in seasons (such as early and/or delayed rains) make production variable subjecting small farm households to variable incomes which in turn makes it difficult to plan future investments in agriculture. Climate change-related human diseases reduce the labor productivity through impaired health resulting in low effective farm labor.

There are varying estimates of how climate change is likely to affect agricultural production in developing countries. Conservative estimates indicate that climate change is likely to affect crop yields in developing countries by 30-40% (World Bank, 2009). At the same time persistent droughts are estimated to result in heavy livestock losses. These predictions have raised concerns that agricultural households are likely to be adversely affected. Smallholder farmers might bear the greatest burden of such climate change-induced risks due to their reduced capacity to cope with such shocks.

Empirical evidence on the actual impact of climate change on farm households is still very limited. However, Kakota (2011) argues that climate change affects the small farm household by compromising household food security. Food insecure households adopt coping strategies that can seriously undermine their future productivity hence participation in the market (i.e., output commercialization). Past evidence suggest that such households typically cope with shocks through reduced investment in productive assets and activities including the reduced use of yield augmenting technologies such as fertilizers and high yield seed varieties or improved livestock breeds. Such households therefore need support (in form of safety net) to rebuild their productive capacity so as to return to market-oriented production.

#### 4.2 Factors facilitating successful agricultural commercialization in SSA

Success stories of smallholder commercialization have been widely documented in the region. In many instances the same case studies of successes are cited repeatedly such as the success of the floriculture value chain in Kenya and the development and commercialization of Nerica rice in West Africa. These cases have been successful on a wide scale with other localized success stories not being readily available. On the other hand, it is also true that most successes are not widespread and often are much localised with difficulties being encountered in efforts to scale up and out the successful initiatives.

There are three overarching and highly interlinked factors that have been found to be necessary for successful agricultural commercialization of smallholder farmers in the region. A key feature of the factors leading to successful smallholder and inclusive commercialization is that they all bring the market closer to the farmer and they reduce transaction costs. It should be noted that these factors have had varying levels of successes in different parts of the region as well as within countries. In many cases, the negative factors discussed above far outweigh the positive factors leading to a general picture of the failure of smallholder commercialization efforts in the region. More often than not smallholder farmers do not successfully become commercialized but rather engage with the market in an ad hoc fashion with successes in one season turning into failures in the next season. Furthermore successes are often at a small scale with efforts to scale up and out either failing or not being attempted.

Hence, the key issue in ensuring inclusive agricultural commercialization in the region will depend on the ability to better understand and replicate models of agricultural commercialization that have been sustainable beyond one season and beyond changes in elected leaders and/or employees. The key features of the factors leading to sustainable successes in smallholder agricultural commercialization are discussed next and emphasises that in many instances more than one of these aspects need to be in place. Promoters of smallholder agricultural commercialization need to contextualize their implementation as success of an intervention is only as good as the understanding of the context within which programs are being implemented.

##### i. Farmer organization, collective action and innovation

Farmer organization, especially a formalized system, is a key contributing factor for successful agricultural commercialization in the region. This is because farmer organizations or collective action works to overcome many of the hindrances that prevent individual farmers from participating in markets. Farmer organizations that are successful are those that are able to overcome the free rider problem and those that are able to separate the shareholders (members) from the management of the organization.

Functions that farmer's organizations provide in the region for smallholder producers included increased provision of technical and market information, access to inputs, increased access to extension services and/or technical advice, transport to markets and access to credit facilities. In some cases, successful farmer organizations also provide members with access to resources such as land for production and water for irrigation. In addition, successful farmer organizations are those that are able to establish a reliable market through contract arrangements by providing much needed negotiation services and expertise.

Sustainable farmer organizations have been successful in reducing incremental transaction costs, led to higher production and marketed output, reduce price instabilities for members and generally take advantage of economies of scale. Finally the farmer organizations or collective action initiatives that have been successful in sustainably enabling farmers to become commercialized are those that combined aspects of enabling farmers to produce for the market (market orientation production through production support) as well as supporting farmers to access markets (market participation through contract negotiations and transport provision).

Another important feature that enhances smallholder farmers' ability to succeed in markets is social capital. Successful farmer organizations/associations and contract farming arrangements were those in which bonding social capital with values such as trust, cooperation and commitment between the different players in the value chain were present. Trust is needed for successful and repeated exchange between the supplier and the buyer. Farmers needed to trust the buyers that they would be paid after supplying a produce. In the same vein buyers needed to be sure that the contracts which had been put in place would be adhered to even if market prices changed. Other types of social capital, namely bridging and linking social capital also play an important role in fostering strong relationships between farmers and their buyers. This is because linking and bridging social capital, focus on the establishment of social networks between farmer groups and with service providers respectively. These aspects of social capital assist farmer groups to access new markets and to get access to information on technological advancements.

Successful groups of farmers or individual farmers are those that have the ability to innovate. For individual farmers, innovation in the form of entrepreneurial skills and diversity of the commercial enterprise is a key success factor. Individual farmers that are able to properly utilize market information and to conduct informal market research; and who are willing to take risks are more successful in their commercial endeavours. Farmer organizations that are able to put in place innovative marketing strategies such as centralized collection points, transportation and market points are more successful and sustainable. The collective action dimension and the peer mechanisms are also instrumental in increasing the adoption of productivity enhancing technology such as fertiliser (See the study by Zeitlin, 2009 on cocoa farmers in Ghana). In addition farmer groups that have external technical assistance in areas of product development, market analysis and putting in place other institutional innovations are also far more successful.

## ii. Information and direct access to markets

Another key feature leading to successful smallholder commercialization is information and direct access to markets. Many case studies demonstrate that increase in information for farmers and direct access to farmers in rural areas greatly increases farmer's participation in commercialized markets. In cases where farmers use intermediaries along the agricultural value chain, they are less likely to succeed as they get lower prices and they incur higher transaction costs. Direct access by farmers to markets alleviates the potential exploitation of smallholder by middlemen and other players along the agricultural value chain. The use of mobile phones to provide market prices to farmers in rural areas has been the main innovation that has led to increased information access. In addition, rural market information system services such as the provision of market prices on boards in rural growth centres and trading towns has also been instrumental in increasing direct trade between smallholder producers and buyers.

ICT tools have been used to provide technical (especially agronomic) information to farmers thereby enabling them to overcome the idiosyncratic market failure. Access to technical information is expected to enable farmers to increase their production hence marketable surplus. At the same time ICT tools enable farmers to receive information about prices in local and distant markets without the need to travel to such markets or the need to depend on the traders who by the nature of the business are unlikely to be truthful about the price. Knowledge of the produce price in local and distant markets has a major advantage to farmers in that it offers them the power to bargain for better prices. Most importantly access to ICT-mediated production and market information reduces the search and screening costs and thus the transaction costs. High transaction cost acts as a major impediment to the smallholder farmer commercialization and is usually blamed for poor participation by smallholder farmers in better-paying markets. Thus access to information through ICTs can spur both input and output commercialization by increasing marketable surplus and facilitating participation in better paying, distant rather than local markets or selling at the farm gate.

### BOX 2

#### Successful smallholder commercialization: Case of Nyabyumba Potato Farmers, Uganda

Pockets of successful smallholder agricultural commercialization efforts in the region are readily available. In several countries in the region (including Malawi, Uganda, Mozambique, and Zambia), the International Centre for Tropical Agriculture (CIAT) under a program entitled the Enabling Rural Innovation (ERI) worked to build small scale farmers capacity to produce for the market as opposed to farmers marketing only surplus which they have after meeting their subsistence needs. One success story is from South-Western Uganda where small-scale potato farmers were successfully linked to high value markets. Using an iterative market led learning process, the Nyabyumba potato farmers were able to not only enter the market but to also sustain the linkages and meet all rigorous quality requirements of the potato market. Success was achieved through the use of an iterative market led process based on building the farmers capacity to become market oriented and to participate effectively in the market. This included providing direct access of farmers to markets; providing support to develop the farmer's abilities to conduct market research and to produce for the market; as well as working to develop farmer's abilities to innovate and better understand their farm enterprise.

### iii. Finance and credit

The availability of finance in the form of increased non-farm income, savings and/or credit for investment in commercial enterprises is a key factor determining the level of success of market orientation production and market participation. Hence programs that combined aspects of credit with input and output marketing had great success in increasing not only market outcomes such as incomes and market participation but also farm productivity. This is because at the farm level smallholder credit promotes the uptake of new technologies; and when channelled towards smallholder traders, it leads to thriving rural economies in which surplus production is absorbed. The implications are that achieving inclusive agricultural commercialization requires financial intermediation and the provision and development of rural financial markets and services. This will include the development of innovative rural banking services and credit schemes.

The provision of farm credit for smallholders is not easy and often credit is provided but systems breakdown due to large default rates. An example is that of the government led Smallholder Agricultural Credit Administration (SACA) of Malawi which collapsed in the 1991/92 cropping season due to high default rates arising from political instability and a drought which led to low agricultural productivity. The main innovation which has taken place in many countries in the region which has led to sustainable provision of smallholder finance has been group based lending as a substitute for collateral (Chirwa, 2002). This innovation has gone hand in hand with pre-conditions for loan access for groups which include training on business and credit management; group formation and management and group liability. This strategy originated with the Grameen bank concept in Bangladesh. It uses social pressure to reduce default through peer monitoring. For this strategy to work however, there need to sufficient level of cohesion among group members. At the same time reputation damage arising from defaulting should be sufficiently large to deter default. The peer monitoring works better when combined with threat of a sanction usually in the form of suspension or expulsion from the group.

An alternative to using groups (collective action) is the use of local individuals with thorough knowledge of clients and local culture and who can therefore closely monitor the borrowers. This strategy, based on Besley (2009) has been tried with some success in micro-lending in developing countries. It however has the disadvantage that i) the monitors can collude with the local lenders to cheat, ii) where social ties are very close, the monitor may fear to reveal malpractices (especially cheating) for fear of being isolated by the community, iii) monitoring can involve high costs.

Other pre-conditions for groups to access finance have included savings mobilization by the group members and small initial loans. These small changes in the micro-finance sector coupled with charging realistic interest rates (that are equivalent to interest rates in formal financial systems) have resulted in massive increases in the availability of smallholder finance and credit.

## Changing trends in agricultural commercialization: The case of Kenya tea and coffee

The Kenyan tea subsector, which is predominantly smallholder farmers, is considered one of the success stories in African agricultural and a model of smallholder commercialization. The subsector recorded tremendous growth in the 1960s and 1970s but has since faced major challenges relating to marketing and fluctuations in prices. Estimated area under smallholder tea production has, however, increased from 21,448 hectares in 1963 to 141,316 hectares by 2005 (International Tea Committee, 2006). More recently, however, a number of smallholder farmers have converted most of their tea land into production of other cash crop. The story of coffee is rather complex but closely mirrors that of tea. From the glorious years of the 1970s, the industry has witnessed decline in exports over the years. The liberalization efforts in Kenya of the 1980s and 1990s also failed to put the industry back on the growth trajectory of 1970s.

Source: Langat et al, 2011

## 5

## SYNTHESIS OF POLICY ISSUES

The literature on agricultural commercialization emphasises important areas of intervention. To a large extent these have a common theme: reducing transaction costs. High transaction costs prevent market participation and thus constrain commercialization. To a large extent most studies highlight the transaction costs dimension only through the analysis of high transport costs that emanates from poor infrastructure and long distances. In addition limited physical market infrastructure also plays an important role in this regard. It is however so that transaction costs do not emanate only from transport costs but has more to do with the institutional dimensions of transacting. It is therefore argued that poor institutional infrastructure (poor police protection and contract enforcement and limited essential public goods) also plays an important role in constraining commercialization.

There are various ways in which these aspects can be addressed via specific policy interventions as an intermediate solution in the absence of more substantive solutions such as major institutional reforms and large capital investments. From all the experiences with commercialization of smallholder farmers in Sub-Saharan Africa three key policy issues can be extracted: public support to smallholder farmers for market participation and orientation; land tenure and property rights; and policy and program coordination.

#### i. Public support for inclusive agricultural commercialization

The massive volume of literature concurs that in order for agricultural commercialization to be inclusive there is need to support smallholder farmers so that they can engage effectively with markets. Due to pre-existing social, economic, environmental and political bottlenecks there is a clear role for the state to take the lead in supporting smallholder farmers to become market oriented and to participate in markets. Specific areas for policy consideration are for support to remove pre-existing bottlenecks along the agricultural value chain by increasing:

- The availability of and accessibility to high yielding seeds for both traditional and non-traditional cash and food crops.
- Capital for investing in livestock and in capacity for livestock production and management as well as capacity for accessing lucrative markets.
- Smallholder farmers' productivity thus ensuring that they are able to produce an adequate marketable surplus.
- The human and social capital of smallholders to enable them to better understand their farming systems and to utilize and develop networks. This also goes in line with establishing & strengthening farmer organizations.
- Farmers' asset base/resource endowments to make them more resilient to market shocks. This includes increasing farmers' ownership of livestock and low cost machinery.
- Investment in rural infrastructure such as feeder roads, markets, irrigation and water infrastructure
- The investment in new generation ICTs such as mobile phones, internet/email & personal computers for information transfer. This however goes hand in hand with capacity building of producers to enable them to use new technologies.

These policy measures would go far to not only improve market orientation of smallholder production but also work on increasing market access. This is a key issue as success and failure of smallholder commercialization has in many instances hinged on not only the ease and/or difficulties associated with producing for the market (market orientation) but also with accessing markets. Market access has been empirically measured by many different types of indicators including proximity to input and/or output markets; agricultural advisory services; health facilities; electricity; communication and transport infrastructure; and other types of public services and infrastructure (Chamberlain & Jayne, 2011) such as animal dip tanks and tarmac roads. In addition the number of traders in a community/area, availability of timely information and the disparity between farm gate prices and market prices has also been used to define market access. It is of great concern to policymakers and promoters of agricultural commercialization as the level of market access influences the amount of transaction costs incurred by producers and therefore their market margins which ultimately determines their willingness and ability to continue producing for the market. The diversity of the indicators/definition of market access is a clear indication that a single policy instrument cannot overcome the bottlenecks hindering farmers from fully accessing markets. In addition, the broadness of the definition of market access also shows that investing only in increasing production and productivity would not be sufficient to spur sustainable agricultural commercialization. A policy mix is therefore required to successfully overcome the barriers of smallholder market access-with programs that promote public-private partnerships to create linkages between public and private programs, policies and initiatives working to promote rural growth and development and commercialization with government playing a complementary role to create an enabling environment for the private sector. This should be coupled with deliberate multi-sectoral efforts to improve small scale capacity in terms of agribusiness and value addition.

## ii. Land tenure and property rights

Another important policy issue is that of land tenure and property rights. This is because land tenure security is acknowledged to be a necessary condition for agricultural intensification and therefore successful agricultural commercialization. Sub-Saharan Africa is plagued with land tenure insecurity because the majority of agricultural production takes place on untitled customary/free hold land. In addition, existing traditional land distribution systems promote fragmentation of land resulting in overuse and long term landlessness. Hence in order for agricultural commercialization in the region to be inclusive and sustainable there is a need to improve land tenure security. Consequently, the majority of countries in the region have ongoing efforts to address land tenure with many of them currently implementing new land policies. To facilitate agricultural commercialization and to enhance livelihoods, governments need to create partnerships with the private sector with whom they should focus on addressing land reform failures which are widespread in the region and to redesign policies to ensure that they are sustainable and non-exploitative. Policy should also focus on ensuring tenure security for not only individual farm plots for individual households but also collective rights for common pool resources and other non-excludable natural resources.

## iii. Policy and program coordination

Strategies for increasing farmers' access to high value markets and for commercializing traditionally subsistent farming systems will only be successful with policy coordination. Currently the bulk of strategies that aim to promote market orientation and to enhance smallholder participation in markets are at the micro-level. In contrast, macro-level strategies for creating a favourable environment for commercialization mostly favour large scale commercialized farmers and agribusiness firms. This is the case for both government supported export promotion programs and private service providers that provide different services such as finance, investment capital, and insurance. Smallholder farmers are most in need of the services that are available to larger commercial farmers but often they are excluded because of the smallness of their operations, and their poor financial standing. Hence smallholder farmers, who are often the most disadvantaged, are unable to take advantage of higher market prices. To fully enhance smallholder participation in markets, there is need for deliberate efforts to allow them to access financial, social and economic services that are currently only available to large commercialized farmers. This can only be done effectively through public-private partnerships with government providing capacity building and acting as the collateral for the poor; and the private sector providing the much needed services. Moreover, the government should play greater role in investing in infrastructure and providing goods and service with public good characteristic in order to provide the asset-poor smallholder farmers with opportunities to be integrated in high value commodity chains. Such investment reduce transaction costs and hence can enable smallholder farmers sell their produce in better-paying distant markets. Only then will private sector investment in market access (through for instance bring produce-buying and input selling points closer to farmers) facilitate greater commercialization of smallholder agriculture. Indeed, the poverty traps literature identifies the priority need to invest in improving the infrastructure in order to link farmers to better/lucrative markets.

Another key emerging issue is increased vulnerability of smallholder producers arising from greater market linkages. A clear message is that by increasing farmers' dependency on the market makes them more vulnerable to market forces. Hence, although farmers' livelihoods may be improved by strategies that aim to help them to become market oriented and to increase their market participation, there is a danger that these benefits may be eroded by policy shocks that transmit through the market unless policies are deliberately coordinated (Mapila et al., 2011). To overcome this challenge there is need for macro-economic policy making to be aligned with micro-economic initiatives that aim to enhance smallholder commercialization. Apart from deliberate policy coordination there is also need for deliberate policies and programs that aim to overcome market and institutional failures such as food price instabilities, missing markets, asymmetric information (Jayne et al. 2010).

#### BOX 4

### Is commercialization always good for smallholders? New debates and policy concerns

Supporting market orientation (in terms of production) and market participation is the main strategy that has been used in the region to facilitate successful smallholder commercialization. Empirical studies conducted in Malawi by Mapila, Kirsten & Meyer (2011) indeed demonstrate that linking farmers to markets by building their capacity to better understand their farming systems and by increasing their capacity to utilize and gather information leads to positive livelihood outcomes. The study however further shows that although households that are linked to the market using this 'innovative approach' are better able to take greater advantage of market incentives; there is evidence that these households may be more vulnerable to macroeconomic and agricultural sector policy shocks. This raises great concerns for policy makers and other relevant stakeholders as commercialization of the agricultural sector is seen to be the only viable option for facilitating growth and reducing poverty for the majority of the poor. Critics of the findings of Mapila et al (2011) however state that the analytical framework used to determine the impacts of policy shocks on households has a shortcoming as it does not take into account the ability of individual farmers and/or communities to be 'innovative' in the face of policy shocks that transit through the market. This is an important point as Mapila et al (2011) hypothesise that enabling rural innovation is a key aspect for improving rural livelihoods. Therefore the same 'rural innovation' should be factored in when modelling farmer's response to policy shocks as they become more commercialized. This is an area for future research.

#### iv. Enforcement

In many developing economies in sub-Saharan Africa, traders in liberalised agricultural markets, particularly for food grains, operate in a context in which prices are not publicly announced, goods are highly differentiated with no formal standardisation and classification system, contracts are oral and non-standardised, there is little inspection or certification, and virtually no recourse to legal means of contract enforcement. Thus, both producers and traders are highly vulnerable to being cheated with respect to market prices, qualities and quantities of the delivered good, as well as other contractual terms such as the timing of delivery, and product spoilage or loss during transport. All of these increase transaction costs and if enforcement of contracts, agreements, laws are not in place it is very hard to transact.

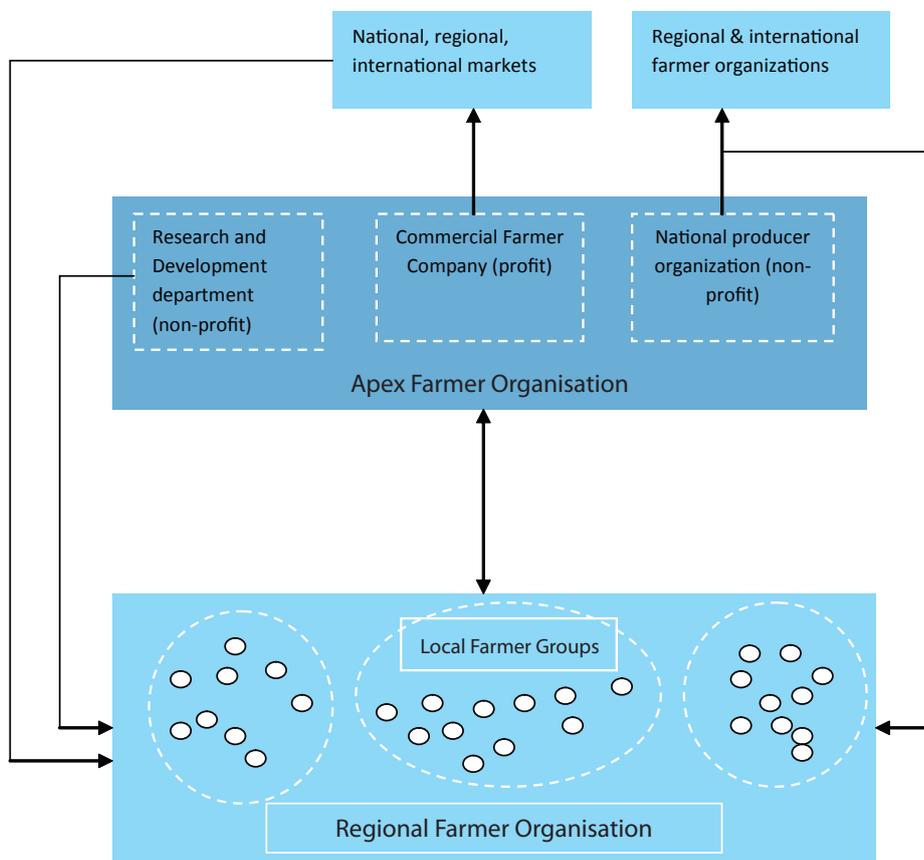
The literature on market transactions in African agriculture and the enforcement mechanisms applied show that self-enforcement, collective, and third-party systems co-exist and emerge for reasons related to specific markets and product attributes. Self-enforcement in trust-based systems is a lower market outcome, and a response to the absence of costless third party enforcement. Information seems to be the key constraint to moving from trust based to expanded markets with third party enforcement. The policy implication is to design interventions that will address the information constraint which enhances enforcement of contracts but also enhances market participation in itself.

Given that poor enforcement discourages commercialisation, an obvious strategy would be to ensure better enforcement through institutional reform of the judiciary and law enforcement agencies.

## 6 A NEW MODEL OF SMALLHOLDER AGRICULTURAL COMMERCIALIZATION IN AFRICA

In order for the commercialization of agriculture in Africa to be inclusive, it is imperative that a new model be developed. Figure 1 below presents our conceptualisation of a new model that is hinged on the concept of running a non-profit farmer organization that has overlapping but separate divisions for research and development, profit making and farmer organization. This model entails that there is inclusiveness and sustainability coupled with separating the operation of the marketing aspects of the farmer organization from the duties of elected farmer members.

Figure 1  
A new model for inclusive smallholder commercialization in Africa ▶



The model proposes that individual smallholder producers form local farmer groups. Local farmer groups would be responsible for enhancing farmers' productive capacity, quality controlling of produce and for bulking produce for the market. The different local farmer groups would link up and establish regional level organizations that are bound legally as either associations or that are driven by the cooperative principles. Regional organization can be based on geographical districts, administrative divisions or geographical proximity-the organization of regional farmer groups would differ across and between commodities and countries.

Different regional farmer organizations would then link up to form apex national level farmer organizations. The apex farmer organizations can be either commodity based entities or generic farmer organizations that have sub-divisions working on the different commodities and markets. In this model it is proposed that the apex farmer organization should be organized as three separate but mutually reinforcing entities. As can be seen in Figure 1, it is proposed that the apex organization should have three divisions- namely a National Producer Organization (NPO) entity, a Farmer Marketing Company (FMC) and a Research and Development (R&D) organization. The National Producer Organization (NPO) would be the central meeting point for all the apex commodity organizations in the country or the sector. The NPO would be a legally registered non-profit entity that is responsible for lobbying and advocating for policy changes; policy dialogue as well as strengthening the farmer organization movement in the country or commodity sector. The NPO would have linkages with other national, regional and international farmer organizations such as Southern African Confederation of Agricultural Unions (SACAU), Eastern and Southern Africa Small Scale Farmers Forum (ESAFF) and La via Campesina. Through these linkages the NPO would get involved in global and regional lobbying and advocacy campaigns and work towards championing global and regional platforms for farmer empowerment. Thus, individual farmers would have a voice at national, regional and international platforms through the NPO.

The second division is the Farmer Marketing Company (FMC). The FMC would be a profit making company that would be the main buyer of commodities from the apex farmer organizations, the regional farmer organizations as well as any other traders. The FMC would not deal directly with individual smallholder farmers due to the high transaction costs involved. The FMC would be responsible for sourcing markets, contract negotiations, ensuring quality and procurement requirements. The FMC would provide a stable and reliable market for producers. The FMC would work to link with national, regional and international markets with the regional farmer organizations having a shareholding in the FMC thus receiving profits and dividends. It is imperative that regional farmer organizations, local groups and individual farmers receive market related prices as this ensures sustainability and builds a sense of ownership. Profits and dividends earned by the apex farmer organizations would be used for various things including building commodity groups and individual farmer's capacity to produce for the market; creating a credit fund that individuals could borrow from and /or use for paying for other services such as agricultural advisory services and inputs. Shares should be tradable between regional farmer organizations to allow regional organizations to expand and grow as their financial base grows.

Finally the third division of the Apex Farmer Organization is the Research and Development (R&D) division. This would be a non-profit organization working on conducting research pertaining to the farmer organization movement but also supporting the FMC in marketing research. The research agendas of the R&D division would be driven by the regional farmer organization as well as the FMC. The results of the research would be used first and foremost to develop the farmer organization, individual members and the company. In addition the R&D division would work towards generating research outputs for lobbying policy makers.

The new model for smallholder commercialization is basically hinged on the concept that there is need for farmer organizations to have not only a non-profit entity that works to strengthen farmer organization but also a semi-autonomous profit making company that works to provide an organized way of linking farmers directly to lucrative markets. By the company being profit making it ensures sustainability and also guarantees that it attracts personnel that are of high calibre. Since the farmer organizations have shareholding in the company it guarantees that they get essential funding needed for running their non-profit farmer organizations, for building capacity of members but also for hiring administrative, managerial and financial personnel to work hand in hand with elected members. Although the three division of the apex farmer organization are inter-linked it is essential that directors and managers responsible for each separate entity should have power to make strategic decisions which are informed by the needs of the farmer groups and individual members (Rosairo, 2011).

#### BOX 5

### Example of successful smallholder commercialization: Horticultural cooperative Society in Salima district, Central Malawi.

Smallholder farmers producing various horticultural crops collectively entered the formal market system following a series of training and capacity building initiatives that focused on organisation skills, staggered production, market research, advertising, commodity pricing and consistency in maintaining quality and volume of produce, adhering to delivery times and loyalty to contractual arrangements (even when temporary changes in the open market made side selling more attractive). The initiatives improved the quality and supply consistency needed by the market, eliminated the myriad middlemen (hence shortening the value chains) thus increasing smallholder farmers' incomes. Under the cooperative, farmers were able to supply consistently high quality produce to meet urban demands in the city of Lilongwe. The smallholders also managed to separate the operation of the cooperative from the membership thus making profits which were shared out among members annually. Sustainability of this cooperative arrangement is still unclear because very few of the markets targeted by these farmers are willing to have formal/written contracts for fear of the inconsistencies suffered in the hands of similar smallholder producer organizations. The targeted urban market is also still sceptical of giving large supply quotas to smallholder farmers at the expense of the usually more reliable larger farmers. The small volume quota allocated to smallholders makes the unit cost of marketing higher for them than their counterparts. However, this is expected to change as the market gains confidence in the consistent supply of quality produce from the cooperatives. Moreover, due to the collective production, the banding of volumes from individual smallholders can enable.

Source: Mercy Butao, Agronomist, Ngolowindo Horticultural Cooperative Society

Experiences from Sri Lanka show that farmer organizations that lacked proposed features of institutional, group and managerial characteristics frequently failed (Rosario, 2011). Experiences from the African continent show that farmer organizations that have some aspects of the institutional, group and managerial style proposed in the new model in this paper have been to a large extent successful in establishing self-sustaining farmer organizations. These include but are not limited to examples of smallholder farmer organizations from Malawi namely the National Smallholder Farmers Association of Malawi and Ngolowindo Horticultural Cooperative society. Smallholder horticultural producers in Zambia and Central Kenya also attempted this model of collectivization with considerable degree of success. In the Kenya case, the farmers formed Kirinyaga Horticultural Growers Union with membership drawn from individual farmer groups. The major aim of the Union was to lobby buyers for fair treatment with regard to compliance with international food safety standards and the government for support in meeting the standards.

## 7

### FUNDS AND FARMS: LIKELY IMPLICATIONS OF FOREIGN LAND PURCHASES ON SSA SMALLHOLDER FARMERS

The landscape of smallholder agriculture and the rural landscape in Africa are fast changing as large foreign investment funds are introducing large operations mainly to produce food (UN, 2010). Kenya, Sudan, Ethiopia, Madagascar, Tanzania and Mozambique are among the countries that have leased large tracks of land to foreign investors. The rush for land by foreign investors (initially private by more recently even government) was recently speeded by the 2007/08 food inflation and the surge in oil prices. The former led major suppliers e.g., India, Argentina, and Vietnam among others ban their exports, further increasing commodity prices and contributing to an increased search for foreign investors to buy land and water rights elsewhere to grow food.

Foreign investment by large agricultural corporations is not new in Africa. In the 1970s and 1980s, multinational corporations invested in production of cash crops in many countries of the SSA. Examples include cut flower and fresh export vegetables), fruits such as pineapples. This time though, the land purchased is used for growing food for foreign consumption using land occupied by poor smallholders but also in many cases unutilized land. To some extent it looks as if these land purchasers are pursuing a frontier model of agricultural development.

These developments bring various threats to poor communities. On the other hand it is also true, as is illustrated by the many examples of these investments in southern Africa, that agriculture as a business is changing fast and it is likely that these aspects related to capital and financialisation (although negatively perceived) could bring about the necessary investment in local agricultural processing, improved infrastructure, availability of markets and better incentives for smallholders. It could well be that these large scale investments by large hedge funds and endowments could be the commercialisation catalyst for large groups of small farmers without removing them from their existing land and operations.

The available literature highlights a number of effects that the purchase of land by foreigners in SSA Africa can cause. These effects can be positive or negative. The positive benefits associated with the new foreign direct investment (FDI) are the transfer of superior technology and employment. It is argued that the new investors are likely to bring better agricultural technologies to involved communities through technology diffusion. However, some authors argue that the technology transferred may still be too lumpy hence largely inappropriate for the affect local communities. Along with this, some argue that land purchases by foreigners will displace local communities thus disrupt their agriculture and lead to significant household food insecurity. This argument is based on the premise that displaced communities (usually smallscale farmers and livestock grazers) will lose rights to land and water and be forced into marginal/unproductive lands without proper compensation. At the same time, since the funds typically buy land close to water resources, the smallholder communities that depend on the same water for irrigation will lose out. This point is especially crucial considering that the search for African green revolution is based on agricultural intensification involving expanded use of irrigation. Even more important is that fact that recent studies (see Jayne and Boughton, 2011) recommend a change in land policy in SSA in order to place more land in the hands of smallholder farmers and the landless households to spur agricultural development. Thus the transfer of prime land and water resources to foreigners is likely to undermine the development of smallholder agriculture.

Despite this current negative context attached to this so-called 'land grabbing' it might be useful for governments to introduce certain conditions on proposed investments to prevent these negative outcomes from this emerging trend. This could ensure that countries targeted by these investors can extract maximum benefits – not for political gain – but to stimulate broad based agricultural growth. The argument, as presented earlier, is that foreign direct investment can bring the necessary infrastructure and market access that could well be the catalysts for smallholder commercialisation. The right conditions and incentives provided by governments can ensure that is indeed the case.

## 8

## CONCLUSIONS AND FUTURE RESEARCH

The main conclusions of this paper are that managing agricultural commercialization for inclusive growth of the poor in Sub-Saharan Africa requires public-private partnerships that enhance not only market participation but also assistance of smallholder producers with market orientation. This is because public and/or private initiatives that only focus on increasing the market participation of rural farmers, although successful in some comes, are often not sustainable. In addition given pre-existing social, economic, environmental and political bottlenecks in the region, there is need for the state to take a lead role in investments and programs to ensure that smallholders are effectively included. This however needs to be balanced with the creation of a favourable legal and policy environment to ensure that the private sector is able to engage effectively and directly with smallholders. The key challenge of this strategy for governments in Sub-Saharan Africa will be to ensure that smallholder farmers engage directly with high value markets. This however should be done in such a way as to also ensure that other players within the agricultural value chain, such as middlemen and traders, are not crowded out.

The various studies reviewed in this paper provide insight into many areas of future research that need to be undertaken which can be summarized into three research groups. These are research pertaining to production/productivity; institutional and organization research and policy research. The production/productivity research group centres on research to develop and test new production systems that will enable smallholder producers to effectively and sustainably enter high value markets. This also includes research that looks at developing post harvest technologies that will minimize losses as well as research on breeding and agronomy to develop area specific technologies to suit the varying and complex natural and physical capital that is at the disposal of smallholder producers in the region. The institutional and organizational research group pertains to looking at research that focuses on improving input and output supply chains, knowledge and information management, as well as at research to ensure the sustainability of smallholder farmers' organizations. This research group should also focus on examining existing institutional arrangements and their impacts on the poor as well as research on existing Research and Development (R&D) frameworks. The policy research group calls for research that focuses on assessing the policy environment with specific areas of analyzing private/public partnerships that can effectively lead to inclusive agricultural commercialization; regional and international market aspects as well as on assessing the impact of modern supply chains upon rural livelihoods, the poor and the gendered nature of agricultural commercialization. The policy research group also calls for research that looks at policy coordination issues, vulnerability assessment of smallholder farmers to market forces and research on resilience in the face of policy shocks that transmit through markets. Finally there is need for all the research group needs to go beyond looking at research for 'mainstream' commercial crops such as wheat, maize and rice to include research on indigenous crops of the region such as roots and tubers, finger and guinea millet, sorghum and other indigenous vegetables and fruits. Research on indigenous crops and vegetables is essential as these crops have the potential to ensure sustainable food systems and food security for the future; which is a key step for economic growth of any country. Research on indigenous crops requires collaborative efforts by all research groups as currently the challenges facing indigenous crops and vegetables includes low productivity and production; low consumption and low knowledge by consumers; as well as lack of knowledge on food preparation. Research on indigenous crops would therefore focus on only commercialization of the crops but also on enhancing awareness by consumers of the nutritional, ecological and economic benefits of producing, marketing and consuming indigenous crops and vegetables for the region.

Overall the three research groups all underscore the need for future research that aims to develop new market models that will ensure that smallholder producers; who are disadvantaged by virtual of pre-existing conditions; are enabled to become commercialized without jeopardizing their food security and livelihoods. Hence such research needs to focus on finding new models for including smallholder farmers in high value agricultural markets which minimize their vulnerability to market forces. This paper has provided insight into the attributes that such a new model should have in order to promote inclusive agricultural commercialization.

Further research into the feasibility of such new models and development of other types of models is however needed for specific groups of countries and producers.

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## APPENDIX 1

Table A1

Review protocol ▼

<p>Background</p>	<p>There is numerous and diverse work on agricultural commercialization in Africa which is at times conflicting. This reduces its ability to effectively influence policy for formulating programs that are beneficial for the majority of smallholder farmers in the region. Therefore the main aim of the SSA research team is consolidation of the heterogeneous works on agricultural commercialization for inclusive growth that are found in literature</p>
<p>Review objective</p>	<p>The systematic review is on the research topic 'Managing agricultural commercialization for inclusive growth in Africa'. Its aims to firstly act as a resource book for field practionners to put in place or facilitate projects to commercialize smallholder agriculture in Africa. Secondly it will consolidate the policy issues surrounding the research topic hence act as a tool that can aid policy formulation. Lastly it will identify existing research gaps that researchers can use to develop future research agendas.</p>
<p>Study selection</p>	<p>Studies will only be included in the systematic review based on the following screening procedure:</p> <ul style="list-style-type: none"> <li>■ Study was conducted after 2000. Studies from between 1995 and 2000 will only be included if they are of particular relevance</li> <li>■ Title screening</li> <li>■ Abstract screening</li> <li>■ Full paper screening</li> </ul> <p>Title, abstract and full paper screening will be based on the following key words:</p> <ul style="list-style-type: none"> <li>■ Agricultural commercialization</li> <li>■ High value supply chains</li> <li>■ Smallholder commercialization</li> <li>■ Linking farmer to markets</li> <li>■ Agro-enterprise development</li> <li>■ Re-governing markets</li> <li>■ Supply chain development</li> <li>■ Agricultural cooperative development</li> </ul>

Inclusion criteria	Study design	<ul style="list-style-type: none"> <li>■ Studies that will be included in the systematic review will be those that employed either qualitative or quantitative research designs</li> <li>■ Both theoretical and empirical research will be included</li> </ul>
	Methodological quality	Subjective judgment of the analytical framework and methodology will be applied to assess the robustness of a study for inclusion. This will be carried out by all research members
	Language	Only work that is published in English will be included. This includes work that is undertaken in other languages but which is available as a publication/report in English
	Publication type	<p>3 types of publications will be used:</p> <ul style="list-style-type: none"> <li>■ Grey literature- company reports, project reports, theses, conference proceedings</li> <li>■ Partially published research- Conference abstracts &amp; proceedings</li> <li>■ Published work- Journal articles, magazine articles and book chapters</li> <li>■ Other recent literature in leading journals even if not directly related to the countries or region in question</li> </ul>
Search strategy	<p>Five key search strategies will be employed:</p> <ul style="list-style-type: none"> <li>■ Electronic database search</li> <li>■ Visual scanning of reference/bibliography lists from relevant studies</li> <li>■ Canvassing for relevant studies from project internet sites and university theses listing sites</li> <li>■ Hand searching key journals and conference proceedings</li> <li>■ Hand searching university theses</li> </ul>	

Data extraction	<p>The following information/data will be extracted from the included materials:</p> <ul style="list-style-type: none"> <li>■ Policy recommendations/issues</li> <li>■ Research gaps and future areas of research</li> <li>■ Conditions under which commercialization works</li> <li>■ Conditions under which commercialization does not work</li> <li>■ Possible case studies highlighting failed and successful commercialization</li> </ul>
Quality assessment	<p>The methodological strengths and weaknesses of included studies of study design and conduct will be recorded. Studies will then be categorized into robust and no-robust studies. Subjective judgement by different members of the research team will be used as the tool to carry out quality assessments</p>
Review objective	<p>The systematic review is on the research topic 'Managing agricultural commercialization for inclusive growth in Africa'. Its aims to firstly act as a resource book for field practitioners to put in place or facilitate projects to commercialize smallholder agriculture in Africa. Secondly it will consolidate the policy issues surrounding the research topic hence act as a tool that can aid policy formulation. Lastly it will identify existing research gaps that researchers can use to develop future research agendas.</p>
Data synthesis	<p>Data synthesis will be done using a meta-narrative approach. Key focal areas:</p> <ol style="list-style-type: none"> <li>1. Summarize major strands of policy debate: <ul style="list-style-type: none"> <li>■ Are there competing policy approaches? If so, what can we learn from them?</li> <li>■ What were the political or philosophical reasons behind particular policy choices?</li> <li>■ What was the experience of different clusters of countries?</li> <li>■ What evidence is there on the effectiveness or consequences of policies?</li> <li>■ What problems arise in interpreting policy impacts?</li> </ul> </li> <li>2. Unpacking issues pertaining to political feasibility that circumscribe the policy process in many countries in the region: <ul style="list-style-type: none"> <li>■ What are the major domestic political forces that shape the policy discussions?</li> <li>■ Do these political forces run counter to donor recommendations or pressures?</li> <li>■ What are the realities of budgeting / planning processes &amp; where do agricultural sector policies fit in?</li> </ul> </li> </ol>

	<p>3. Are there specific and well-documented policy or project experiences that we can learn from:</p> <ul style="list-style-type: none"> <li>■ Government policies or projects; NGO experiences; private sector activities.</li> <li>■ Particularly interesting if these are relatively unpublicized.</li> <li>■ Other organizations tend to cite the same cases, over and over...</li> <li>■ Who are the people / organizations that can provide detailed information on these experiences?</li> </ul> <p>4. other areas of focus:</p> <ul style="list-style-type: none"> <li>■ What are the major trends and changes in commercialization of food &amp; non-food agriculture?</li> <li>■ Marketing channels: supermarkets, distribution networks</li> <li>■ Exports of non-traditional crops and commodities (e.g., cut flowers, horticulture)</li> <li>■ The role of policy: where do governments fit in?</li> <li>■ Enabling infrastructure</li> <li>■ Tax policies, legal protections, etc.</li> <li>■ Managing commercialization</li> <li>■ What are distributional consequences and impacts on poverty?</li> <li>■ How are these impacts affected by policy choices?</li> </ul> <p>5. How convincing the evidence is for success or failure of agricultural commercialization in Africa?</p> <ul style="list-style-type: none"> <li>■ Analyzing the strength of the evidence found in literature</li> <li>■ Exploration of observed effects that are consistent</li> <li>■ Exploration of possible reasons for study inconsistencies</li> </ul>
Dissemination	<p>The findings from the systematic review will be published :</p> <ul style="list-style-type: none"> <li>■ Policy brief and/or technical paper</li> <li>■ Peer reviewed journal article and/or as a resource book for farmers, farmer organizations and their promoters, researchers and policy makers</li> </ul>

## APPENDIX 2

Table A2

Tabulation of studies reviewed (by type of paper) ▼

Study type	Author/Year	Country and area of focus
Master's Thesis`	Matonkonyane, 2001; Fundira, 2004; Sefoko, 2004; Sonjica, 2008; Mthembu, 2008 Chibanda, 2009 Dlamini, 2010; Baloyi, 2010; Van Der Heijden, 2010	South Africa: Contract farming; table grapes, citrus fruits; weavers; modern supply chains; Vegetables, Peanut butter, poultry, beef, collective farming
	Field 2009	Ghana: Vegetables
	De Bruyn, 2002	Namibia: meat
	Nkhor, 2004	Botswana: Livestock
	Moyo, 2010	Zimbabwe: Millet & sorghum
	Simelane, 2010	Swaziland: Dairy
PhD thesis	Makhura, 2001 ; Sartorius, 2003, Roets, 2004; Randela, 2006, Gadzikwa, 2008;	South Africa: Timber; Goats; cotton; collective action
	Masuku, 2003; Sartorius, 2003	Swaziland (Sugar)
	Emongor, 2008 Jagwe, 2011	Botswana, Namibia, Zambia: Fresh fruits Burundi, Rwanda, DR Congo: Bananas
Conference proceedings/ papers	Temu & Temu, 2005 Owusu & Owusu, 2010 Gebremedhin & Jaleta, 2010 Jayne & Muyanga, 2011	SSA: High Value Agricultural Products Ghana (fruits and vegetables) Ethiopia Africa

Study type	Author/Year	Country and area of focus
Others	Henson & Jaffee, 2008 Diza Rios & Jaffee, 2008 FAO & World Bank, 20v09 Chamberlain& Jayne, 2009 Diaz Rios et al, 2009; Heson et al, 2009; Henson, Masakura & Blandon, 2010a, b, c Ouma & Jagwe, 2010 Katengeza, Mangision & Okello, 2010 Henson et al (forthcoming); Keyser (forthcoming) ; Rao, Brummer & Qaim, 2011; Fischer & Qaim, 2011; Schipmann &Qaim, 2011; Rao & Qaim, 2011; Jaffee, Henson & Diaz Rios, 2011 Chamberlin & Jayne, 2011	Africa: quality, food safety standards Mozambique, Nigeria, Zambia (Cassava, Cotton, maize, rice, soybeans, sugar) Africa: quality, food safety standards Uganda: Bananas Malawi: ICT's & MIS  Africa: quality, food safety standards  Market access
Peer reviewed journal articles	Jayne, Yamano & Nyoro, 2004; Fafchamps and Hill, 2005; Barrett, 2006; Gabre-Madhin, 2006; Fafchamps, & Gabre-Madhin, 2006 ; Jayne, Mather& Mghenyi, 2010; Field, Masakura & Henson, 2010; De Silva, & Ratnadiwaka, 2010; Asingwire, & Okello, 2011; Freidberg and Goldstein, 2011	

Data extraction	<p>The following information/data will be extracted from the included materials:</p> <ul style="list-style-type: none"> <li>■ Policy recommendations/issues</li> <li>■ Research gaps and future areas of research</li> <li>■ Conditions under which commercialization works</li> <li>■ Conditions under which commercialization does not work</li> <li>■ Possible case studies highlighting failed and successful commercialization</li> </ul>
Quality assessment	<p>The methodological strengths and weaknesses of included studies of study design and conduct will be recorded. Studies will then be categorized into robust and no-robust studies. Subjective judgement by different members of the research team will be used as the tool to carry out quality assessments</p>
Review objective	<p>The systematic review is on the research topic 'Managing agricultural commercialization for inclusive growth in Africa'. Its aims to firstly act as a resource book for field practitioners to put in place or facilitate projects to commercialize smallholder agriculture in Africa. Secondly it will consolidate the policy issues surrounding the research topic hence act as a tool that can aid policy formulation. Lastly it will identify existing research gaps that researchers can use to develop future research agendas.</p>
Data synthesis	<p>Data synthesis will be done using a meta-narrative approach. Key focal areas:</p> <ol style="list-style-type: none"> <li>1. Summarize major strands of policy debate: <ul style="list-style-type: none"> <li>■ Are there competing policy approaches? If so, what can we learn from them?</li> <li>■ What were the political or philosophical reasons behind particular policy choices?</li> <li>■ What was the experience of different clusters of countries?</li> <li>■ What evidence is there on the effectiveness or consequences of policies?</li> <li>■ What problems arise in interpreting policy impacts?</li> </ul> </li> <li>2. Unpacking issues pertaining to political feasibility that circumscribe the policy process in many countries in the region: <ul style="list-style-type: none"> <li>■ What are the major domestic political forces that shape the policy discussions?</li> <li>■ Do these political forces run counter to donor recommendations or pressures?</li> <li>■ What are the realities of budgeting / planning processes &amp; where do agricultural sector policies fit in?</li> </ul> </li> </ol>

	<p>3. Are there specific and well-documented policy or project experiences that we can learn from:</p> <ul style="list-style-type: none"> <li>■ Government policies or projects; NGO experiences; private sector activities.</li> <li>■ Particularly interesting if these are relatively unpublicized.</li> <li>■ Other organizations tend to cite the same cases, over and over...</li> <li>■ Who are the people / organizations that can provide detailed information on these experiences?</li> </ul> <p>4. other areas of focus:</p> <ul style="list-style-type: none"> <li>■ What are the major trends and changes in commercialization of food &amp; non-food agriculture?</li> <li>■ Marketing channels: supermarkets, distribution networks</li> <li>■ Exports of non-traditional crops and commodities (e.g., cut flowers, horticulture)</li> <li>■ The role of policy: where do governments fit in?</li> <li>■ Enabling infrastructure</li> <li>■ Tax policies, legal protections, etc.</li> <li>■ Managing commercialization</li> <li>■ What are distributional consequences and impacts on poverty?</li> <li>■ How are these impacts affected by policy choices?</li> </ul> <p>5. How convincing the evidence is for success or failure of agricultural commercialization in Africa?</p> <ul style="list-style-type: none"> <li>■ Analyzing the strength of the evidence found in literature</li> <li>■ Exploration of observed effects that are consistent</li> <li>■ Exploration of possible reasons for study inconsistencies</li> </ul>
Dissemination	<p>The findings from the systematic review will be published :</p> <ul style="list-style-type: none"> <li>■ Policy brief and/or technical paper</li> <li>■ Peer reviewed journal article and/or as a resource book for farmers, farmer organizations and their promoters, researchers and policy makers</li> </ul>

Table A3

Tabulation of other studies reviewed (by research question) ▼

Research question	Relevant/related literature	Countries of focus in Africa
Impact of agricultural commercialization on poverty reduction nutrition/food security/income	Heltberg & Tarp (2001); Pinder & Wood (2003; 2006); Escola (2005); Gioe (2006); Henson et al (2008); Porto et al (2011); Graffham et al (2008); Bokosi (2008); Hendriks & Msaki (2009); Elamin et al (nd); Jaleta et al (2009);	Kenya; Rwanda, Malawi, Sierra Leone, Gambia, Ethiopia, Nigeria
Extent of commercialized supply chains in different countries (historical review of commercialization /lessons learnt)	Manyong et al (2005); Poulton (2006, 2007); NRI (2007); Jones (2007); Graffham et al (2007); Hazell (2007); Poulton & Tyler (2007); Poulton et al (2008); Guenette (2007); Divney (2008); Weiner (2007); OECD( 2008); Accord Associates (2008); Kleih et al (2008); Jayne et al (2011); Gebreselassie & Sharp (2008); Poulton et al (2008a); Tyler (2008a); Tyler (2008b); Tyler (2008c); Anstey (2008); Haggblade & Nyembe (2008); Posthumus (2010); Will (2010); Nweke & Haggblade (2010); Tefft (2010); Ngigi et al (2010); Kambewa (2010)	Kenya, Southern Africa, Ethiopia, Africa; Nigeria; Sub-Saharan Africa, Ethiopia, Rwanda, Ghana, West and southern Africa, Malawi, Zambia
Changing structure of domestic markets for food; trends in food retail spending; supermarkets	Doland & Humphrey (2000); Reardon et al (2003); Weatherspoon and Reardon (2003); Traill, 2006; Louw et al (2007); Louw et al (2008) Minten (2007); Tschirley (2007); Neven & Reardon (2008); Haantuba & de Graaf (2008); Narrod et al (2008); Omiti et al (2008); Chikazunga et al (2008a,b); Ndiyoi et al (2008); Emongor (2008); Louw et al (2009); Emongor & Kirsten (2006;2009)	Africa, Kenya, Zambia, South Africa, Namibia, Botswana, SADC, Madagascar
Commercial supply chains and structure of agricultural sector	Porto et al (2011); Graffham & MacGregor (2007); Copper & Graffham (2008); Graffham & Copper (2008); Legge et al (2008); Kambewa & Nyembe (2008); AgriSeta (2010); Minot & Ngigi (2008); Bekele (2010); FAO (nd)	Africa, Ghana, Ivory Coast, South Africa, Lesotho, Kenya, Ethiopia, Burundi, Rwanda, Malawi, Zambia, Uganda

Research question	Relevant/related literature	Countries of focus in Africa
Participation of smallholders in supply chains/high value markets (determinants, constraints, institutional arrangements, smallholder competitiveness)	Felgenhauer & Wolter (nd); Sartorius et al (2002); Masaku (2003); Angelucci (?); Omiti et al (2006); Gebremedhin et al (2006); Darroch et al (2006); Narrod et al (2007); Barnard & Taffesse (2007); Aversa (2007); Van Elzakker (2007); Poisot (2007); Webb (2007); Pender & Alamu (2007); Zoss & Pletziger; (2007); Vermeulen et al (2008); Alene et al (2008); Barrett (2008); Henson et al (2008); Poole et al (2010); Barrett et al (2010); Swinnen et al (2010); Nivievskiy et al (2010); Baltenweck (2010);Haggblade (2011); Elepu & Nalukenge (nd); Brooks et al, 2011	Uganda, Ethiopia, Tanzania, Africa, East Africa, South Africa, Swaziland
Environmental impacts of export horticultural sector	Garside et al (nd); Dolan & Humphrey (2001); Humphrey et al (2004); Stockbrige (2006); Ssemwanga & Nkutteko (nd); Wangler (2006); Gret (2006); IIED (2007); IIED (2008); Roma Tre (2007); Williamson (2007)	Eastern & Southern Africa ( Burundi, Comoros, Djibouti, Eritrea Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Uganda, Zambia and Zimbabwe)
Infrastructure and commercialized agriculture ; complementarities between public & private investments	Chitundu et al (2006); FAO (2008); Oni (2008); Okello et al (2010); Kirui et al (2010); Okello (2010); Tapelo (nd)	Kenya; South Africa, Africa, Nigeria, Zambia
Further expansion of sector	World Bank (2006); Ferrigno et al (2005); Ortman & King (2010)	Benin, Senegal, Uganda, Tanzania, Zimbabwe

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