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Smallholder Value Chains for Food Security

A Scoping Study with Particular Attention to Farmer Groups and Innovation Platforms Based on Landcare Principles

Bernard Wonder
17 April 2014

Cover Image: Machakos Landcare Group Engaged in Nursery Enterprise

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Abbreviations

ACIAR	Australian Centre for International Agricultural Research
ADB	African Development Bank
AGDP/W	agricultural GDP per worker
AGILE	African Grassroots Innovation for Livelihoods and Environment
AHI	African Highlands Initiative
AIFSRC	Australian International Food Security Research Centre
ARD	agricultural research and development
AusAID	Australian Agency for International Development
CAADP	Comprehensive Africa Agriculture Development Program
CBO	community-based organisation
CIG	common interest group
CIMMYT	International Maize and Wheat Improvement Centre
EAC	East African Community
EDP	enterprise development plan
FAO	Food and Agriculture Organization (of the UN)
FARA	Forum for Agricultural Research in Africa
FFS	farmer field school
FG	farmer group
GDP	gross domestic product
ICRAF	International Centre for Research into Agroforestry
ICT	information and communication technology
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IP	innovation platform
KADLACC	Kapchorwa District Landcare Chapter
KAPAP	Kenyan Agricultural Productivity and Agribusiness Project
KAPP	Kenyan Agricultural Productivity Project
KARI	Kenya Agricultural Research Institute
KLN	Kenyan Landcare Network
NEPAD	New Partnership for Africa's Development
NGO	non-government organisation
NLP	National Landcare Program
NRM	natural resource management
R&D	research and development
SSA	Sub-Saharan Africa
UWA	Ugandan Wildlife Authority

Foreword

The origin of this scoping study lies in the Australian Centre for International Agricultural Research's (ACIAR's) interest in sustainable solutions to the serious and ongoing food security challenges facing Africa. The Australian International Food Security Research Centre (AIFSRC) is continually searching for low-cost models suitable for application in African conditions and capable of producing enduring contributions to enhanced food security, economic growth and poverty alleviation. This study takes the Australian Landcare model, which has now been introduced in several African nations, including Kenya, Uganda, Tanzania, Rwanda and South Africa, and explores the scope for its wider application to enterprise development and market participation. It considers the human and social capital central to the development of Landcare as a community-based model and applies the concepts more broadly towards the commercialisation of smallholder agriculture and improved household welfare.

The author of the study, Bernard Wonder, is a Canberra-based consultant with extensive experience in Australian and international agriculture. Bernard is a former Deputy Secretary of the Commonwealth Department of Agriculture, Fisheries and Forestry, where he led the development and implementation of the National Landcare Program in the early 1990s. Bernard is also a former Head of Office at the Productivity Commission and Executive Director of the Australian Bureau of Agricultural and Resource Economics (ABARE). He was awarded the Public Service Medal in 2004 for outstanding public service, particularly for the development and implementation of the Agriculture – Advancing Australia initiative and the National Action Plan on Water Quality and Salinity.

Several staff from ACIAR and our partner organisations helped to bring this work to fruition. Dennis Garrity, Mieke Bourne and Clinton Muller from the International Centre for Research into Agroforestry (ICRAF) provided valuable input, particularly with the questionnaire circulated in mid 2013 to assist with the study. Simon Hearn and John Dixon from ACIAR have both made helpful suggestions at key points during the study, as have Liz Ogutu, Bronnie Anderson-Smith and Fiona Wyborn from AIFSRC.

This scoping study provides an important contribution not only to the AIFSRC's future work program but to the broader agriculture-for-development community in Africa, who seek to harness the power and entrepreneurship of African smallholder farmer-groups to better access markets and assist in the transformation of African agriculture to deliver food and nutrition security.

Mellissa Wood
Director

Key Points

- Food security and related poor health and poverty remain significant problems for many east African smallholders.
- 'Poverty traps' persist, denying smallholders the opportunity to break away from an ongoing cycle of malnutrition, low productivity and lack of income.
- Smallholders face many obstacles, including low yields, very limited land availability, poor infrastructure and limited access to inputs and services.
- A changing social and economic environment is, however, bringing new opportunities: population growth is widespread; urbanisation is occurring at a rapid rate; economic growth is strong in the region; and modern food retailing requiring more-sophisticated production, distribution and marketing is emerging.
- Currently, smallholders supply 80 per cent of East Africa's food production, but as few as 10 per cent of the smallholders are commercial producers. While the benefits of market participation may be significant, so too are the costs and risks of market entry.
- A comprehensive agenda addressing smallholder market participation would be broad and embrace the wider policy environment. Nevertheless, there is significant potential for action by smallholders to improve their position.
- Collective action undertaken by farmer-groups is one market participation strategy that smallholders can use to achieve a viable scale of production, pool their risks, combat high transaction costs, enhance their negotiating position and contain expensive price discovery.
- There is no particular blueprint that farmer-groups should follow. However, Landcare is an exemplar model to guide the establishment and conduct of farmer-groups. It is a 'grassroots', community-based initiative empowering its members; it relies on the work of its members but seeks public and private partnerships to martial necessary support; and it makes effective use of accumulated social capital to pursue group objectives across farm boundaries.
- Farmer-groups focusing on enterprise development and market participation require similar qualities to those successfully adopted for stewardship of natural resources, but they also need to engage others in the value chain to facilitate their production and market access.
- An effective mechanism for networking by farmer-groups is an innovation platform (IP), comprising value-chain partners supplying inputs and performing a variety of downstream storage, distribution, product transformation and marketing functions, supported by public and private organisations able to provide assistance with mutually beneficial facilitation, research and capacity building. The Landcare model again provides guidance for how an IP might best conduct its business.
- Both farmer group and IP concepts enjoyed the support of respondents to a Kenya-focused questionnaire developed for this study. While major organisations such as the Kenyan Agricultural Research Institute and the Ministry of Agriculture were seen as playing a highly valued support role, there is a need to be sensitive to the underlying ownership of IPs and member preferences concerning IP business and directions.
- A Kenya-focused, integrated farmer group – IP framework is presented, together with possible next steps regarding implementation. The proposed model provides the means for smallholders to obtain long-term benefits from farmer-groups, IP linkages along the value chain and underlying support mechanisms. It could be a national or regional initiative but should probably be piloted first on a smaller scale, to evaluate performance and inform a cost–benefit assessment, prior to considering a wider rollout by government and other funding agencies.

Executive Summary

This is the final report of a scoping study into *Smallholder Value Chains for Food Security* prepared for the Australian Centre for International Agricultural Research (ACIAR). It has been undertaken for and funded by the Australian International Food Security Research Centre (AIFSRC), an Australian Government initiative that sits within ACIAR.

The focus of the report is the use of farmer-groups and innovation platforms (IPs) to promote smallholder market participation. The natural resource management (NRM) experience with community-based Landcare programs in a number of countries is seen as a relatively low-cost but potentially effective and durable approach to increased smallholder focus on commercial agriculture and the attendant food security, poverty alleviation and household welfare benefits. In particular, Landcare is driven by its membership and thereby empowers participants to address issues of common interest identified by groups. Their individual human and accumulated social capital bring skills and expertise as well as cohesiveness and trust to the work of the group, and these are qualities essential for enterprise development as well as NRM.

This study concentrates on several East African nations, particularly Kenya, Tanzania and Uganda where Landcare initiatives have been introduced. However, the analysis has wider application to other East African countries such as Ethiopia and Rwanda, as well as Sub-Saharan African countries more generally, where collective action may be an option for enterprise development. A questionnaire used in the study to obtain expert input into the establishment and conduct of farmer-groups and IPs is focused on Kenya, but the results reported most likely have wider relevance for African smallholder agriculture.

Smallholder Welfare

In East Africa around 50 per cent of people live in poverty, and some 80 per cent of the poor live in rural areas. Life is hard for the typical smallholder operating a farm of less than 2 hectares, with food deficits occurring regularly in dry years and household income too meagre to reliably meet health and education needs. Food insecurity in terms of malnourishment is serious, with around one-third of people in Kenya, Tanzania and Uganda being undernourished in recent years. The incidence of stunting among children younger than 5 years of age shows a similar pattern to that described for malnutrition.

Smallholders account for three-quarters of food production in Kenya, Tanzania and Uganda, with much of the labour supplied by rural women. All three countries have been net food importers for the past 30–40 years and, with population forecast to increase dramatically by 2050, net food imports may increase further if domestic supply is unable to respond to increased demand.

Even by African standards, East African yields for maize (the principal staple) lag seriously behind. The same is true for cereal grains and a range of other products. Unlike the intensification strategies followed elsewhere, East Africa has relied on increasing the area used for agriculture to expand its food production. However, this is no longer possible, as reflected in the declining per-capita land access over recent decades due to scarcity of land.

Together with poor yield performance, East African agricultural GDP per worker has shown little growth, with the result that it is about the same now as it was 25 years ago. There is an extensive literature explaining this poor productivity performance; key factors include limited access to and expense of inputs, slow and limited uptake of technology and the generally low standard of infrastructure. Adding to the challenges are the difficulties that smallholders face in accessing finance due to lack of collateral and credit history as well as the risk premium paid on approved loans. Micro-finance institutions have relieved the situation somewhat in recent years, particularly in peri-urban areas, but the longer term finance sought by smallholders is difficult to procure at an acceptable price.

Emerging Opportunities

Despite the difficult environment facing East African smallholders, some positive developments have given rise to emerging opportunities: Sub-Saharan Africa (SSA) is set to become the world's second-most populous region after South Asia; urbanisation is occurring at a rapid rate; Africa contains several of the fastest growing economies in the world; and modern food retailing requiring sophisticated production, distribution and marketing approaches is emerging alongside traditional retailing methods and structures.

Presently, smallholders are supplying 80 per cent of Africa's food production, but it remains to be seen whether and to what extent they will adjust successfully to changing markets and thereby enhance their incomes, food security and command over goods and services. Certainly, there have already been some impressive achievements, for example in the Kenyan dairy industry and several horticultural activities; however, the vast majority of smallholders would need to undertake significant adjustment in order to take advantage of changing market demands and associated opportunities. To a significant extent this is the case, because many opportunities lie in expanded production of non-staples (e.g. fresh fruits, vegetables, fish and dairy products) that are not the major part of smallholders' current production. Opportunities may also emerge in traditional markets such as Africa's grain market, where there is potential to displace burgeoning imports.

In many respects the developments in Africa make for something of a watershed in that smallholders may have a new chance to break away from the 'poverty trap' that has historically dogged so many and condemned them to poor food security, health, education and related outcomes. However, the majority of smallholders face what many would see as daunting challenges—there are only about 10 per cent who are currently regarded as commercial producers, with the remainder either locked into subsistence or wanting to be commercially involved but lacking the assets to do so. It is this latter group that is the target for initial efforts to increase smallholder market participation. A major challenge is to overcome what many smallholders perceive as the daunting risks of market entry associated with commitment of their extremely scarce resources in an uncertain and high-cost environment that will often make subsistence a lower yielding but safer and more attractive option.

The Challenges of Market Participation

The transition from smallholder subsistence or semi-subsistence to a more commercial focus will require engagement with the value chain that connects agricultural producers to final consumers via various incremental value-adding steps, such as product aggregation, storage, processing, distribution, wholesaling and retailing. The process is highly dynamic, with consumers continually changing their preferences, and market and government requirements for food safety being expressed through standards, certification and the regulatory regime. Furthermore, meeting these requirements entails costs that cannot always be passed on to consumers in the competitive environments often characterising food markets.

In many cases much of what would help smallholders to participate successfully in the value chain is beyond their reach, as the key decisions lie with government. For example, the provision of infrastructure has significant implications for what can be taken to market. There are also many governance issues concerning macroeconomic management, competition policy, land tenure, product safety and contractual law that affect smallholders but are essentially determined outside the value-chain environment. Some issues affecting the competitiveness of value chains are national or international in their jurisdiction (e.g. trade restrictions affecting African food exports and imports).

Smallholder Collective Action through Farmer-groups

Notwithstanding the breadth of the agenda to be considered when addressing smallholder competitiveness, there is much that can be done by smallholders to better position themselves for value-chain participation. Of particular interest is the use of farmer-groups—either informally structured and perhaps part of a broader farmers' association; as party to a contractual farming arrangement involving a processor or retailer; or possibly as a formal entity with a constitution and subject to legislation, such as a cooperative.

Farmer-groups can be seen as a response to imperfect markets, where high transaction costs, property right uncertainty, poor availability of market information and costly price discovery make it difficult for markets to function efficiently and generate competitive outcomes that serve the interests of farmers and their partners in the value chain. Farmer-groups can harness the power of collective action to secure better outcomes than those possible for individuals in input and output markets, and are a mechanism for pooling risks (e.g. production shortfalls due to adverse seasons) as well as a vehicle to strengthen negotiating positions with other actors in the chain.

In addition to the above mentioned market-power and transaction-cost advantages conferred by farmer-groups, there are other services that can be offered and deployed more effectively in a group context. For example, lending risks are sometimes pooled across groups; and finance products can be bundled with other services such as insurance, input procurement and training. Rural women, who may otherwise have difficulty securing finance, may be more successful as a group, using joint cash flow for collateral purposes. International donors in partnership with African banks have contributed significantly to financial instruments, usually through guarantor programs that facilitate the availability of lower interest loans.

Farmer-groups can also make effective use of information and communications technology relevant to group decision-making by sharing information and using available technology to overcome remoteness and isolation from markets. Increasingly, mobile smart phones and tablets are helping smallholders in a wide range of applications, from market information and transacting business to weather forecasts and pest and disease outbreaks.

The future role and contribution of farmer-groups need not follow any particular blueprint governing their structure or behaviour. Rather, their format is best left as flexible, to respond to particular circumstances. Regardless of their format, there are some prerequisites for group success, including group leadership and cohesion as well as several other factors discussed in the report.

Some farmer-groups will be based on existing social or faith-based groups; whatever their origins, group members will benefit from acquiring skills to make them effective participants as well as equipping them with the expertise needed for the chosen enterprise(s). It may be in the interests of other value-chain participants (e.g. processors or retailers) to assist smallholders with relevant training. In addition, there may be scope for public–private partnerships where donors and/or government agencies jointly sponsor the development of smallholder capacity with value-chain participants.

A critically important element of the strategy to build the capacity of smallholders and their farmer-groups is the attention given to rural women. Notwithstanding the fact that women in East Africa own only a small proportion of land, they are responsible for generating a significant part of agricultural production. Unfortunately, however, women are not well placed to undertake relevant training as they have inferior access to assets and technology. One option for facilitating improved training for rural women is to make use of farmer field schools (FFSs); there is significant potential to use the existing network of FFSs in SSA for this purpose.

Innovation Platforms, the Value Chain and Farmer-groups

A further initiative that can assist smallholder farmer-groups and others in the value chain to address constraints and opportunities is the IP. An IP comprises a dynamic membership drawn from the public, private and non-government sectors with interests in the success of the chain and preparedness to work together to achieve individual and through-chain goals.

The work of IPs can assist value chains by focusing their direction, assessing options to address issues, and implementing solutions in the interest of improved performance. In the early stages of an IP, public sector and NGO participants typically play key roles, but responsibilities often shift to other members of the IP, including farmer-groups, as the activities become more 'hands on'.

A particularly important facet of an IP's work is research and development (R&D). The emphasis on R&D is very much a collaborative one, where research projects are a product of stakeholder interaction and a response to specific constraints and opportunities identified in the IP.

Landcare as a Model

Given the significant role envisaged for farmer-groups and IPs, the question arises as to whether there is an exemplar model that may guide East African smallholder efforts to participate in value chains. One such model is Landcare. While it has its origins in Australia, Landcare has been taken up in South Africa (in 1997) and, more recently, Uganda (in 2003), Kenya (in 2005) and Tanzania (in 2008). Landcare is based on the self-determining actions of farmer-groups, and on the partnerships formed with research and donor communities as well as local, provincial and national governments.

Landcare adopts a 'grassroots' approach based on the efforts of a voluntary movement of local people empowered to plan and implement their own programs for sustainable land management, with the support of government and the business community. In part, Landcare groups have been successful because of the skills and expertise of their members, as well as the social capital they have accumulated over time that enables problem identification and solutions across farm boundaries. Wherever Landcare has been introduced, significant resources have been devoted to building group capacity and support. Facilitators skilled in working within groups to catalyse their direction and broadly supported approaches to land management have proven to be key resources for helping groups realise their objectives.

The successful development of Landcare in Uganda is particularly relevant to this study, as it appears to be the only East African nation using IPs to advance the work of Landcare groups. IPs include farmer-groups, community-based organisations, government departments and research institutions focused on resource conservation and related benefits for agricultural productivity. IPs have helped with the training of facilitators, the resolution of issues concerning smallholders and the exchange of information between farming communities. They have also been the host organisation for researchers to collaborate with farmers in an interactive and participatory model that has both assisted researchers with their work and benefited farmers.

Expert Input on Key Issues

To further test the veracity of the proposed use of farmer-groups and IPs, it was decided to obtain expert input into how such arrangements might best work in Kenya, although it was expected that the information provided would have broader relevance. For this purpose, a questionnaire was developed, and input was provided by 43 respondents drawn from government and international agencies, research organisations, industry and NGOs in Kenya and elsewhere.

There was solid support from respondents for both the farmer-group and IP concepts. Among the various benefits attributed to farmer-groups, the promotion of farm profitability, access to knowledge and services, and the opportunity to undertake activities best suited to a group rather than individual smallholders featured most prominently. Respondents identified several factors important for successful group establishment, with group leadership, gender, governance arrangements, and tangible and early outcomes proving particularly popular. They also pointed to the significance of members' skills and the quality of their interaction in the group environment as key to the success of the farmer group.

According to the results of the questionnaire, farmer-groups were seen as an important forum for learning, although strategies for delivery of training need to be sensitive to local community preferences and cultural practices. This seems especially the case for gender-related issues. Further, the availability of trained facilitators was seen as important for dealing with and overcoming the many challenges likely to be confronted by farmer-groups. There were several suggestions as to where to locate such people, but the final choice was seen as something best left to individual farmer-groups depending on their particular circumstances and available options.

IPs were seen by two-thirds of respondents to the questionnaire as critically important for farmer-groups to participate in, with a view to enhancing their prospects for market participation. The most frequently cited benefits were access to agricultural extension advice and training, local infrastructure, market and product choice advice, procurement of inputs and market information. While farmer-groups and their value-chain partners were seen as foundation members of IPs, the identification of other private- and public-sector participants tended to rely on the selection of IP activities, and was therefore best left flexible to suit specific demands. These could be quite diverse, ranging from capacity building of farmer-groups to overcoming logistical hurdles, food safety concerns, and trade barriers affecting parts of or the entire value chain.

IPs with a county/district or subcounty/subdistrict focus were seen as appropriate, although there was also considerable support for a national focus to deal with broader issues affecting the value chain. One advantage of IPs at the county/subcounty or district level is their potential access to existing centres of research and administration such as the Kenya Agricultural Research Institute (KARI) and the network of offices of the Ministry of Agriculture. The benefits of aligning IPs with such centres would be significant, particularly in the early stages when public agencies may be able to offer critical assistance and respond effectively to the research needs of the groups. However, potential tension exists between what might be convenient versus what members of IPs and farmer-groups might prefer in the interests of enterprise development and performance of the value chain. Any such issues should not, however, be insurmountable providing that the various parties involved are sensitive to the underlying purposes of the groups.

An examination of some current or recent farmer group and IP activities in Kenya and elsewhere in East Africa provided valuable information for comparison of the key messages delivered by respondents to the questionnaire used in this study. Generally, the experiences of others reinforce the findings reported from the questionnaire. The contribution that R&D organisations could make in the early phases of an IP was seen as particularly important. So too was the distribution between what issues could be dealt with using local or regional rather than national IPs. In general, there are no simple solutions or rules determining what is dealt with where, and the best formulation seems to be a mix of platforms—dealing with the more strategic issues having broader relevance at the national level, while leaving the specific interactions along a chain to be handled by the operational local-, county- or district-level IP. Other studies reporting on issues affecting farmer-groups and IPs also identified the training of rural women to be very important, particularly given that they are frequently marginalised. Farmer field schools were seen as a feasible means of building the empowerment of rural women under these circumstances; however, the questionnaire results reported here point to the diversity of community opinions regarding what training strategy will work best and the need, therefore, to tailor local solutions to prevailing circumstances.

One consistent message from this and other studies is the significance of not losing sight of group and individual ownership, inclusiveness and empowerment for the effective performance and success of farmer-groups and IPs. This is not to say that other factors, including technical, financial, logistic, innovation and economic issues, will not be central to the viability of a farmer group or IP. Rather, it reminds us that groups and platforms, by their nature, are forums where interaction is critical for success. Hence, personal and social skills, including leadership, participation, tolerance for mistakes, trust and preparedness to share are also likely to be key ingredients for success. In most cases individual smallholders will be left with no enterprise at all unless the collective work of the group can achieve its objectives.

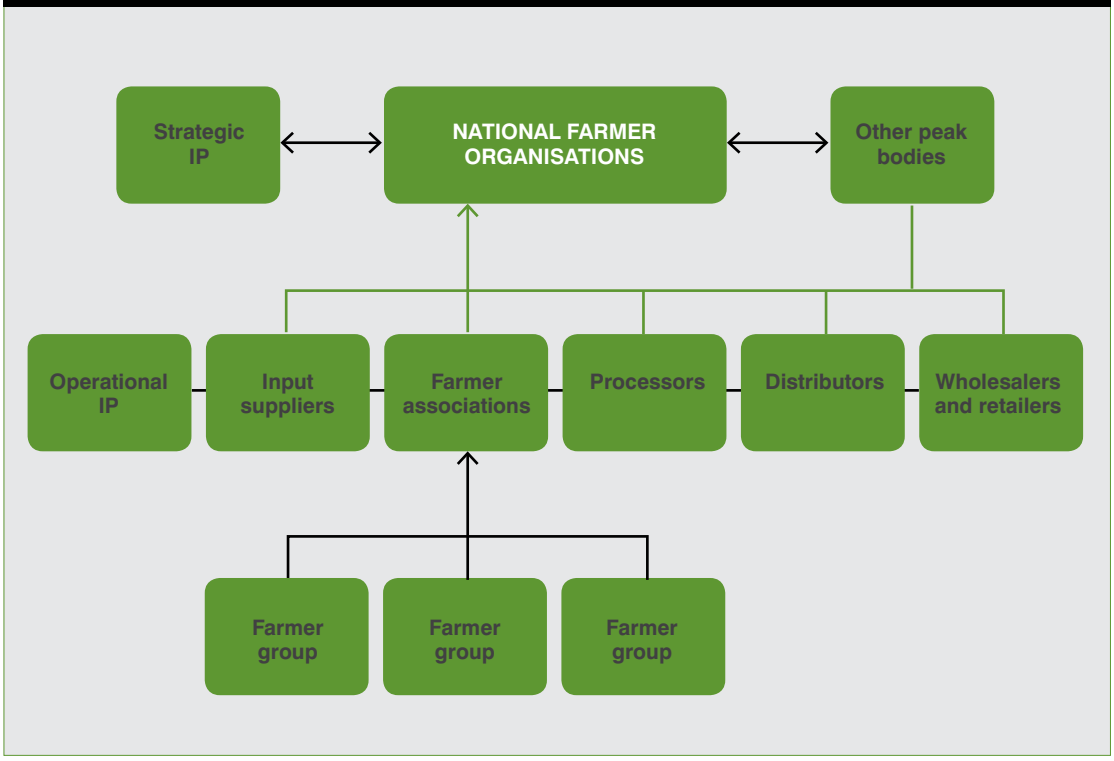
Proposed Model Framework

Against this background, and for all the reasons mentioned earlier, it is apparent that the Landcare approach is a sound basis for the establishment and conduct of farmer-groups and IPs. The manner in which Landcare has been introduced in South Africa and East African nations is particularly relevant as it has shown how human and social capital can be developed and applied in a smallholder context. The World Bank's Social Capital Implementation Framework outlines the elements of social capital and provides further insight into practical steps to help smallholders and others work together in a group environment.

Using the Landcare approach to group development and member participation and interaction, a model framework focusing on Kenya is presented in Figure A. It shows how farmer-groups and IPs can come together to address their mutual interests.

Farmer-groups are a fundamental unit of the framework. They may be an adaptation of an existing community group or something new, but their underlying purpose is enterprise development with a view to market participation and increased household incomes. Smallholder interest in the value chain lies in the partnerships that can be formed with suppliers of inputs and services, and on the many segments beyond the farm adding value on the forward journey to the market. This interest is based on the opportunity for both farmer-groups and their value-chain partners to work together on an operational IP to address issues impacting the competitiveness and performance of the chain. Often, farmer-groups will need to aggregate into associations in order to acquire the scale that attracts interest from their partners. This may also be true for other participants such as transporters or packaging/processing businesses, although probably less so than for farmers.

Figure A: An Illustrative Model for Farmer Groups and Innovation Platforms



Farmer Groups supported by: Government agencies, research institutes, NGOs and facilitators providing coordination and demand driven training, capacity building, communication, backstopping, monitoring and evaluation services.

Operational IPs may also include other public and private agencies and organisations that are not commercially focused value-chain participants but nevertheless play a critical role in support, coordination and R&D. Facilitators or brokers to help progress the work of farmer-groups and IPs would be involved. Research and government agencies could both play significant roles, as could NGOs and peak industry and farmer organisations. Usually, any services provided by these participants would be demand driven by the needs of the IP.

While operational IPs are concerned mainly with facilitating regular business from product development to point of sale, their strategic counterpart in Figure A focuses on higher level issues affecting the entire chain or multiple chains. These may be production focused but could be distribution or infrastructure related, or might involve food safety, trade or biosecurity regulation. Again, they would need a support structure such as a secretariat to progress their agenda, and research services to assist with innovation. Typically, those involved in a strategic IP will have a wider economic focus and be in a position to engage government and decision-makers.

Most, if not all, of the elements outlined in Figure A exist today in Kenya in some form or another, but they do not appear to be part of an integrated approach as presented here. Other countries were not studied, so it is possible that a similar model is in place somewhere else; however, this seems unlikely as no such reference was found in the literature search conducted for this project. What is outlined in Figure A would have broader applicability beyond Kenya and could, with further input to account for local conditions, be adapted in other East African nations and possibly other smallholder environments.

Further Development and Implementation of Framework

A next step would be for government and other relevant decision-makers to decide whether to adopt or further develop either the framework outlined here or some variant adapted to particular circumstances. This would most likely involve extensive stakeholder consultation and a detailed cost–benefit assessment of a specific proposal, including the extent of proposed smallholder coverage, the number of farmer-groups and IPs, and the related costs and benefits expected to be generated over time.

Particular agencies such as KARI and the Ministry of Agriculture have comparative advantage in playing a public-sector agency role in implementation of such an initiative. Both have a network throughout Kenya and a charter that goes to the heart of addressing food security and poverty alleviation. However, smallholder communities and value-chain participants will understandably wish to drive the directions of a project from its inception, and so any public-sector involvement will need to be sensitive to potential ownership- and empowerment-related concerns held by smallholders and other beneficiaries.

Many challenges and hurdles can be expected in the rollout of a farmer-group–IP initiative. As with many new and successful initiatives, champions with vision and drive are essential. Making use of what is already there rather than creating new bodies that risk duplication and divisiveness could also be important, together with the availability of facilitators and brokers to play a catalytic role in moving farmer-groups and IPs forward to achieve early progress towards desired outcomes.

R&D agencies could play a crucial role. In particular, their early input into what enterprise developments might be feasible and preferred from both the smallholder and wider value-chain perspectives could be very useful, providing that it is a demand-driven response to a research agenda owned and developed by those affected. Most enterprise activities will require significant capacity building and assistance from a range of public- and private-sector organisations. Many areas require attention, including the development of knowledge and expertise concerning particular enterprises, governance, gender management and participation skills essential for group performance and a long-term and sustainable project.

Final Remarks

The attraction of pursuing a farmer-group–IP framework lies in the contribution it can make to breaking the 'poverty trap' that food insecurity brings to smallholder communities. It relies not only on the collective action of smallholders to achieve critical mass, but also on networking smallholders into the value chain where their produce is transformed and marketed. Ultimately, the effectiveness of the framework would be determined in part by how well it is applied, but this cannot be done in isolation from the wider economic, institutional and policy environment that shapes competitiveness. Many infrastructure, finance, trade, tenure, legal and regulatory issues are also at play, with their own impacts on smallholder competitiveness in the market place. These issues are beyond the scope of this study and are likely to vary in their significance between countries and regions. They should not, however, rule out further consideration of the framework put forward in this study as a strategy to address food insecurity.

ACIAR and AIFSRC may consider the scoping study for identifying future work seen as potentially worthwhile for inclusion on the research agenda. Feedback from partner organisations, governments and broader stakeholders could assist in this regard; hence, wide dissemination of the findings of the study is recommended.

1. Background

This report is the final product of *A Landcare Based Approach to Food Security in East Africa—Scoping Study*, undertaken for the Australian International Food Security Research Centre (AIFSRC) within the Australian Centre for International Agricultural Research (ACIAR). An earlier milestone report was provided to AIFSRC in 2013.

The main purpose of the study is to examine the scope for advancing food security in rural East Africa, particularly Kenya, Uganda and Tanzania, through improved smallholder participation in value chains for food. The interest in achieving wider integration of smallholders in value chains originates from the potential to enhance on-farm incomes and improve the availability and stability of food supplies, and thereby increase smallholder family welfare. Furthermore, increased incomes enable smallholders and their families to obtain better access to other essential services, including health and education, and also improve their standard of living and lifestyle in terms of the basket of goods and services they can afford.

Because smallholders typically control very small areas of land and are therefore unable to produce significant marketable surpluses of food after satisfying family requirements, it is difficult, if not impossible, for most of them to enter a value chain as individuals. This would be the case even after putting aside other formidable impediments such as the absence of storage, transport and basic processing facilities. Moreover, the transaction costs incurred by other actors in the chain when engaging smallholders is often unacceptably high for the volumes likely to be procured from single sellers, and the product obtained may vary beyond the standards increasingly required by more-sophisticated and -discriminating markets.

Notwithstanding the challenges that individual smallholders face in their efforts to supply markets, their numbers in many areas of East Africa are quite concentrated; when considered as groups, they become a more viable proposition in terms of supplying commercial quantities of food to village and urban markets. As a group they also become more attractive for value chains to engage, as search and related costs become less problematic, and other incurred costs (such as those relating to sorting, grading, washing, packing, transporting and ultimately marketing food) can be spread over an increased quantity, with accordingly lower unit costs.

Farmer-groups can be the strategic centre for determining what smallholders in particular localities can potentially take to market. They can also be the negotiating agent with other actors in the value chain, with significantly more marketing and procurement power than any individual might be able to exercise. However, in order for such groups to function effectively, certain negotiating and strategic skills are critical to achieving long-term success. They will also need an effective understanding of how to best undertake their work to maximise the creativity, efficiency and effectiveness of their efforts, as well as a broad sense of ownership and empowerment among the group members.

Collective action by smallholder farmers in Africa is not new and has been undertaken in various forms of common interest groups (CIGs). One such approach introduced over the past decade in East Africa (and before that in South Africa) has been the community Landcare movement. These groups are of particular interest in respect of the skills, expertise and knowledge they have built to work together in establishing partnerships to help advance their common interest. The focus of Landcare groups has been resource conservation for sustainable agriculture and ecosystem integrity through soil, land, water, agroforestry and broader environmental activities. Many activities have been undertaken in difficult locations prone to erosion, loss of vegetation, weed invasion, water pollution and, more recently, climate change and its associated problems.

The success that Landcare groups have brought to NRM is attributable to many factors, but probably the most important have been the 'grassroots' empowerment of group members, their ownership of the agenda, and the partnerships they have forged with diverse groups able to assist with the achievement of desired outcomes. Landcare has been able to thrive across individual property boundaries based on the common interests of those involved. The outcome of community Landcare in both Africa (where it is relatively young) and Australia (where it is now 25 years old) has been to satisfy the wider public good of resource conservation as well as enhance the land, vegetation and water resources that are central to farm family welfare.

Given the significance of food security and related welfare issues in East Africa and the cost of providing enduring solutions to these problems, the Landcare model is of particular interest for two reasons. First, if it is beneficial for smallholders to work together to improve their economic and human welfare (issues that are discussed in some detail in subsequent sections of this report), then Landcare's success in the NRM arena may have much to bring to the challenges of similar groups achieving broader objectives. Second, Landcare involves a group approach amenable to partnerships with others and having catalytic funding from public and private sources; it is therefore very much about landholders taking responsibility for their own future welfare, and depending less in the longer term on others to make large taxpayer-funded expenditures to address the symptoms of re-appearing problems rather than the underlying causes.

The focus of this report is why and how it might be beneficial to promote the participation of smallholders in East Africa in the value chain. If there are demonstrable benefits associated with this approach, it is of interest to know what existing methodologies might prove valid and effective in generating results using familiar techniques that may bear early dividends. Should Landcare and other relevant initiatives be found to be potentially helpful in this regard, a next step would be to look at how such a model might work in one East African country before other studies look more broadly at how to build elsewhere on the results reported here.

The report is presented in 12 sections. In section 2 the focus is on the nature of smallholder enterprises and their sources of income, as well as on their current food security and health status. In addition, the contribution of smallholders to food markets and their household food expenditure are discussed.

Recent patterns of smallholder production and related use of direct and indirect inputs are examined in section 3. There are some significant changes occurring in the broader African and international food-marketing environment of future interest to smallholders. These are addressed briefly in section 4. The extent to which smallholders are already involved in agricultural and food markets is the stepping-off point for assessing what might be required to boost their future involvement with the agri-food value chain. This and related smallholder market-engagement issues are canvassed in section 5.

Notwithstanding the many challenges that smallholders face should they contemplate more-active market participation, there are several initiatives that might assist early progress. Of particular importance is the creation of scale in output or input markets. Collective action in the form of smallholder farmer-groups may be one such mechanism as it may prove effective both for smallholders and upstream and downstream participants in the agri-food marketing chain. Together with some other models, it is examined further in section 6.

The key factors requiring attention for the successful establishment of farmer-groups, and the smallholder skills and expertise critical to effective group performance, particularly as they concern rural women and other interests in the value-adding chain, are outlined in section 7. A well-functioning farmer group, while important in its own right, will require links with others in the value chain to successfully market their produce. One mechanism for meeting this need is the IP; its role and the significance of agricultural R&D for its performance are discussed in section 8.

The study turns, in section 9, to Landcare and its relevance for farmer-groups. Landcare is at different points in its development in East Africa, and discussion of its progress in the land management area in Uganda, Kenya, Tanzania and South Africa is presented with a view to wider application of the underlying ideas in the value-chain context.

Section 10 deals with how farmer-groups and IPs might assist with engagement in the value chain in Kenya. A questionnaire designed to seek expert opinion on this subject is outlined, together with the results obtained from Kenya-based and international respondents. The findings here are compared with those found in several other studies of farmer-groups and IPs in section 11.

In section 12 a framework for a Kenyan farmer-group–IP model is outlined, and in section 13 the main findings and recommendations of the study are presented.

2. East African Smallholders, Food Security and Food Markets

2.1 Smallholder Enterprises and Incomes

East African smallholders live and farm in four of the major farming systems outlined by Garrity, Dixon and Boffa (2012). In order of their total population size in 2010, the regions are maize–mixed farming (96 million), agro-pastoral (93 million), highlands perennial (65 million) and pastoral (35 million). The maize–mixed farming, agro-pastoral and pastoral systems extend to several areas of Sub-Saharan Africa (SSA); and the highlands perennial farming system is focused in the east. Four of the six farming subsystems (southern highlands, central Kenya, western Kenya and Mount Kilimanjaro) are accounted for in their entirety by Kenya, Uganda and Tanzania, with a fifth farming subsystem (the Albertine Rift) located in Uganda and Tanzania but extending also to the Democratic Republic of Congo, Rwanda and Burundi.

Notwithstanding the facts that Africa contains 10 of the 20 fastest growing economies in the world (IMF 2012) and gross national income per capita in developing SSA nations has grown significantly in recent years after decades of stagnation, some 47.5 per cent of SSA's population continue to live in extreme poverty. Garrity et al. (2012) have reported that rural poverty accounts for more than 80 per cent of total poverty in eastern and southern Africa. In the four East African farming regions identified above, the total population is approximately 290 million and around 50 per cent of these people live on less than US$1.25 per day (Garrity et al. 2012, p. 12). The situation is worst in the highland perennial farming system, where 59 per cent of the rural population live in poverty.

Of the harvested food crops, maize is the most important, but many others, including root crops (in particular, sweet potato and cassava), cereals (grain sorghum, millet), legumes and pulses feature in smallholder production across the four farming systems together with livestock (especially cattle, goats and poultry).

A typical smallholder farm household profile outlined by Garrity et al. (2012) for the maize–mixed farming system (based on Food and Agriculture Organization (FAO) data) is reproduced in Box 1.

Box 1: Typical Smallholder Farm Household Profile

A typical smallholder five- or six-person family farm has a cropped area of 1.5–2.0 ha, of which 0.5–1.0 ha is planted to maize, and about half as much to other cereals such as sorghum, millet, rice or wheat. Small areas of cassava and sweet potatoes are also grown. Beans, groundnuts and other legumes are cultivated on another 0.25 ha. Small areas are planted to cotton and coffee, and the rest to a wide range of other crops.

The family owns two or three cattle and uses oxen to plough the land. As the availability of cattle (and grazing) declines, cows are increasingly used for draft power, a task for which they lack strength and which serves to reduce their fertility.

Typical yields are low—around 1.2 t/ha for maize and 500 kg/ha for beans or other pulses. Maize and other cereals would account for 80 per cent of total food production. The household would be self-sufficient in average to good years and in deficit during drought years.

One son works in the city or in the mines and sends occasional remittances that are used to pay for school and medical fees and clothes. Home-grown maize is the main source of subsistence, and cash is obtained either from off-farm activities or the sale of agricultural products such as maize, cotton, coffee and milk. Although household income is above the poverty line in average seasons (but falls below the poverty line in drought years), lack of cash is a major constraint on the purchase of improved inputs.

While the profile described in Box 1 serves to illustrate the smallholder's family-farm circumstances, it is important to recognise the significant diversity among East African smallholders. For example, in Kenya, where the mean smallholding is 2.3 ha, average farm size in the central and western highlands is only 1.2 ha and 0.97 ha, respectively (Kibaara et al. 2008). Of major significance is that those smallholders with less access to land are unable to include as many or as large enterprises and will frequently, if their finances permit, be net purchasers of food. Furthermore, the socioeconomic and health status of the smallholder family can change over time depending on largely unpredictable health and climatic factors.

Yamano and Kijima (2010) have estimated average incomes for Kenyan, Ugandan and Ethiopian rural households. In Kenya they found average per capita incomes (in constant 2005–06 prices) to be US$392 and US$333 in 2004 and 2007, respectively. Ugandan per capita incomes were less than half the level in Kenya, while Ethiopian smallholders were only able to achieve per capita incomes less than one-third those of their Kenyan counterparts. The proportion of income derived from cropping sources was far more important in Uganda and Ethiopia (64.0 and 52.5 per cent, respectively) than Kenya (35.8 per cent). Livestock-based income, on the other hand, was more important in Kenya (24.2 per cent) than Uganda (12.7 per cent); and Ethiopia relied more on livestock for income, with 34 per cent of per capita income from this source. In all three countries non-farm income is important to the household, particularly in Kenya and Uganda where such income accounts for 41.5 and 29.2 per cent, respectively, of per capita income.

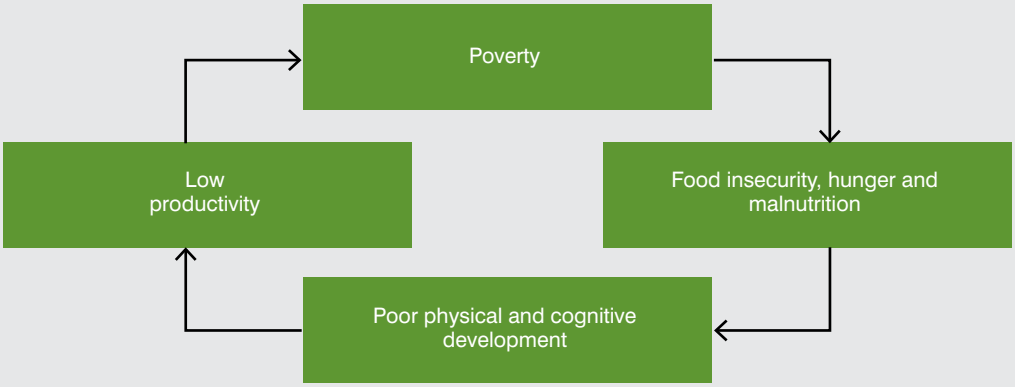
Reardon et al. (2007) have suggested that non-farm income tends to be more significant for smallholders with relatively favourable agro-ecological conditions for agricultural production.

In addition to diversification of household income sources on and off the farm, rural households employ various strategies to cope with adverse seasons or ill health of family members. These are reviewed in some detail in the IFAD Rural Poverty Report (2010). Some strategies, such as the sale of farm produce during more favourable periods, enable asset accumulation and a buffer against inevitable droughts or the loss of labour due to a sick family member. Others, such as borrowing, reducing school or health expenditures, or selling assets such as cattle, are more painful with longer term consequences. Ultimately, many will have no choice other than to reduce food intake, thereby increasing their vulnerability to sickness and providing less energy for farm production and off-farm work.

2.2 Food Security and Health Outcomes

The extent and distribution of poverty in rural Africa in general and in East Africa in particular is often responsible for driving unsatisfactory food security, health and welfare outcomes for tens of millions of smallholders. The role that poverty plays in food insecurity has been described diagrammatically by the FAO (2008), as presented in Figure 1. The nature of the relationship between poverty and food security is interdependent, and in many respects can be seen as a 'poverty trap'—a cycle of low levels of productivity that cause poverty and lead to food insecurity and poor development, thus making it difficult to escape.

Figure 1: Food Insecurity, Malnutrition and Poverty as Deeply Interrelated Phenomena



On a global basis the FAO (2013b) has estimated that chronic hunger now affects 842 million people or around one in eight of the world's population. Some 223 million are in SSA, which, in contrast to the progress made in Asia and Latin America towards the 2001 Millennium Development Goal to halve the proportion of hungry people by 2015, remains the region with the highest prevalence of undernourishment. SSA has only made limited progress in recent years, with a higher proportion of the world's undernourished people in 2010–12 (26 per cent) compared with 1990–92 (17 per cent).

The FAO maintains a database containing a range of food security indicators, with some 30 indicators covering four dimensions and seven related areas of food security. The latter include availability of food, conditions of physical access to food, affordability, access to improved water and sanitation, utilisation of food (food-related anthropometric failures), and stability or exposure to short-term risks that may endanger long-term progress.

While each of the indicators teases out various aspects of the food security situation, the overall dataset provides comprehensive information to assess whether, in practical terms, people have ongoing and reliable access to sufficient and safe nutritious food to meet the dietary needs and food preferences necessary for an active and healthy life. Probably the most frequently reported indicator is the prevalence of undernourishment, which is a key component of the Global Hunger Index published by the International Food Policy Research Institute (IFPRI).

Several of the FAO food security indicators are presented in Table 1. The data cover the endpoints of a 20-year time span ranging from 1990–92 to 2011–13 for four (availability, access, utilisation and stability) of the seven areas of food security identified above. The information is presented at the global and SSA levels as well as individually for Kenya, Tanzania and Uganda.

Table 1: World, SSA and Selected Countries' Food Security, 1990–92 and 2011–13[7]

	World		SSA		Kenya		Tanzania		Uganda	
	1990–92	2011–13	1990–92	2011–13	1990–92	2011–13	1990–92	2011–13	1990–92	2011–13
Average dietary energy supply adequacy–% (availability)[1]	114	122	100	111	95	101	103	105	108	110
Food price level index (access)[2]	1.3	1.3	1.8	2.0	1.6	2.4	1.9	2.4	1.6	2.9
Prevalence of undernourishment –% (access)[3]	17.9	12.0	26.9	32.7	35.3	25.8	36.7	33.0	28.7	30.1
Depth of the food deficit (access)[4]	128	83	221	173	227	166	180	221	166	192
Children younger than 5 years of age stunted–% (utilisation)[5]	na	na	na	na	40.2	35.2	49.7	42.5	45.0	38.7
Per capita food supply variability (stability)[6]	13	9	10	16	54	31	43	33	15	24
Total population (millions)	5 392.2	7 051.2	529.9	899.5	24.2	42.8	26.3	47.7	18.3	35.6

Notes:
1. Dietary energy supply as a percentage of average dietary requirement
2. Food Purchasing Power Parity Index (FPPP) divided by the general PPP
3. Percentage of people with dietary energy consumption less than minimum dietary energy requirement
4. Average number of calories required to lift the undernourished to the average dietary energy requirement
5. Height-to-age less than –2 standard deviations of the WHO Child Growth Standards
6. Standard deviation of food supply total in kcal/person/day
7. All data for 1990–92 and 2011–13 as indicated, except for per capita food supply variability (1995 and 2010); children stunted data (for Kenya for 1993 and 2009; for Tanzania 2010; for Uganda 1995 and 2006); and prevalence of undernourishment (for 1993–95)

na = not available
Source: FAO (2013c)

In 2011–13 the prevalence of undernourishment in the world in total was significantly less, at 12 per cent, than in SSA (32.7 per cent) or the East African countries of Kenya (25.8 per cent), Tanzania (33.0 per cent) and Uganda (30.1 per cent). Furthermore, while global undernourishment has fallen nearly one-third over the past 2 decades, this has not been the case in SSA or any of the individual East African countries, where the decline is significantly less. In fact, the prevalence of undernourishment in Uganda appears to have increased over the period.

The change in the depth of the food deficit over the same period follows a similar pattern as that for the prevalence of undernourishment. That is, the number of calories required to lift the undernourished to the average dietary energy requirement at a global level has fallen significantly more than it has done in SSA. Uganda and Tanzania both show an increase in the depth of their food deficits, although both nations may have particular circumstances, of which the author is unaware, explaining the outcomes.

The incidence of stunting in all three East African countries has shown some improvement over the period examined but remains at unacceptably high levels of between 35 and 43 per cent. Such health problems (and others, such as wasting, not reported here) have long-term implications for labour productivity and household poverty, and give rise to the circular trap phenomenon illustrated in Figure 1.

2.3 Smallholders and Food Markets

Smallholders are a very significant part of the food sectors in Kenya, Tanzania and Uganda. In all three countries they account for approximately 75 per cent of food production (Table 2). The agricultural labour force in these countries (the bulk of which is made up by smallholders) represents 60–80 per cent of the total labour force. In Ethiopia, agriculture is even more important, with smallholders responsible for 87 per cent of food production, significantly higher than comparable figures in Kenya, Tanzania and Uganda. In all four countries a large proportion of smallholders are women, who play a very important role in household production, harvesting and processing. Increasingly, women are heading rural households due to male urban migration (Oxfam 2008).

Agriculture is larger than the industry sector in all the countries included in Table 2, although less so in Tanzania and Uganda than in Kenya and Ethiopia. Only the services sector contributes more to GDP, although this is not the case in Ethiopia. While irrigated agricultural industries can be a significant element of agriculture (particularly horticultural industries) in East Africa, and there is much potential in certain parts for growth, the area of irrigated land is small relative to the total and arable land area. The average holding size of smallholders is very small by US and Australian standards in all four countries.

While corporate farming does contribute to East African agriculture, it is apparent that the region's food requirements will, insofar as they are met from domestic sources, continue to rely on smallholder agriculture. Of course, food imports could play a more significant role, particularly in order to meet the demands of increasing urbanisation, an emerging middle class and changing dietary preferences; to a significant extent, this has already occurred (Figure 2). Indeed, Kenya, Tanzania and Uganda are all net importers of food, as are 43 of the 51 African nations examined by Rakotoarisoa, Iafrate and Paschali (2012) in an FAO study. Just how much food exports and imports would differ in the absence of the external and internal trade barriers presently in place is open to question. Interestingly, under the current trade regime, just 20 per cent of Africa's agricultural exports were to countries within Africa, while 88 per cent of its agricultural imports were sourced from outside Africa.

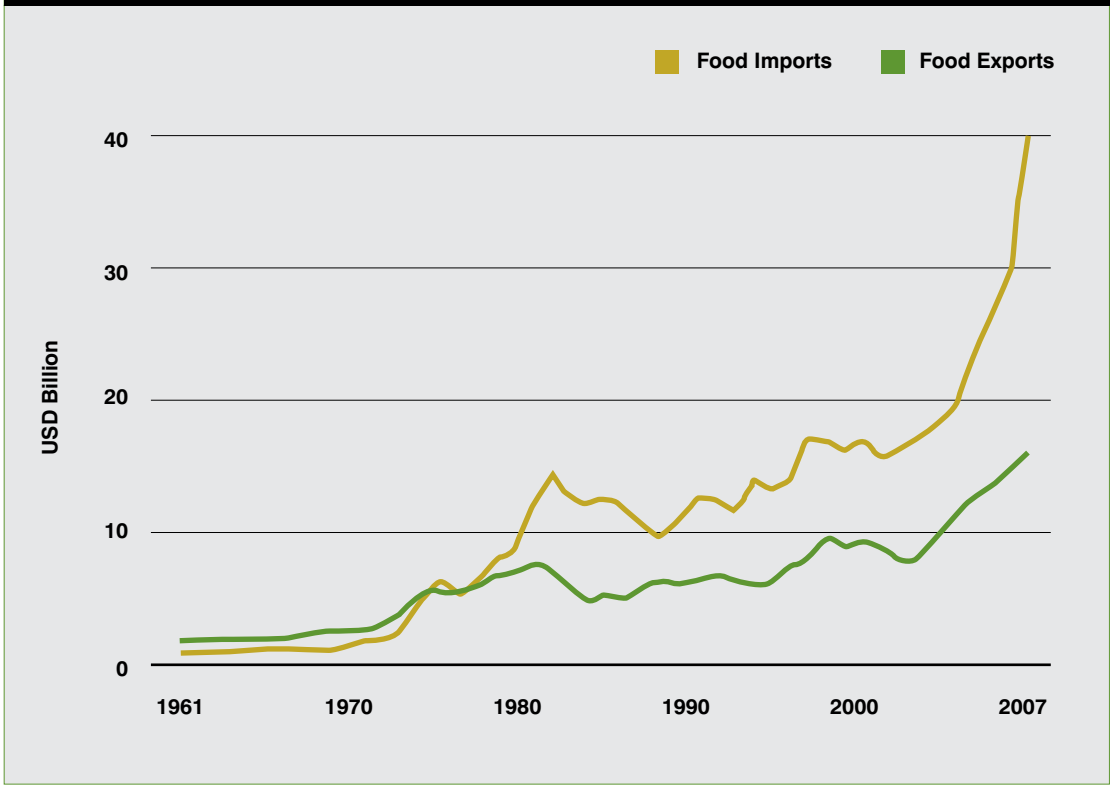
These trends will likely continue, as growth in food sales is forecast to grow by nearly 60 per cent between 2012 and 2022 (USDA 2013). Notwithstanding these developments, Wiggins (2009) has pointed out, and most observers would agree, that domestic agricultural development is required for poverty alleviation and food security in Africa. The World Bank (2007) has also adopted this view and it is a key feature of the thinking behind the Comprehensive Africa Agriculture Development Program (CAADP).

Table 2: Economic and Agricultural Profile of Selected East African Countries

	Ethiopia	Kenya	Tanzania	Uganda
Population, 2012 (millions)	86.5	42.8	47.7	35.6
GDP, 2012 ($US billion PPP)	103.1	76.1	73.5	50.6
GDP/capita, 2012 ($US PPP)	1 192	1 780	1 542	1 420
Real GDP growth, 2004–12 (%)	10.9	4.8	6.9	6.9
Real agricultural GDP growth rate 2007–12 (%)	7.1	0.7[1]	3.9[1]	1.8[1]
Agriculture share of GDP, 2011–12 (%)	48.8	27.7	27.7	24.9
Industry share	9.0	16.2	22.7	23.8
Services share	42.2	56.1	49.6	51.3
Agricultural labour force (% of total labour force)	79.3	61.1	76.5	65.6
Total land area ('000 km^2)	1 104	580	947	242
Arable land (% of land area)	14.6	9.7	13.1	33.8
Irrigated land[1] ('000 ha)	290	103	184	9
Average landholding size (ha)	2.5	1.1	2.5	2.0
Smallholder share of production (%)	87	75	75	75

Note:
1. 2009
PPP = Purchasing Power Parity
Sources: African Development Bank, OECD Development Centre, United Nations Development Program and Economic Commission for Africa (2013); FAO (2013a); Salami, Kamara and Brixiova (2010)

Figure 2: Africa's Food Import and Export Trends (current values)



Source: Rakotoarisoa et al. (2012)

It is worth reflecting on the demographics of SSA to put into perspective the challenges likely to face East African smallholders. On a broad scale the United Nations has projected the population of SSA to increase by 890 million by 2050 (Losch, Freguin-Gresh and White 2012). SSA is projected to become the world's second-most populous region after South Asia. In Kenya, for example, the population is expected to more than double from 40.8 million in 2010 to 85.4 million in 2050. While urbanisation in SSA is expected to absorb much of the population increase (including many rural youth seeking employment), rural SSA is expected to retain the majority of people until around 2030 (Figure 3).

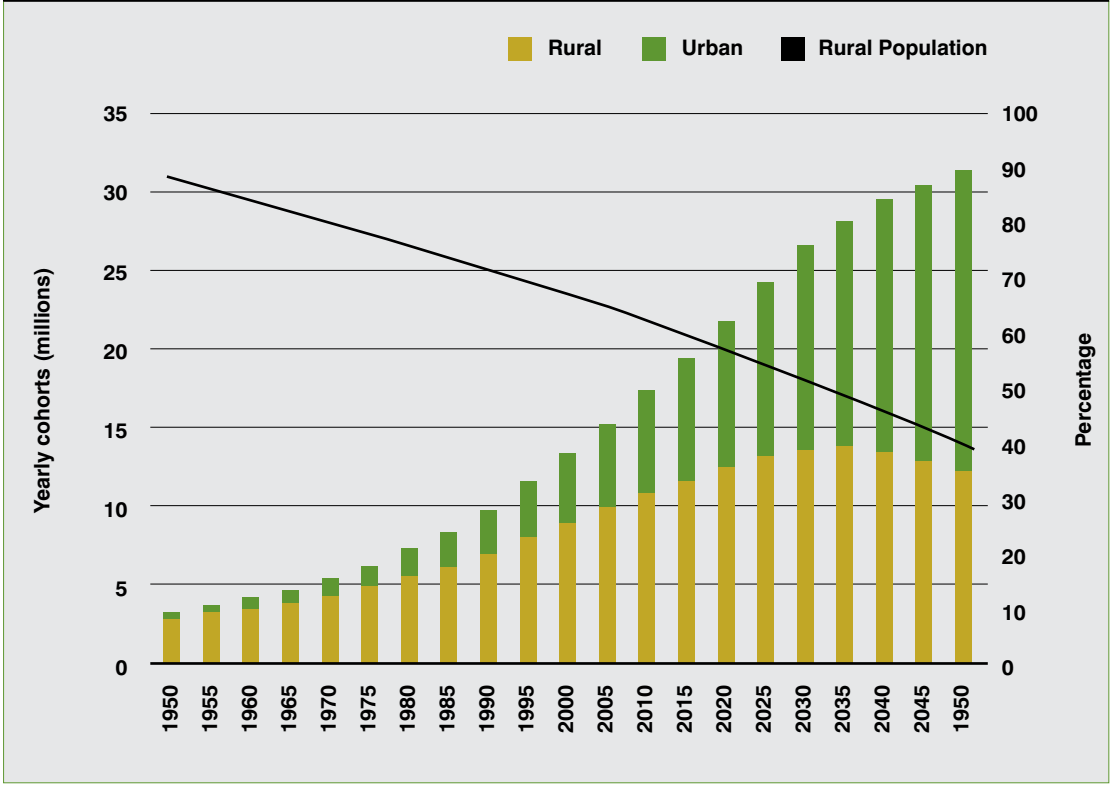
The declining share of rural population in the SSA total that is evident in Figure 3 has been seen historically in East Africa, falling from an average of 89.2 per cent during the period 1961–80 to 77.2 per cent in 2007. This increasing pattern of urbanisation is much like that underway in the rest of the world. However, SSA is the only region in the world expected to show an increase in rural population in absolute terms, with a 30 per cent increase projected between 2010 and 2050. This stands in stark contrast to East Asia (–50 per cent), South Asia (–10 per cent) and Europe (–45 per cent) over the same period.

2.3.1 Patterns of Household Food Expenditure

The FAO has investigated the share of the food budget as well as the significance of total food expenditure in household outlays for selected African and OECD countries (Table 3). Results from the four countries represented differ significantly, with total food expenditure accounting for nearly three-quarters of household outlays in Tanzania compared with less than half in Kenya and 15 per cent in Australia and Japan.

Noticeable differences in the consumption pattern between the two African countries include greater expenditure on meat and fish and less on beverages and tobacco in Tanzania relative to Kenya. However, meat and fish still make up a smaller proportion of the household food budget in Tanzania than in Australia and Japan.

Figure 3: Yearly Cohorts Entering Rural and Urban Labour Markets and Rural Population Share in SSA, 1955–2050



Source: Losch, Freguin-Gresh and White (2012)

Table 3: Food Budget Shares: Kenya, Tanzania, Australia and Japan

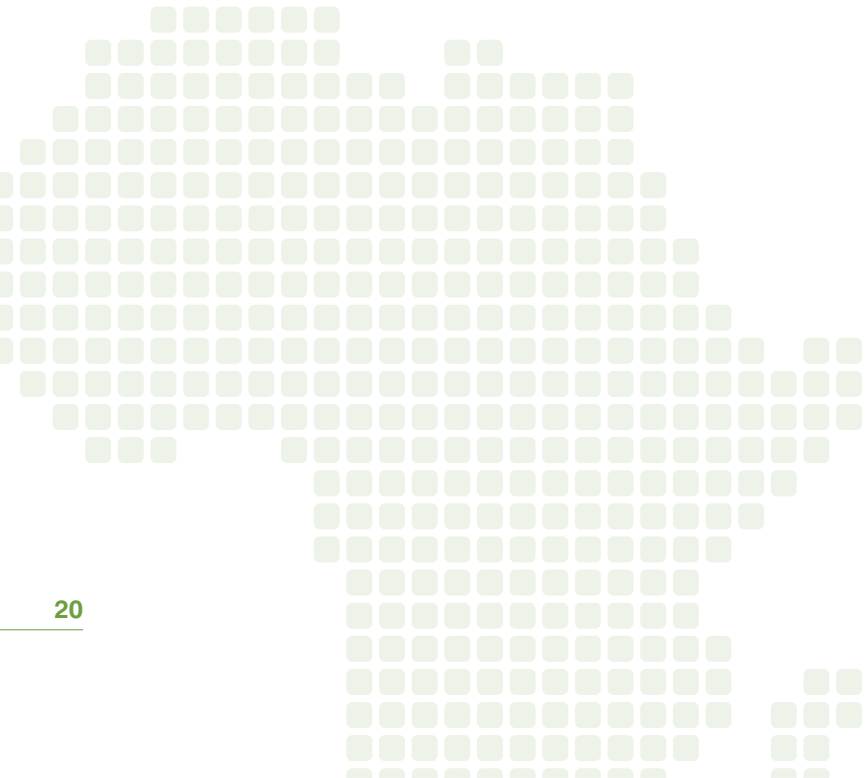
Country	Beverages, tobacco	Breads, cereals	Meat	Fish	Dairy	Fats, oils	Fruits, vegetables	Other foods	Total food expenditure
	Percentage of total food expenditure								Percentage of total household outlay
Kenya	15.49	32.49	5.13	0.43	15.10	2.64	17.57	11.17	45.82
Tanzania	4.74	39.55	9.60	6.38	3.56	3.30	24.22	8.65	73.24
Australia	25.24	13.50	16.91	3.11	9.67	1.65	18.34	11.56	15.07
Japan	23.15	22.28	7.82	17.02	4.79	0.66	12.79	11.49	14.88

Source: Based on Rakotoarisoa et al. (2012)

Both Kenyan and Tanzanian households allocate a higher proportion of their food expenditure basket to breads and cereals than do those in Australia and Japan. Dairy product consumption in the African and OECD countries does not appear to show any particular pattern, with Kenya allocating the largest share for this purpose, followed by Australia, Japan and Tanzania. Fruit and vegetable consumption accounts for a significant proportion of the household budget in all four countries.

The household consumption pattern described in Table 3 for the East African countries has most likely remained reasonably stable for some time, even though there may have been changes in certain countries and regions. The overall pattern for Africa suggests stability in the food basket composition for the past 40 years, as assessed by the FAO (Rakotoarisoa et al. 2012).

Together with the stability of the dietary pattern, the food consumption level per capita has not changed much in Africa in recent decades, growing at around 1 per cent per year. This is not so much due to the lack of potential for increases in individual and total food consumption as it is to the sluggish pattern of income growth that has constrained increases in food expenditure. Nevertheless, the evidence suggests that, in absolute terms, total food consumption continues to increase, driven mainly by Africa's 2.6 per cent average population growth over the past 3 decades. Population growth has also driven growth in both total and net per capita food imports, although FAO data indicate that many African countries (but not Kenya, Tanzania or Uganda) have, from time to time, faced difficulties meeting their food import bills.



3. Smallholder Production and Operating Environment

While food imports are increasing in SSA, the region relies primarily on domestic production to meet its food requirements. Rosen et al. (2012) have reported that the region supplies 80 per cent of its grain requirements and that growth in grain production has been increasing in recent years. However, for many agricultural products, yields and labour productivity remain low by international standards. For example, over the period 2000–10 Kenya, Tanzania and Uganda all managed to achieve significant increases in grain production but these were due to growth in area planted rather than yield growth. Indeed, the latter showed negative growth over the period according to FAO data reported by Rosen et al. (2012). Yield performance is examined in more detail in Table 4 for East Africa overall compared with Africa in general, and for global outcomes over the period 2001–12.

3.1 Sources of Production Growth

In Table 4, yield data for selected food products are presented for East Africa, Africa and the world. East African yields are well below those achieved on average worldwide and, for most products, significantly less than what is achieved elsewhere in Africa. Maize yields in East Africa are around one-third of the global average and 20 per cent less, on average, than elsewhere in Africa. They showed a disturbing negative growth rate of –3.35 per cent for the period 2001–05, but have since displayed positive growth, on average, during 2006–12.

Further examination of Table 4 suggests that East African countries are well behind global average yields for cassava, meat and milk and are also out-performed by other African nations. Only for beans do East African yields rival those of their African counterparts, but still fall behind those achieved worldwide. On a positive note, average annual growth in yields for maize, beans and cassava were higher in East Africa than elsewhere over the period 2006–12. Unfortunately, this was not the case for cow milk and cattle, where East Africa showed negative growth and the world and Africa overall positive growth for the same period.

Table 4: Yields for Selected Food Products

Commodities	Country groups	Yields				Average annual growth (per cent)			
		2001–05 ave	2006	2009	2012	2001–05 ave	2006	2012	2006–12 ave
Maize (t/ha)	World	4.63	4.75	5.16	4.92	2.39	–1.84	4.65	0.33
	Africa	1.72	1.74	2.00	2.07	–0.57	–1.00	7.81	2.91
	East Africa	1.36	1.41	1.49	1.77	–3.35	15.29	–1.11	6.59
Beans (dry) (t/ha)	World	0.72	0.75	0.82	0.81	–0.47	4.60	6.67	2.03
	Africa	0.61	0.60	0.66	0.65	–1.55	5.45	1.56	1.98
	East Africa	0.60	0.61	0.66	0.66	–1.85	11.10	3.13	3.43
Cassava (t/ha)	World	10.96	12.12	12.27	12.88	1.57	8.09	1.10	2.10
	Africa	9.10	9.96	9.67	10.94	1.77	5.46	2.63	2.54
	East Africa	7.90	9.13	7.51	10.37	1.59	12.00	20.02	5.97
Cow milk (hg/animal)	World	22 375	23 040	22 810	23 187	0.46	1.83	1.23	0.30
	Africa	4 627	4 569	4 737	5 130	-0.53	2.88	2.56	0.24
	East Africa	3 178	3 321	3 529	3 862	0.42	8.11	4.32	–1.59
Meat—cattle (hg/animal)	World	2 034	2 074	2 126	2 136	0.19	1.22	0.38	0.34
	Africa	1 453	1 496	1 569	1 538	0.26	1.49	–0.77	0.11
	East Africa	1 278	1 284	1 412	1 302	–0.06	0.23	–2.62	–0.76

Sources: Rakotoarisoa et al. (2012); faostat.fao.org (FAO 2014)

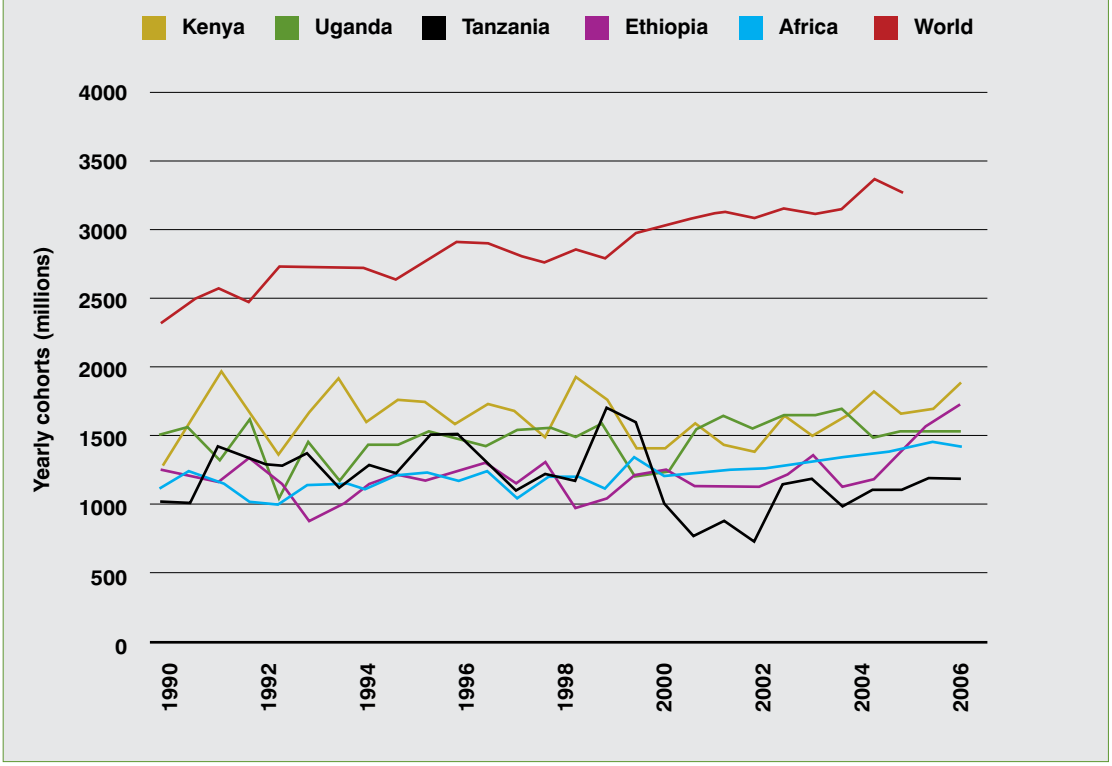
The situation for individual East African countries for cereal yields over the period 1980–2007 is shown in Figure 4. All the East African countries show a similar pattern in their cereal yields and again are substantially less and more unstable than the global average. However, the countries individually trend much the same, as does Africa overall, although, not surprisingly, the African performance shows more stability.

By itself a low yield may not necessarily be of great concern if production is based on an ample supply of land that enables the harvest outcomes that others achieve on less land but with higher yields. Indeed, data assembled by Rakotoarisoa et al. (2012) and reproduced in Table 5 confirm that the strategy historically in East Africa has been one of achieving growth based on expansion of cultivated area rather than yield improvements, and this in turn has led to less interest in both technology adoption and better agricultural practice.

The dominance of growth in harvested area over yield as the source of increases in SSA cereal crop production is evident for cereals overall, and wheat and maize in particular. In contrast, on a global basis, increases in yield have been far more important than harvested area as the basis for production increases, including the case of the Asian Green Revolution where significant increases in the productivity of land were achieved.

Among the developing countries, SSA has been the poorest performing region, with agriculture growing at an average annual rate of 2.4 per cent. The Latin American; north-eastern, southern and south-eastern Asian; and western and northern African regions all outperformed SSA with respect to agricultural growth over the period 1971–2010 (Fuglie and Nin-Pratt 2012). SSA also fared relatively poorly with respect to total factor productivity (TFP) growth. Over the period 2000–09 SSA shared last place (with southern Asia) among the developing-country regions, with TFP growth of 0.85 per cent.

Figure 4: Cereal Crop Yields (kg/ha), 1980–2007



Source: Salami et al. (2010)

Table 5: Annual Growth Rates for Cereal Production, SSA, 1962–2007

Commodities	Production		Yield		Harvested area	
	SSA	World	SSA	World	SSA	World
Cereals (average)	2.8	2.2	1.2	2.0	1.6	0.2
Wheat	3.6	2.5	1.5	2.3	2.1	0.2
Maize	3.7	3.4	1.3	2.3	2.4	1.1
Barley	2.5	1.7	1.8	1.6	0.7	0.1

Source: Rakotoarisoa et al. (2012)

A major challenge now facing African smallholders in general, including those in East Africa, is the limited opportunity to rely on increased land input as a means of increasing production. As population has increased and land is subdivided and made available to children, land has become significantly scarce, as borne out in FAO data (Rakotoarisoa et al. 2012) indicating that arable land per person in Kenya declined from an average of 0.36 ha/person for the years 1961–70 to 0.10 ha/person in 2005. Over the same period arable land per person in Tanzania similarly declined from 0.50 ha/person to 0.20 ha/person, and in Uganda from 0.43 ha/person to 0.20ha/person.

Garrity et al. (2012) describe the situation as follows:

> 'The big change that has recently disrupted rural society in many farming systems across the continent has been the abrupt closure of the land frontier. Suddenly, within a generation or two, abundant land has disappeared. Families (and communities) that had generally always had access to local sources of uncultivated land have found that expansion is no longer possible'.

Historically, the practice of extensive agriculture in SSA can be understood against the backdrop of the cost of land relative to other inputs, particularly credit, fertiliser and other purchased inputs, and the expense associated with intensification strategies such as irrigation. Today, however, and in the foreseeable future, the relative scarcities of land and other inputs seem to be changing for the reasons outlined above. This has led many commentators to conclude (e.g. see IFAD (2011)) that future smallholder production growth will require increased productivity, particularly through employment of non-land inputs and the wider use of available technology. Perhaps the exception in this regard is the extent to which labour can be attracted and retained in smallholder agriculture, given the better education levels of rural youth and their perceptions regarding whether their efforts can be rewarded sufficiently well in agriculture compared to competing opportunities away from the family smallholder farm.

3.2 Agricultural GDP per Worker

While the aggregate output of African agriculture has shown a steady increase, the levels of agricultural GDP per worker (AGDP/W) in many African countries are among the lowest in the world. Average AGDP/W over the past decade in Ethiopia, Kenya, Tanzania and Uganda has fluctuated between 15 and 40 per cent of the world average. Trend growth has been very slow in Kenya and Tanzania, while Ethiopia has achieved slow but steady growth over the period. These performances are partly explained by the yields already discussed and the low land input per person canvassed earlier.

In 2011 AGDP/W in Ethiopia, Kenya, Tanzania and Uganda ranged from $US217 in Uganda to $US356.5 in Kenya, slightly less than the $US375 for SSA developing countries overall but only 4–6 per cent of the South African result, although the latter is very much impacted by larger commercial as well as smallholder farming. Similar rankings of AGDP/W between these countries are evident in other years, as presented in Table 6. One difference, however, is that Uganda has slipped to be the bottom-ranked country behind Ethiopia, who occupied this ranking prior to 2008.

3.3 Input Use and Access to Markets

Central to the low productivity of East African agriculture are the limited access to and expense of key inputs, the slow and limited uptake of technology and the generally low standard of infrastructure. There is an extensive literature on these issues and the key points made below draw heavily on the work of the African Development Bank (ADB 2013) and Rakotoarisoa et al. (2012).

» Nutrient limitations have been identified as a major constraint to increasing crop yields in SSA. While soil fertility differs regionally, nutrient mining is widespread as soils continue to be cropped without adequate nutrient supplementation. Fertiliser application rates in SSA (data.worldbank.org; Sommer et al. 2013) averaged 12.9 kg/ha, much less than the world average of 132.6 kg/ha, and even further behind consumption in India (166 kg/ha) or European countries such as Germany (206 kg/ha). In East Africa consumption varies significantly, with 2010 levels in Kenya at 30 kg/ha, Ethiopia at 15 kg/ha and Tanzania at 5 kg/ha. Uganda is well behind many African countries, with consumption in 2005 a little over 1 kg/ha (Smailing et al. 2006; Ariga et al. 2006).

Table 6: Agricultural GDP per Worker, Selected Countries, 2002–12

Country	Agricultural value added per worker (constant $US, 2005)					
	2002	2004	2006	2008	2010	2012
World	1 082.2	1 142.5	1 196.4	1 229.1	1 241.7	1 020.3
SSA (developing countries)	565.5	581.1	626.6	655.3	696.7	702.1
Ethiopia	167.0	165.7	198.6	221.1	235.5	248.3
Kenya	361.5	360.1	385.7	365.0	364.7	369.1
South Africa	3 931.3	4 212.0	4 527.4	5 284.7	5 510.2	5 967.2
Tanzania	255.6	268.3	278.8	289.2	295.3	301.8
Uganda	241.1	237.2	230.4	220.9	217.2	217.1

Source: World Bank (2014a)

- Poorly developed fertiliser industries, lack of smallholder access to fertiliser and low demand all continue to impede increased fertiliser use. Frequently, undeveloped output markets are also at play, as limited opportunities to market surplus production and generate cash flow can mean a disincentive to purchase fertiliser. Price differentials between the East African coast (e.g. Mombasa, Kenya) and western Kenya or eastern Uganda can be large, with the western locations paying three to four times the price of fertiliser at the coast. Hence, uptake of fertiliser in the smallholder production environment will often require a very significant yield response, particularly if production risk is present and market opportunities are scarce.
- Like fertiliser, the use of improved seeds and agrochemicals in East Africa and SSA more generally is lower than elsewhere. Again, cost and access are significant barriers to uptake of these inputs.
- The quality of roads in East African countries poses significant problems for transporting agricultural produce. The proportion of paved roads in Kenya, Tanzania and Uganda ranged from 8.6 to 14.1 per cent according to FAO data for 2003–04 examined by Rakotoarisoa et al. (2012). Such road conditions could be expected to make it difficult to maintain quality of agricultural produce, and add to transport time to local and urban markets. In regard to the price of freight on key transportation corridors, road freight tariffs averaged US$0.07 per tonne-kilometre, which is more than the cost in southern Africa and many other countries but less than costs incurred in central or western Africa (ADB 2013). Logistic-related costs are also very high (particularly in landlocked countries such as Ethiopia and Uganda) relative to global standards, thereby slowing the effective velocity of freight as a result of lengthy customs clearance processes, administrative delays at ports, and delays at borders.
- Adding to the land transport problem is the limited rail transport network. Interconnectivity between road and rail transport is also poorly developed, making the cost of transport over both short and long distances high in comparison with many other countries. The national rail networks of East African nations are generally independent of one another and complicated by the use of varying rail gauges across borders.
- Given the small areas operated by smallholders, it is not surprising that there is a low level of mechanisation in African agriculture. Rakotoarisoa et al. (2012) examined agricultural machinery use in 2005 and found that SSA, with 13.4 tractors/100 km^2, is very lightly served by tractor power compared with agriculture across the world, which has an average of 214.1 tractors/100 km^2. In East Africa in 2005 the intensity of tractor use was higher than SSA overall, at 23.4 tractors/100 km^2. In Uganda, on the other hand, there were 8.7 tractors/100 km^2 in 2005, down from the 1991–2000 average of 9.3 tractors/100 km^2. All the East African countries lag behind southern African countries such as Botswana and Namibia in their tractor use.
- Irrigated agriculture is not generally a common sight in the SSA or East African agricultural landscape. Time series FAO data (FAO 2014) indicate that in 2011 only 1.2 per cent of the agricultural land area in Africa was equipped for irrigation, significantly less than the world figure of 6.5 per cent for the same year. Kenya, Ethiopia, Tanzania and Uganda all have lower proportions of agricultural lands equipped for irrigated agriculture than Africa overall, ranging from 0.1 per cent in Uganda to 0.8 per cent in Ethiopia. In some respects this situation makes them more vulnerable to drought and may pose further challenges and difficulties in the context of the impact of climate change.
- Agricultural productivity in the region has been shaped in part by the quality of technology and human capital brought to the production process. Many commentators have drawn attention to the slow overall pace of technology adoption in Africa, and the East African countries would be no exception in this regard. Frequently, technologies that have evolved from better animal husbandry, plant breeding, veterinary science, information technology, and general advances in production and processing techniques, as well as NRM and nutrition, have not been adopted. The adoption of improved maize varieties in East Africa illustrates the point, with uptake in 2009 varying from 27.9 per cent in Ethiopia to 35.4 per cent in Tanzania and 69.0 per cent in Kenya (see CGIAR DIIVA database at www.asti.cgiar.org, accessed 15 March 2014). Often, slow adoption can be attributed to cost factors, but in much of Africa it is also due to a lack of human capital and limited investment in agricultural research and extension (Wolf 2007; Binswanger-Mkhize 2009).

- Agricultural R&D is widely recognised as a significant contributor to productivity and GDP growth, particularly if it is effectively disseminated to those able to make best use of available results. The most recent data available indicate that the 1990s were a decade of stagnation for SSA agricultural R&D, but the period 2001–08 has seen a significant turnaround, with growth in expenditure of 20 per cent (Beintema and Stads 2011). This growth, however, has been concentrated in a handful of countries and much of the increase has been used to augment salaries and rehabilitate infrastructure after years of neglect. In 2008 Ethiopia, Kenya, Tanzania and Uganda were all in the 'big 8' spenders in SSA. Kenya and Uganda both surpassed the New Partnership for Africa's Development (NEPAD) threshold of 1 per cent of agricultural GDP spent on R&D, although this was not so for SSA overall, or Tanzania and Ethiopia. Nevertheless, all four countries were responsible for a 2.1 per cent annual growth in R&D spending of low-income countries over 2001–08. Despite this progress, some commentators (e.g. Salami et al. 2010) suggest that agricultural research has not been a key priority, citing significant shortcomings in extension services, with inappropriate training and insufficient attention to farmers' circumstances, markets and sustainability.
- The limited availability and use of rural finance has constrained the development of smallholder agriculture in SSA. Rural finance has a particularly important role to play in the procurement of inputs, capital development and technology adoption when equity capital is not available. In the East African countries the share of commercial banks' loans to agriculture has been very low compared with other sectors, and hence technology adoption has been impeded (Salami et al. 2010). Kiplimo (2013) has recently examined the use of credit in eastern and western Kenya, and cites Central Bank of Kenya data showing the agricultural sector in receipt of only 3.3 per cent of the national allocation of credit. In general, the lack of traditional collateral and credit history is a major problem, as well as high transaction costs encountered when lending in remote areas.
- More recently, micro-finance institutions have made funds available to many who previously were unable to obtain credit, but activity tends to be focused more in urban and peri-urban districts rather than rural areas. Smallholders, with their frequently risky investment profiles, have often found it difficult to take advantage of these facilities (Peacock et al. 2004). However, there have been some encouraging developments, with the advent of initiatives such as mobile banking provided through mobile phone companies and the banking sector. Other non-traditional entities have also emerged, and increasingly play a significant role in smallholder rural finance. The full range of financial institutions now providing credit in Kenya, including community-owned rural financing, private commercial banking, government-led rural financing, the donor-guaranteed input supply model, the savings and credit cooperative (SACCO) model, the informal arrangements that take in 'merry-go-round' and 'table' banking, and the government's Agricultural Finance Corporation have been looked at in some detail by Kibaara (2006).
- Access to electricity in East Africa, and SSA more generally, is limited relative to other regions. Livingston et al. (2011) found electricity access in SSA to be only 26 per cent, significantly less than a range of other areas examined (including East Asia, the Middle East and North Africa, Latin America and the Caribbean, and South Asia). A similar or worse situation prevails in East African countries. For example, in Kenya and Ethiopia electricity access (ADB 2013) was 23 per cent in 2011. And Tanzania and Uganda have even less access, with national figures of 15 and 9 per cent, respectively, in 2010 and 2006. The use of firewood and charcoal is widespread across East Africa, with little change over the past decade.
- Fixed or mobile telephone ownership has been estimated by Livingston et al. (2011) to be 35 per cent for SSA in 2009. In East Africa the ADB (2013) has reported mobile telephone subscription at 21 per cent but more recent 2011 data indicates that penetration may have doubled beyond this level between 2008 and 2011. Demombynes and Thegeya (2012), in a study undertaken for the World Bank, report a similar trend in Kenya. In fact, Kenya leads the East African Community (EAC) in mobile penetration, followed by Tanzania and Uganda (ADB 2013). Internet and broadband penetration were found in the same ADB study to be at low levels (by international standards) of 5 and 2 per cent, respectively, across the EAC.

4. Future Opportunities for East African Smallholders

Emerging opportunities for smallholders in East Africa, and SSA more generally, centre on two underlying developments. First, the forecast world population growth from 7 billion in 2012 to 9.2 billion in 2050, and the extra 1 billion of this increase that will occur in Africa, will exacerbate food security challenges in much of SSA where food deficits occur. In other words, the first imperative is to meet the existing food security gap, which has the potential, if not addressed, to become significantly worse.

Second, the increasing urbanisation already occurring in Africa and expected to escalate in the decades ahead will impact the way in which people live, and will most likely be accompanied by changes in their dietary preferences and means of purchasing food. The rural–urban drift underway in Africa is expected to see in excess of 60 per cent of all Africans living in cities in 2050 (up from around 40 per cent currently; see Figure 3); and centres such as Nairobi are expected to be home to significantly more than double their present population. Other cities such as Dar es Salaam and Kampala are expected to grow at an even faster rate (JICA-RI 2013). The labour intensity of economic growth in urban SSA is attracting rural residents in search of employment opportunities, and this trend is expected to continue the existing relocation pattern.

These developments will be reinforced by increasing per capita incomes, particularly in the urban environment where the middle-class consumer group is becoming increasingly larger. It has been estimated that middle-class growth in SSA could exceed 80 per cent between 2012 and 2020, faster than in any other region except the Asia-Pacific (USDA 2013). Income growth is usually accompanied with dietary changes and more interest in shopping convenience, together with retailers becoming increasingly conscious of their accountability for food safety, animal welfare and product integrity. It can be expected that African cities, like others all over the world, will continue to expand supermarket shopping, with all the attendant implications for what and where foods are consumed and how they are supplied.

These urbanisation trends are relevant worldwide and hence, to the extent that there is export demand for East African agricultural products, it is likely that smallholders could see new opportunities within Africa as well as at home and abroad, although their competitiveness may be constrained by current trade policies and the extent of subsidisation of agriculture in developed countries.

Many changes have already been seen, as IFAD (2010, 2011) has documented in its World Poverty Report and elsewhere. Not only has food demand continued to increase but there has been some substitution of higher value produce such as vegetables, fruits, meat and dairy at the expense of lower value items such as cereals. IFAD (2010) presents data describing recent changes in food consumption patterns, particularly the overall decline or stagnation of cereals in Kenya and elsewhere, and the simultaneous growth in vegetables and milk consumption.

In some respects the dual objectives of meeting the food deficit concerns at home and supplying the growing requirements of expanding supermarkets and retail chains in Africa and overseas compete against one another. Land has become scarce in that area per capita is falling and hence is constrained unless intensification of land use is achieved. It is possible that produce otherwise made available to smallholders' families is diverted to urban domestic or possibly export markets. This is particularly so when smallholders are enticed by multinational food conglomerates to: take up opportunities to obtain credit; use more purchased inputs, and better seed varieties and animal breeds; take advantage of training opportunities; and achieve better financial outcomes.

Some commentators have expressed concern about these developments. Certainly, it appears that Africa is following, albeit slowly, the retail trends already well underway on other continents. To the extent that food supplies fail to increase in response to new domestic and export retail demands, traditional domestic consumer requirements currently met by smallholder production might need to be supplemented from elsewhere, including through increased food imports. While such a course of events would undoubtedly bring adjustment challenges, it may also see more integration of smallholders into the market. Desirably, this integration could happen in conjunction with increased supply in response to higher food prices, with attendant income growth and the prospect of improved livelihoods, poverty alleviation and less malnutrition.

Hughes (2013) has argued that the major companies have strong incentives to develop long-term and durable partnerships with smallholders, as poor productivity at the farm level potentially threatens the long-term sustainability of their branded businesses. Similar sentiments are expressed by Hughes in regard to improving product quality and farm-level prices, and underlies his view that global food and beverage companies forging closer partnerships with small-scale African farmers is the emerging model for the coming decades.

Notwithstanding the interest of international food companies in procuring food supplies from African smallholders, it seems more likely that it will be a gradual rather than rapid development, for two reasons. First, domestic food markets in Africa are considerably larger than export markets. Second, the composition of demand in the domestic markets is dominated by the domestic supply of food staples (maize, wheat and rice), as shown in Table 7. It can be seen that the value of food staples (including on-farm consumption) is nearly three times as much as the rest of African and export sales. These are not, however, the areas that analysts such as IFPRI (Xinshen and Hazell 2004) see as more prospective in terms of urban and retail market development. Rather, the most promising prospects appear to be the traditional export crops (cocoa, coffee, cotton, sugar, tea and tobacco) and, even more so, the newer niche and non-traditional markets for products such as fresh vegetables, cut flowers and fish. Some SSA countries, including Kenya, have already achieved notable success in fruit and vegetable exports grown on smallholder farms.

The demand for food products in Africa's growing urban areas can be expected to become more diversified. Sales of the traditional export and niche products mentioned above can be expected to grow, along with the demand for meat, dairy and fruit products, prepared foods, and animal oils and fats. The recent expansion of dairy farming in peri-urban areas of some East African countries is a good example of the capacity of local farmers to realise opportunities generated from changing food and beverage markets.

Table 7: Size of SSA's Agricultural Markets

Market	East Africa	Southern Africa	West Africa	Total SSA
		Billion US$		
Traditional exports to non-Africa	2.2	2.4	4.0	8.6
Non-traditional exports to non-Africa	1.3	2.8	2.0	6.1
Other exports to non-Africa	0.5	0.7	0.7	1.9
Intra-African trade	0.4	1.1	0.4	1.9
Domestic markets for food staples	17.6	12.1	20.1	49.7

Source: Trade figures are from UN COMTRADE 2002 and are 1996-2000 averages; domestic-market figures are 2000 from FAOSTAT, 2003. Domestic market demand includes the value of own consumption.

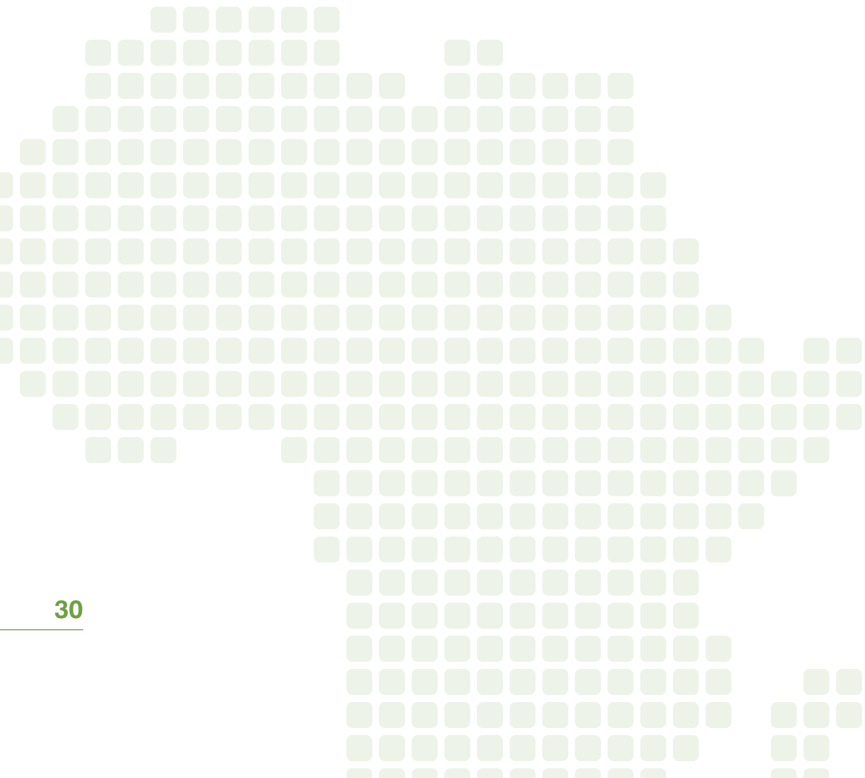
Given that Africa imports around 25 per cent of its grain requirements, there is potential for increased African production to displace imports. However, the challenge is for African producers to be competitive against a background of transport and marketing costs accounting for much of their gross returns—according to Xinshen and Hazell (2004), as little as 10-20 per cent of the gross value of production of smallholder produce is actually received by them after deducting transport and marketing costs. This is despite their production costs being competitive, principally as a result of low labour costs and minimal use of purchased inputs. Also, grain markets are characterised more by spot market transactions and are often more unstructured and volatile with respect to price behaviour (Livingston et al. 2011). Hence, the risks surrounding smallholder engagement in such markets can be very significant, thereby making already challenging conditions more problematic.

It may be possible for smallholders to achieve lower marketing and transport costs as a proportion of gross returns for products they produce in conjunction with a retailer or via participation in a marketing chain, if costs are shared with intermediary buyers prior to sale for final consumption. However, closer linkages with retail markets bring their own challenges for smallholders, including food safety requirements, product quality certification, grading and reliability of supply, all of which have associated costs. For many smallholders these requirements will be difficult to meet and may take many years to satisfy, after acquiring the necessary skills and achieving any necessary accreditation from private buyers as well as public regulatory authorities. Moreover, it is likely that the necessary infrastructure to permit successful market entry may often require investment in establishment or upgrading of facilities, and this is likely to take time to achieve.

A good example of what can go wrong if, for example, higher product and process standards are not adequately addressed is the 1990s experience of the Kenyan fresh vegetable export market outlined by IFAD (2010), where market restructuring occurred in response to European supermarket requirements for standards and associated producer certification. The latter (at a cost of $US25 000 for a group of 45 growers) proved too onerous and led to the exit of two-thirds of the smallholders around Machakos, whose supply was subsequently replaced by exporter-owned estate production and purchases from larger commercial farms.

Against this background the opportunities available to smallholders are likely to be incremental in nature, in that market entry in the first instance may have less-demanding end use requirements where, for example, only visual inspection is required. This might then progress, as Jaffee et al. (2011) and Henson et al. (2008) have suggested, to more-specific requirements regarding varieties, product grades and packing materials, as well as compliance with record-keeping requirements, risk management and traceability specifications. The opportunities for smallholders, if presented this way, provide a pathway for market integration that can be divided into feasible steps.

As smallholders are able to respond to changes in consumer demands, they will be assisted in many instances by the reforms in recent decades of input markets and commodity-marketing systems. While the extent of liberalisation varies across SSA and East Africa, the trend of less government involvement and a greater role for the private sector is clear. These developments have impacted differentially depending on smallholder circumstances and location, but they can be expected to facilitate new and varied market engagement options in future years compared to the past.



5. Smallholder Economic Welfare and the Value Chain

5.1 Smallholder Market Participation

Earlier in this report the circular 'trap-like' nature of the relationship between poverty and food insecurity was referred to (see the discussion relating to Figure 1). Increasing smallholder income is important not only from the perspective of increasing the resources available for food expenditure (noting that a large share of smallholders are net buyers of the food crops they produce (Barrett 2008)), but also for meeting basic health, child schooling and essential living expenses.

Income can be derived from both on-farm and off-farm activities. In the off-farm case, remittances are frequently made to family members at home from larger urban centres where employment may be available. On-farm, the pathways for escaping poverty have been summarised recently by Garrity et al. (2012) as intensification, diversification and increased farm/herd size. For many, the latter option is unavailable. The feasibility of the first two strategies would depend on the farming system under consideration, but both have the potential to transform smallholder production and improve on-farm productivity.

Whatever on-farm option is pursued, it is the connection with the market that will prove central to smallholder economic welfare. Smallholder family and community needs and demands are so diverse that it is uneconomic for individuals to satisfy their requirements entirely through self-provision. Rather, specialisation in what a smallholder does well, and trading any available surplus for goods and services produced elsewhere, comprise an exchange-based, comparative advantage approach to welfare improvement that underlies development economics, and that has its foundations in the original work of British economist David Ricardo. Increased incomes driven by a higher level of agricultural activity and investment can also create further opportunities through higher labour demand, which might also be met by smallholders and their families. Moreover, higher community incomes have their own positive multiplier effects, particularly with respect to the purchase of consumer goods and services.

Income growth throughout a community also yields a social dividend, as resources for community projects are bolstered, and improved facilities for health, education and other services become available.

Unfortunately, the journey for smallholders to join the market as a seller is not as simple as it might seem—if so, it would arguably have happened all over the world in the pursuit of self-interest. Engagement with the market requires much more than individual will, as access to productive inputs, services, infrastructure and markets is necessary, as are the institutions that address the competitive, legal and regulatory environment. The transaction costs associated with marketing a product (e.g. washing, grading, packing, processing, transporting and selling/wholesaling/retailing) can be sufficiently large to make potential commercial options unattractive.

Arias et al. (2013) have documented the constraints and risks confronting smallholders when taking market participation decisions. They generally fall into several classes covering structural, resource, product, financial and technological issues as well as subsistence needs of the farm family. Added to these supply-side issues are the challenges of meeting the important demand-side concerns of buyers focused on reliability, quality, food safety, timeliness and the related requirements of identity preservation through the supply chain and product traceability. With these various influences at play, it is not surprising that the task of mutually satisfied buyers and sellers finding one another can be very demanding and costly, to the point where other available options are often more attractive. As David Hallam from the FAO points out in his foreword to recent work by Arias et al., the smallholder environment is responsible for the muted supply response of many small producers to recent high food prices, such as those seen during and after the global food crisis of 2007–08.

Against this background it is not surprising that Barrett and others (Table 8) have found that relatively few households across a selection of countries are net or gross sellers of food grains. More often than not, smallholders are net buyers of food grains and, according to Barrett (2008), rely on income from cash crops and off-farm employment to purchase their remaining needs.

Of particular interest are the characteristics of smallholders who have shown a capacity to participate in food-grain markets. In this regard Woodhill et al. (2012) have distinguished between the 10 per cent of small farmers with the capacity and assets to integrate into modern markets and the 40 per cent of their counterparts who are asset-limited but with the potential to become commercially viable. The thinking of Woodhill et al. is shown diagrammatically in Figure 5. This analysis concurs with the point made by Barrett (2008) that, in eastern and southern Africa, market participation is highly correlated with the level of household assets, particularly land, as well as market access and agro-ecological zones with higher supply potential.

5.2 Smallholders and Agricultural Growth

It is widely accepted that connecting smallholders with markets is a central pathway for increasing smallholder household income, and that, if the efforts are successful, the prospects for food security and family and community welfare are enhanced. This option is attractive not only as a means for poverty alleviation but also from a social perspective, in that it avoids much of the upheaval and related social costs that accompany widespread abandonment of traditional life. In a similar vein AusAID (2012) identified agriculture as a major source of pro-poor growth and a key mechanism for raising farm income, with associated nutritional outcomes and an avenue for increasing off-farm activity and employment.

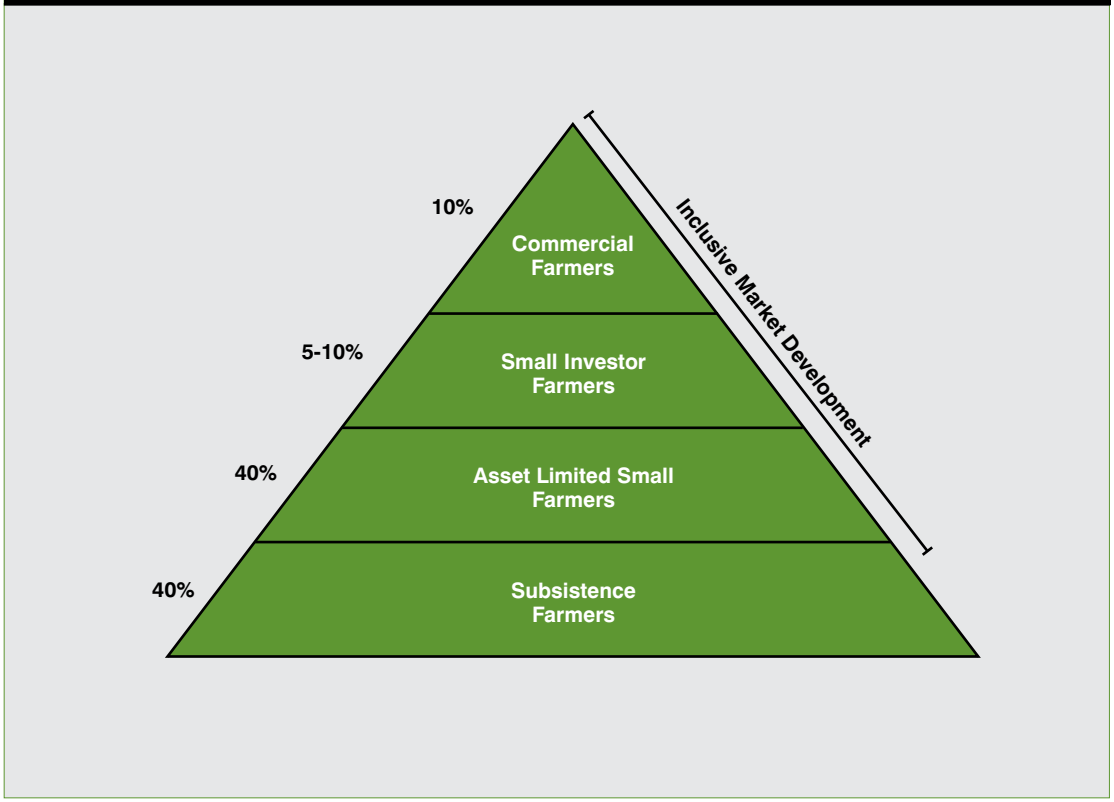
Importantly, much of the focus in taking forward a growth strategy will be on the supply side of smallholder production, as well as related issues surrounding procurement and use of inputs, product integrity, yields, pest and disease risk, and so on. However, building the market-based approach entails just as much attention being given to consumer demand. In fact, it is consumer preferences that will shape much of the choice between products that the smallholder can potentially produce.

Table 8: Staple Food Grain Market Participation in East Africa

Country	Crop	Year	Percentage of sellers	Study
Kenya	Maize	1997	29[n]	Nyoro et al. (1999)
		1998	34[n]	
		1999	39[n]	Renkow et al. (2004)
		2000	30[n]	Jayne et al. (2006)
Rwanda	Beans	1986–87	22[n]	Weber et al. (1988)
	Sorghum		24[n]	
Tanzania	Food	2003	33[n]	Sarris et al. (2006)
Ethiopia	Maize and teff	1996	25[n]	Jayne et al. (2006)
	Barley	1999–2000	10[n]	Levisohn & McMillan (2007)
	Maize		23[g]	
	Sorghum		11[g]	
	Teff		20[g]	
	Wheat		12[g]	

Note: g = gross, n = net
Source: Adapted from Barrett (2008)

Figure 5: The Economic Pyramid and Market Participation



Source: Woodhill et al. (2012)

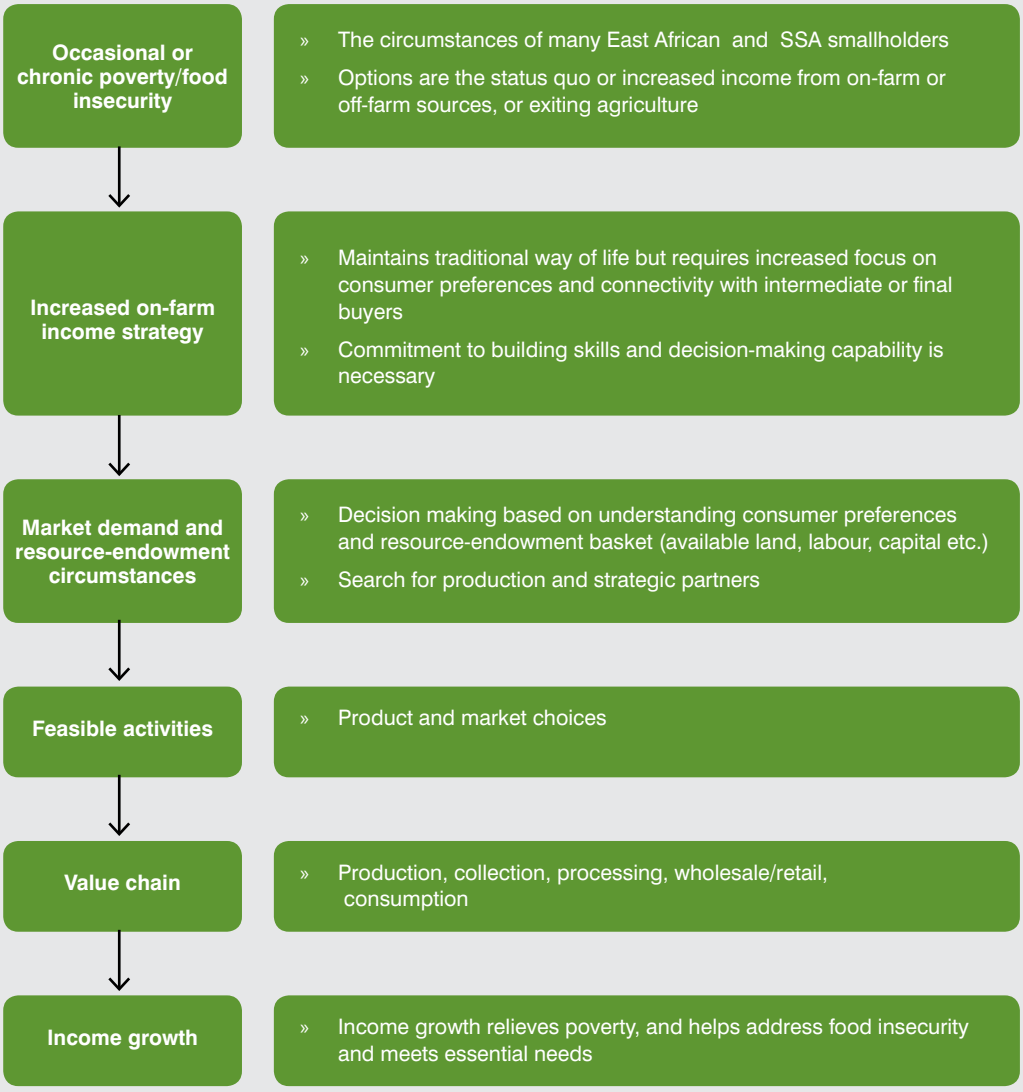
Ultimately, decision-making will centre on maximising margins across a feasible set of activities. The market could be either local or far beyond, and could include value adding through, for example, product transformation or even relocation, if economic, to an urban centre.

At the most general level the smallholder market engagement strategy would appear as described in Figure 6. The initial situation is problematic in that poverty and food insecurity are both present—either occasionally, in response to adverse seasonal conditions, or chronically, which may call for urgent action. Some smallholders will, if the option is available, exit from agriculture and pursue alternatives elsewhere in a nearby urban centre. Others will seek to earn supplementary income off-farm. Again, the scope for following this route will depend on available options, as well as family/household needs and circumstances.

Any potential route out of poverty is unlikely to be straightforward. The on-farm income strategy results in less disruption to the family's location and links with family and local community, but some significant challenges present themselves in relation to a more commercially oriented lifestyle requiring decision-making and risk-management skills. There is also the question of what activities a smallholder's small asset endowment enables him/her to pursue, and whether any proposed enterprise choices are taken on in an individual or group capacity. Decisions also need to be taken about what is done by the smallholder and their farmer partners and what is undertaken by others in the value chain. The issues are complex but, if dealt with successfully, can lead to a better standard of living for smallholders and their families.

A successful smallholder strategy for breaking out of poverty also has wider implications, as income enables consumption not only of food products but also of non-farm goods and services. Further income growth beyond the initial smallholder focus can be expected, as can employment as economic opportunities emerge elsewhere and rural households are given more choice in respect of how to best allocate their labour.

Figure 6: Smallholder Market Engagement Strategy



5.3 The Value Chain in More Detail

There is a myriad of papers, manuals and books dealing with the value-chain concept. They differ significantly in their focus on individual firms and networks of activities, as well as their commodity choice, depth of analysis of chain actors and stakeholders, and their problem-solving perspective; for example, dealing with pro-poor policies for smallholder communities or (from a different angle) the relationships between international food marketing conglomerates, food-processing companies and corporate farming ventures.

However, the basic concept of a value chain is common to all applications—it is the activities and actors connected along a chain to produce, transform and deliver goods and services to consumers. The chain is ultimately driven through local, national and international consumer demand, and value is added at various stages (e.g. production, storage, processing, packaging and retailing) in a journey to final consumption or use. More than 30 manuals exist that give advice on how to work with value chains in different situations, and 11 of these have been reviewed recently by Donovan (2012).

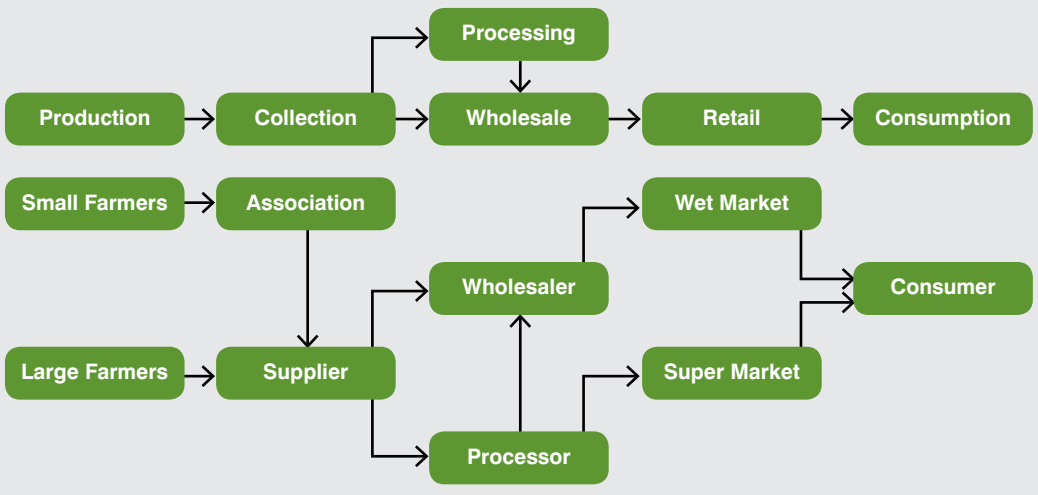
A smallholder wanting to market farm produce either individually or collectively with other smallholders has many choices and decisions to make in regard to: where and how inputs will be procured and financed; which varieties suit the enterprise; and to what extent they will be involved with post-harvest activities such as washing, grading, packing, processing, transporting and marketing produce either in a local village, urban centre or possibly an export market. In effect thousands of value-chain possibilities could potentially be pursued. The more difficult issue is which, if any, are feasible and most profitable after considering the logistics and requirements for a viable small business, and budgeting for the expected revenues and costs of alternative enterprises.

Value chains are particularly useful in this environment because they are a descriptive device for outlining what the potential flow of produce might be from the smallholder to the consumer, and all the steps in between where value is added in response to market demands. The tool can be used to understand what pathways to alternative markets might look like, who the principal actors at various points might be, what costs might be incurred and what revenues expected, and where institutional requirements such as regulatory standards might need to be met. As Haggblade et al. (2012) points out, market participants further along the chain from smallholders will sometimes have their own corporate capability to undertake such assessments; however, in the case of smallholders, value-chain assessments provide the rural poor with an analytical means for considering alternative courses of action.

Usually a chain is depicted as a variant of the basic model shown in Figure 7, with progression of a product from left (the production stage) to right (final consumption), together with the principal actors (e.g. small and large farmers) and possibly overlain, as the analysis requires, with financial, institutional, regulatory or other relevant information. What emerges is a map of activities that create both value and rewards to the actors involved. What is not shown on the diagram is the flow of information in the reverse direction as: consumers convey market information regarding appropriate standards, and demand attributes such as timing and quality of perishable and non-perishable food products; and actors located earlier in the chain are informed of market preferences and relative prices for what they produce now or might produce in the future.

In Porter's (1985) framework the value chain had a company/firm-focused application concentrated on understanding competitive advantage. More recently, attention has turned to using value-chain analysis to study national and international economic activity, and one arm of this approach has been to consider how value chains can work better for the poor (DFID 2008). Using this broader approach, several issues surface, as discussed by Arias et al. (2013). First, the chain is a sequence of linked activities and relationships that may extend

Figure 7: A Basic Value Chain



Source: Adapted from Vermeulen et al. (2008)

throughout the economy, with performance in any particular segment dependent on what happens in earlier or later phases. Second, the chain can be used to better understand the strengths and weaknesses of the various activities and where public or private intervention might be required to make improvements in performance and promote competitiveness. Importantly, the value chain concept can, as in Porter's analysis, be adapted to address the problems and opportunities facing the firm and its immediate interaction with business partners, or it can be applied to industry subsectors or groups involved in a range of sophisticated or less-developed market circumstances with diverse supply and consumer attributes.

The nature of the market prior to final consumption in Figure 7 is shown as a supermarket or traditional wet market. Africa has already seen the appearance of supermarkets ranging from hypermarkets to convenience stores. However, traditional retailing of perishable goods (e.g. meat, fish, fruits and vegetables) remains important, and wet markets co-exist with modern stores, sometimes in competition with one another. This is not surprising, as in many respects they differ significantly from one another. IFAD (2010, p. 120) compares and contrasts the main features of the two markets in a comparative analysis adapted from Henson (2006). The salient points are presented in Box 2.

The differences between modern and traditional markets range from their price responsiveness to the products traded, their standards and the nature of the businesses, and their logistic and accountability relationships. Importantly, they meet different needs and hence there can be no sense of one being better than the other, even if the modern market is more advanced than its traditional counterpart. The relationship between modern retail marketers and smallholders is yet to fully emerge in Africa. Certainly there is the risk that retailers will import their requirements from overseas and may prefer to do so because of more confidence in the reliability and quality of food and its conformity with required standards. However, smallholders currently occupy a dominant position in the supply of food and may prove competitive and effective suppliers to traditional and modern markets, both in urban and rural village environments. As Vermeulen et al. (2008) point out, consumers are increasingly wanting to source their food domestically and governments often encourage rural development. It is not clear how these dynamics will play out in SSA, but they appear to have some importance in any assessment of future food-market development. How the balance of traditional and modern retailing develops over the longer term in SSA, and whether Africa follows closely the European and US experiences or generates its own retailing variant in response to local and regional factors, are yet to be seen.

Box 2: Traditional versus Modern Supply Chains for Agricultural and Food Products

Traditional

- Low own-price elasticity of demand
- Trade or processor-led supply chains
- Low value to volume ratio
- Quality defined by basic grades
- Limited need for quality and safety assurance
- Low perishability
- Little processing or transformation
- Little supply-chain coordination with high risk and transaction costs
- Many small businesses
- Little, if any, product traceability/identity preservation
- Basic logistics

Modern

- High own-price elasticity of demand
- Retailer-led supply chains
- High value to volume ratio
- Quality defined by private standards
- Quality and safety assurance critical
- Processing and transformation common
- High level of supply-chain coordination
- Low transaction costs in short supply chain
- Limited number of small businesses
- Product traceability needed
- Advanced logistics

Sources: IFAD (2010); Henson (2006)

6. Progressing Smallholder Participation in the Value Chain

6.1 Summarising the Problem

Like food markets worldwide, those in Africa are evolving. Modern food chains in co-existence with traditional distribution and retailing practices are creating diverse opportunities for smallholder market participation. The challenges facing smallholders who seek to commercialise and participate in food markets are complex, as they strive to meet not only their household requirements but also the demands of consumers who are becoming more discerning and are purchasing their food with interest in nutrition, convenience, safety, quality and other attributes as well as price.

The smallholder is confronted with a new situation, somewhat more diverse than the past decision-making environment that focused on taking any surplus production to the local village to sell. While these opportunities are still available, new produce outlets have appeared that smallholders could collectively produce for, but they would need to do so with a commercial mindset and informed decision-making in respect of input use, agricultural practices, transport and marketing, and access to infrastructure and markets.

Two groups of issues will prove pivotal to the future role that smallholders can play in food markets, and these have been summarised by Torero (2011). First, there are threshold problems concerning available infrastructure that physically enables smallholders to integrate with markets. In particular, facilities such as roads, electricity, telecommunications and irrigation are basic essential services for some potential smallholder products, although their public and/or private provision is capital intensive and usually needs to satisfy strict cost–benefit criteria to justify their availability. Second, there are institutional issues that are central to the presence or otherwise of services, such as: credit and market information; governance systems responsible for commercial rules and laws; and the regulatory environment responsible for product safety, competition and other social requirements that are part of the modern trading environment.

This grouping of issues by no means captures every challenge facing a smallholder contemplating commercialisation. Other production-based constraints arise from the presence of pests and diseases and the suitability of plant and animal varieties and breeds for the market place, although these too can stem from institutional and infrastructure-related issues. Often, the barriers and impediments facing smallholders express themselves in uneconomically high transaction costs, be it transport costs impacting on the price of purchased inputs, marketing costs that reduce the gross unit return to an unacceptably low net return due to difficult logistics, inadequate product storage and handling arrangements, or the efforts required to satisfy what might be uncertain regulatory requirements for food safety. These transaction costs generally fall into two types, as categorised by Key et al. (2000); first, fixed costs incurred regardless of the level of production, such as the costs of negotiation, collection of market information and contract enforcement; and second, variable costs such as for grading, washing and transport paid in direct proportion to the volume of output.

A further important factor is the overall mindset and readiness of smallholders to supply food markets. In Figure 8 the bewildered smallholder has arrived at the city limits contemplating and enquiring how to negotiate the challenges ahead. The journey may well have bypassed village markets where arrival on a motor bike is the norm, but this urban market appears to hold some more serious challenges requiring a different approach.

Figue 8: The Smallholder Challenge?

Source: Torero (2008)

6.2 Initiatives to Enhance Smallholder Competitiveness

There are many tools in any comprehensive approach to addressing smallholder competitiveness, and their relevance and importance tend to vary with circumstances. One pervasive issue is the significance of the transaction costs facing smallholders. The purchase of inputs and sale of outputs incur costs that for the individual are spread over small volumes, thereby making unit costs unacceptably high for many to justify most forms of market engagement. Of course, there are exceptions to this generalisation, such as where a smallholder's location (e.g. in a peri-urban area) affords transaction costs sufficiently low to generate a satisfactory net return, and hence individual enterprises prove to be economic.

6.2.1 The Role of Farmer-groups

In many areas throughout Africa, farmers have formed into groups for various reasons, ranging from the receipt of technical advice and exchange of information to the economic imperative of reducing the costs of production and marketing. In recent years some of these groups have focused on NRM and, with the help of various government and NGOs, have become Landcare groups; these will be discussed in section 9 of this report.

There are several different configurations for farmer-groups. At the local level they may be groups of farmers with a common enterprise who are able to reduce unit costs by group purchases or sales. Sometimes, these groups function individually; alternatively, they may band together into a farmers' association that is more suitable for particular purposes, such as bargaining on behalf of its members. Farmer-groups can be informal organisations or they could be formal entities, as in the case of cooperatives, with a formal constitution and subject to legislative requirements. Such formal arrangements are often needed when entering into contracts with input suppliers or downstream organisations in the value chain.

There is an extensive literature outlining the utility and broad level of support for farmer-groups (see, for example, the 2008 World Development Report (World Bank 2007). Of particular interest is the potential for farmer-groups to address problems associated with imperfect markets, including high transaction costs, property right uncertainties, poor availability of market information and costly price discovery, any of which can make it difficult for markets to function efficiently and generate competitive outcomes in the interests of farmers and others in the value chain. Farmer-groups can harness the power of collective action to procure and produce more than can be achieved as individual smallholders, and thereby secure better outcomes. In particular, onerous transaction costs for transport of inputs and/or outputs, and the cost of collecting information concerning marketing and contract options, can be reduced using the scale and market power of groups. Further, the combined output of farmer-groups can reduce the risk of individuals failing to meet market requirements, which is an ongoing issue given seasonal variation and the variable availability of key inputs. If operating well, farmer-groups may not only achieve reduced input and marketing costs, but may also become more-formidable bargaining agents than individuals in market price negotiations with traders, processors and retailers further along the value chain. They may also be important in receiving feedback from others in the chain, and in presenting as viable entities for extension interests providing technology and related technical services.

Despite their usefulness, farmer-groups are not a 'magic bullet' able to deal with any emerging challenge. In most areas where smallholders live and farm, the infrastructure issues concerning roads, electricity, communication and technical support remain as important constraints, and much of the responsibility for dealing with these issues lies more in the public domain than with smallholders. Similarly, any issues related to regulatory, legal, trade policy or foreign investment concerns, while impacting smallholders, are usually impediments beyond the immediate reach of farmer-groups. Food suppliers, including smallholders, require R&D support as well as other tools such as insurance and credit to build competitiveness. All these influences shape the operating environment and need to be considered by any entity, however large or small, taking commercial decisions to service available markets.

6.2.2 Options for Smallholders Entering the Value Chain

While the formation of formal or informal groups is one way of advancing smallholders' commercial interests, it is not the only means of doing so. Another option is contract farming, where smallholders agree to sell a specific area of crop, number of animals or volume of produce (e.g. milk) to a processor or marketer, or a cooperative or larger farmer. Delgado (1999) has reviewed the use of contracts to procure farm products in SSA, and compared the advantages and disadvantages of this arrangement with the alternative of smallholders acting independently.

For the smallholder in a contract arrangement, the procurement of the correct inputs, probably on credit against product delivery, is straightforward. Further, it is likely that high-quality extension services will be readily available throughout the production and harvesting period, and the crop/produce will be delivered as soon as it is ready. Hence, the arrangements avoid the risk of smallholders having to hold a perishable crop, and the smallholders' lack of access to assets, information and services is overcome through the contract arrangement.

Similarly, the processor/marketer is able to secure important gains from the contract arrangement. In particular, supply (weather permitting) has been assured, there is at least some flexibility in the price paid to smallholders to reflect underlying market conditions, and farmers are adequately resourced to acquire necessary inputs using, where appropriate, loans secured against their future produce.

Price determination can be challenging in contract arrangements, particularly if the flexibility referred to above is not available. With prices set too high early in the season, the buyer is exposed even though smallholders achieve a short-term gain. On the other hand, prices set too low establish incentives for smallholders to sell elsewhere, thereby threatening the reliability of supply and the trust and other foundations underlying the contract arrangement.

Against this background, much thought and effort is required from the contract parties to achieve a durable outcome. In particular, smallholders need to have appropriate local expertise involved both in the negotiation of the contract and throughout its duration for the purpose of monitoring outcomes (e.g. quality standards) in conjunction with management. There are also additional complications, such as making it clear that direct payments are to be made to those doing the work (often women), and that smallholders have the freedom to undertake other activities central to household welfare (e.g. animal rearing and staple crop production). Despite contracts being binding individual undertakings, many of these issues might be amenable to discussion with smallholder groups such as those discussed in the previous section. This practice shows the need for smallholder groups to have the skills and capacity to be effective contract partners.

Delgado (1999) has also reviewed the types of transaction costs affecting smallholders, with a view to assessing whether their interests are best served by contract arrangements or through smallholders acting independently. Not surprisingly, the answer is not universal. For example, from a production perspective, labour intensiveness favours smallholder organisation whereas complex input use suits contract arrangements, and heavy investment requirements favour a third type of organisation in the form of larger scale enterprises. On the processing and marketing side of the value chain, however, several attributes favour the contract option for doing business.

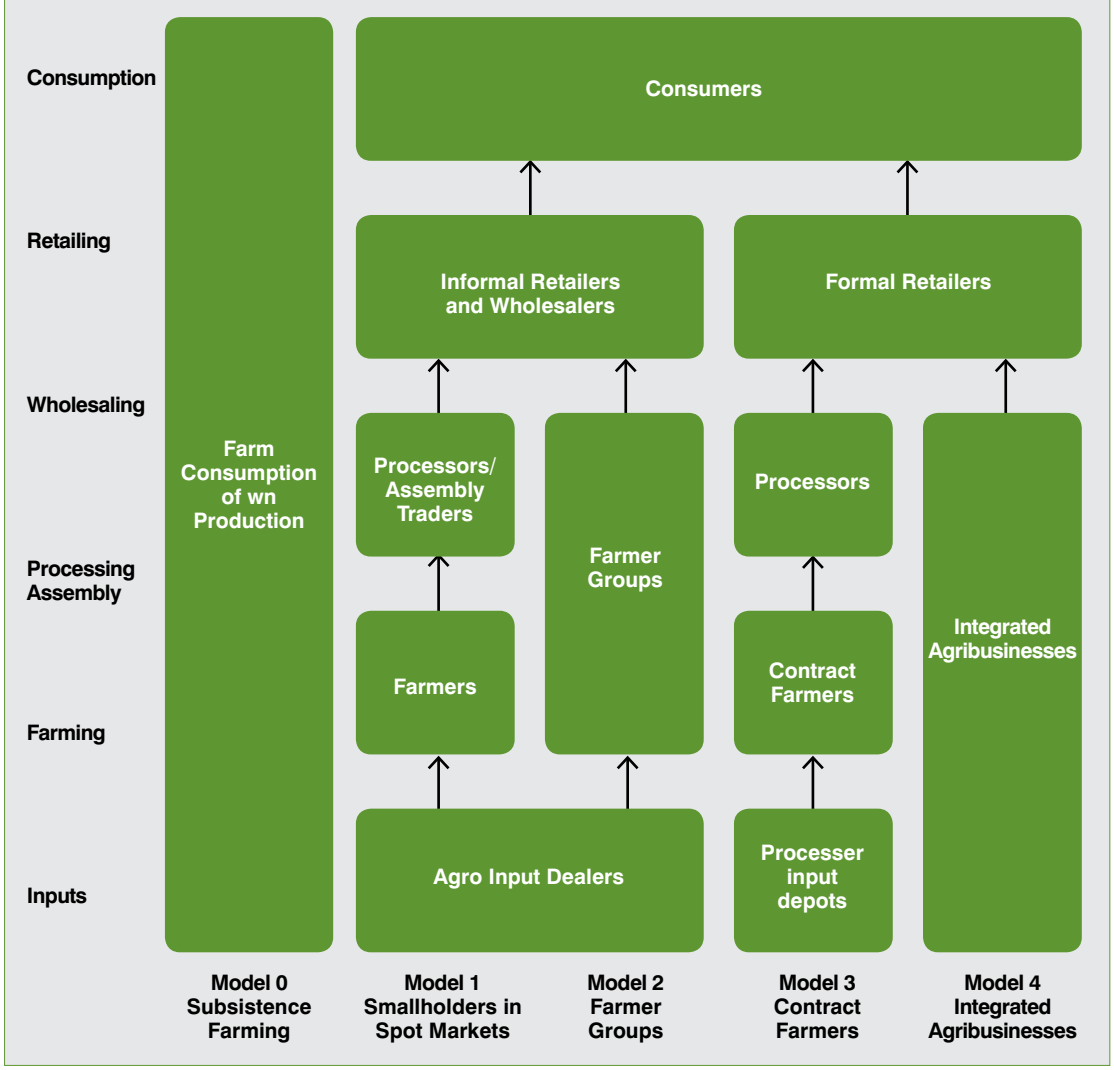
Delgado includes quality, specificity, perishability, value to weight ratio, export market destination and the presence of economies of scale in marketing in this group. On the other hand, property rights uncertainty and the absence of participatory local governance are seen to favour smallholder organisation.

When the same issues are considered from a commodity perspective, the contract option for smallholder involvement tends to be favoured where transaction costs are more prohibitive, due to lack of access to appropriate assets, information, services and marketing options. This is the case for a number of SSA and East African agricultural/horticultural products, including bananas, coffee, tea, cut flowers, tobacco, palm oil and cocoa, as well as cattle, dairy and cotton. Contracts appear to be less suited, however, for coarse grains, small ruminants, root crops, backyard swine and poultry.

Putting all this together suggests three options for smallholder inclusion in the value chain. They involve significant differences when compared with a baseline of subsistence farming, as shown diagrammatically in Figure 9 (Haggblade et al. 2012).

In the base case (Model 0), inputs are used and farming occurs, but the only activity after farming and harvest, and some early stage processing and preparation, is consumption of the produce by the smallholder's family. In the next two models (Model 1 and Model 2) smallholders in both cases are at the start of the value chain but are participating quite differently. In Model 1 smallholders acquire inputs from relevant dealers and trade their product individually with processors before further chain activity. In Model 2 farmer-groups play an important role, interfacing with both the input suppliers and the retail and wholesale segments of the value chain, although their trade could well be with processors, assemblers or traders.

Figure 9: Business Models for Smallholder Inclusion in Value Chain



Source: Haggblade et al. (2012)

Models 1 and 2 differ fundamentally from Model 3 in that, in the latter case, all value-chain activities from at least the procurement of inputs to the processing stage are collectively undertaken by parties to the contract before onward stages involving retailers and consumers.

Figure 9 also includes a fifth option, similar in some respects to the contract farming model but differing in that all activities in the value chain prior to retailing are undertaken by the one integrated agribusiness involving larger specialised farms, ranches or plantations.

While Figure 9 describes the alternative pathways, it does not address their availability to smallholders. For example, contract farming often may not be an available option if contractors satisfy their procurement needs elsewhere; or if infrastructure services are unavailable or inadequate, the potential contractor cannot address them and hence is attracted to search elsewhere for more favourable conditions. From the smallholder perspective, there may be interest in certain products that potential contractors do not see as prospective, and the smallholder is therefore unable to pursue a preferred enterprise via contract farming.

It is apparent that where issues related to transaction costs and market power are present, smallholder farmer-groups and contract farming may both offer prospective avenues for smallholder entry into the value chain, although the two models are likely to be used in quite different market circumstances. In the contract situation the contracting firm can be expected to manage smallholders or farmer-groups quite closely, and farmers can expect to receive a relatively higher proportion of the retail price relative to that in a less-structured marketing environment. The contractors are usually what Kelly (2012) describes as 'buyer driven', while the smallholder farmer-groups are more 'producer driven'.

6.2.3 The Overall Significance of Smallholder Collective Action

The comparison of contracts as a business model with farmer group action helps to shed light on possible courses of action available to smallholders and agribusiness interests in the value chain. While contracts have attracted much attention in the literature (e.g. Eaton and Shepherd 2001; Vermeulen and Cotula 2010) and have been widely used over many years, there are many other business models also worthy of consideration, depending on the market and product environments. Some other arrangements outlined by Vermeulen and Cotula include leases, tenant farming and sharecropping, joint ventures and farmer-owned businesses. Each of these business models has emerged in response to particular circumstances and none is superior to all the others under all conditions. For instance, leases can be used where farmers or companies wish to make use of land owned by others, while a joint venture is a business undertaking of two or more parties who bring capital and other inputs to the business with a view to sharing the benefits. To some extent, there is a much wider range of models available than what a simple classification might suggest, as there are many variants and hybrids that can be developed or adapted to the range of conditions that might apply. As Vermeulen and Cotula point out, what works best, while still being attractive to investors, is very much context-specific and contingent on tenure, policy, culture and history as well as biophysical and demographic considerations.

Regardless of which business model is used, smallholders must deal with what is often a weak bargaining position in the absence of initiatives to give them more scale and presence, and hence negotiating power with others in the value chain. Smallholders must overcome the disadvantages they face as a result of their remoteness, poor access to services and information, and the high unit transaction costs and pricing challenges that frequently go hand in hand with small-scale production and lack of coordination. In effect, smallholders wanting to enter the market will need to deal with significant asymmetries between their own market circumstances and those confronting others in the value chain.

Their situation is made all the more difficult by inherent disadvantages, including low levels of education, poorly defined land rights, widespread poverty and the scarcity of collateral that they can bring to finance markets, as well as competition from other domestic suppliers and importers for the products they wish to market.

Collective action by smallholders is one means of addressing these issues; if successful, it can realise significant outcomes without having to be excessively dependent on government subsidies and assistance. It is an initiative that smallholders can take themselves, with a view to achieving farming and family welfare outcomes as a group that could not be achieved on their own. Importantly, the need to consider collective action applies to whatever business model smallholders might be considering, whether a smallholder-owned business trading in input and/or output markets, a contract between a group of smallholders and a downstream processor or retailer, or smallholders leasing land to achieve increased scale. The form of business model chosen will, as discussed earlier, depend on the particular situation but will not negate the importance of behaving cohesively as a farmer group, with a view to realising the potential market advantages that increased scale can confer.

7. Farmer Group and Smallholder Capacity Development

It would be unrealistic to think that collective action is a solution to all smallholder problems. There can be no escaping the external environment confronting any smallholder contemplating market participation. High input costs, inadequate transport, storage and energy infrastructure, limited competition at various points in the marketing chain and overall remoteness affect competitiveness. Smallholders are also increasingly being asked to meet product standards and to have their product certified in accordance with market demand. While such requirements may bring a price premium, they add to producer costs, frequently in circumstances where net return margins are already tight.

Notwithstanding the challenges, recent developments have added to the level of interest in smallholder market participation. Widespread market liberalisation, stronger economic growth, new channels for producing and purchasing food, and emerging technology (especially ICT) are working together to suggest some enterprises for smallholders that would not have been previously contemplated. While not universal, many smallholders have good reason to carefully assess these new opportunities for income growth, and the food security and poverty alleviation benefits that improved welfare can generate.

7.1 Successful Establishment of Farmer-groups

The formation of farmer-groups may advantage smallholders for several reasons. First, there are the opportunities mentioned above to reduce their costs by exploiting any available scale economies in procurement, and by exercising or countering market power in transactions with other actors (e.g. traders) elsewhere in the chain. Potentially, farmer-groups could act in an open market environment in commercial relationships with buyers or processors, or possibly direct to the retail stage of the chain through a wholesaler or retailer. Alternatively, they may form part of a particular system such as contract farming, where smallholder contracts may be defined individually but negotiations concerning price and non-price conditions are undertaken collectively.

A key advantage of farmer-groups is that their formation and management are in the hands of the smallholder community. Other avenues for entering the value chain, such as a contracting approach, require commercial partners before any progress can be made, but the farmer group option, while still requiring engagement with various actors along the chain, can at least be initiated from within as a first step towards market participation. There is no set format for what a farmer group might look like or how many members it might have. They could, be informal associations that link to district or regional associations. They could also be formal cooperatives or marketing groups with underlying constitutions governing individual and group behaviour, and enabling entry into contracts for sales, procurement or finance purposes.

In regard to the basic requirements for the formation of farmer-groups, Stockbridge et al. (2003) refer to a list of factors associated with successful smallholder group cooperation (Box 3). Arguably, these factors might be prerequisites for a group to check off before venturing too far, as inability to satisfy any or several of these points risks group difficulties or possibly failure.

Group success also requires strong leadership, particularly in the formative stages when so much needs to be done to achieve a viable entity attractive to its members for the long term. Finding a suitable leader can be difficult, as not only must he/she have the requisite vision and understanding of the group's ambitions, but must be seen as legitimate. In many SSA environments the traditional organisations centred on social or religious objectives, or possibly labour sharing or some aspect of existing farm production and/or harvesting, may provide leadership candidates, but they must enjoy the support of members expressed through a transparently conducted election.

Existing traditional groups might form the basis for the chosen commercial enterprise but, if so, care will be required not to confuse the objectives and use of resources of the commercial focus with other activities undertaken by the group. As Stockbridge et al. point out, there is a risk that traditional organisations may be hierarchical with some members' status subordinate to others, thereby making it difficult to achieve equal participation in the commercial enterprise. For example, age or gender may play a role in decision-making. This, in turn, may motivate some prospective members to avoid the traditional group for the enterprise's establishment, potentially resulting in rivalry between the newly established and traditional groups, and community divisiveness. These issues require careful management if a new group is to have the support of a traditional group and other respected and influential members of the community.

Box 3: Relevant Factors for a Successful Farmer Group

Homogeneity—people engaged in collective activities are relatively homogeneous in terms of their socioeconomic status and cultural values

Size—the size of the farmer group matches the organisational abilities of its members and is appropriate for the type and scale of activities being collectively undertaken

Choice of services—the services provided by the farmer group reflect the demands of its members and are matched by the ability of the farmer group to deliver them

Commercial activities—the farmer group is able to identify and undertake activities that make good business and commercial sense

Self-reliance and autonomy—the farmer group is not dominated by outsiders (e.g. government, donors and NGOs) in pursuit of their own respective agendas, and in the long run is not overly dependent upon outsiders for support and guidance

Finance—the farmer group has the financial capacity to support its own activities and is not heavily dependent upon subsidies

Skills and education—a minimum level of skills and education are represented among the farmer group's membership

Participation—strong incentives exist for active participation by members in decision-making and the use/provision of services

Organisational structure and governance—the structure of the farmer group facilitates good governance and effective day-to-day management, and ensures that the leadership is accountable to its members

Legislation—the legislation within which the farmer group operates promotes good governance and at the same time avoids excessive regulation and the harm that this can do to the autonomous development of the farmer group

Focus—resources are focused on undertaking a limited number of activities effectively rather than a large number of activities less effectively

Source: Stockbridge et al. (2003)

The cohesiveness of the group is part of the social capital it can draw on during both its developmental stages and beyond when new challenges emerge that are driven, for example, by seasonal or price conditions, or by commercial or social difficulties that particular members may face. Regular meetings and a constitution owned by the membership will assist groups to navigate such circumstances and point to their respective responsibilities and accountabilities, but an esprit de corps that cements the group will prove valuable over time.

A further factor in Box 3 central to the ownership of what the farmer group is pursuing is the financial contribution of members. While smallholder access to resources in this regard is most likely very limited, having 'skin in the game' is a powerful motivation factor both individually for each member and overall in terms of group cohesion. Of course, smallholders and their groups are usually very pleased to attract assistance to help progress their enterprise, but even when funds are externally sourced it is important, as Collion and Rondot (1998) point out, that their disposition is supported by the group membership. An overall question for farmer-groups concerns what they take on themselves versus what is done by individual group members in their own right. In this regard it is critical to recall that the reason groups form in the first place is to achieve outcomes that cannot be realised by individual action. This is the basis of two conditions put forward by Stockbridge et al. (2003), as follows:

> 'The rationale … is to (a) provide farmers with better services and better terms of exchange in their transactions than would be the case if farmers acted individually, and (b) facilitate transactions and access to services that might not otherwise be available to many farmers.'

These criteria can be applied by both the individual and the group to all business decisions. Procuring inputs, obtaining advice, participating in group harvesting and storage, as well as ongoing value-adding activities such as cleaning, grading, packaging, and transport and marketing, are all amenable to the benefit–cost assessment regarding what is best done by the individual smallholder, the farmer group or, in many instances, further along the value chain.

Depending on the region and the type of agricultural activity undertaken, it may be appropriate for some 'group' activities to be undertaken at a higher level. For example, individual groups may affiliate with a broader structure of groups or representative associations that, in turn, may be members of a peak group involved in policy advocacy. These could be commodity-based and hence better positioned to assist with specific market or production issues peculiar to particular enterprises, or national or regional organisations dealing with broadly relevant matters with nationwide or regional significance. Importantly, these 'higher level' groups can attain scale that might be necessary for the provision of some services, such as specialised training or the organisation of crop insurance, where the volume of business can be critical to the underlying risk and hence the premiums incurred. Alternatively, some groups may be able to aggregate product or input orders from affiliated farmer-groups to perform a more market-empowered role in negotiations with others either upstream or downstream in the value chain. Being part of a network of organisations in this way, even if they are only accessed for limited purposes, adds to the capacity of farmer-groups to be self-sustaining and have their interests represented effectively.

7.2 Smallholder Skills for Value-chain Participation

It is evident that establishment of a farmer group requires participation as well as governance skills to assist relations within and outside the group. These should not be taken for granted, particularly in the smallholder environment where entering a commercial venture will often be a new undertaking requiring quite different expertise to that acquired in traditional social or religious group settings. The objective is to build the human and social capital of the group and thereby provide an enhanced capacity for the group to progress. Having strategic skills and the ability to be an effective participant are both important, as are the basic financial management, procedural and communication/reporting skills required for accountability purposes and effective group dynamics.

Much of what is required by smallholders to be an effective farmer-group member is of a public-good nature similar to the basic education needed for pursuing a livelihood (and in this case central to breaking out of poverty traps and improving food security). Hence, the role of government and donor organisations is highly relevant to the establishment of farmer-groups, and there are many examples throughout Africa of assistance provided in this regard.

Beyond the basic skills and expertise required for smallholders and their farmer group to function effectively, various other skills are required to undertake the chosen business. On the physical production side, there are technical skills concerning how particular crops or animals are best grown in various agro-ecological conditions. These may be partly developed given existing smallholder experience, although perhaps not extensively so given the historical focus on staples required for a subsistence lifestyle rather than what might be produced in response to market demand. A more commercial focus will also need skills concerning the handling and use of new crop varieties and animal breeds, related input decision-making, and access to and synthesis of market information and budgeting to determine likely costs and returns.

Because the success of the farmer group and their enterprise ultimately impacts the entire value chain, an interesting incentive structure emerges in respect of what training for smallholders might be provided by others in the chain (in their own self-interest). For staples this is likely to be limited, but for more value-added or branded products (e.g. horticultural produce) processors and retailers may be prepared to invest in smallholder agricultural techniques and other skills. It may also be possible to develop public–private partnerships where the costs and benefits of training smallholders are seen to have both public and private advantages, with donors/government joining with value-chain participants to jointly undertake the development of smallholder capacity. Not surprisingly, private expenditure can be expected to focus primarily on training having private benefits, but the skills and expertise generated are likely to also have long-term benefits for the smallholder.

A critically important element of the strategy to build the capacity of smallholders and their farmer-groups is the attention given to rural women. Despite women in East Africa owning only a small proportion of the land, they are responsible for generating a significant part, often the majority, of agricultural production. One study (Saito, Mekonnen and Spurling 1994) has shown that women generate greater outputs than men when they have access to the same inputs. Hence, there are good reasons to target rural women in training strategies directed towards food security. It is also more likely that rural women will use increased income to improve family welfare through improved diets and access to health care and education.

While there are strong grounds to have women included in smallholder training initiatives, the task can often be difficult when their baseline skills and attributes are taken into account. In a unique study undertaken by the Kenyan Government and financed by the World Bank (known as the Kenya Agricultural Productivity and Agribusiness Project or KAPAP), the extent of the disadvantages that rural women face in pursuing agricultural enterprise objectives is readily apparent. Some key findings from the survey report (World Bank 2012a) include the following:

- A higher percentage of men (81 per cent) than women (19 per cent) owned land individually. Areas of land owned by men were about four times larger than those owned by women, and men also farmed larger parcels.
- The majority of women concentrated on the production of food crops and farmed smaller land holdings than men who grew the same crops. Women had higher yields for selected crops (Irish potatoes, bananas and tea) but men registered higher yields for all other crops. A higher percentage of men than women owned all types of livestock except chickens.
- A higher percentage of men than women sold crops. Men decided on the use of revenue from the sale of most crops. Regarding livestock, women made decisions only in regard to chickens.

» Few men (27 per cent) and women (13 per cent) actually sought extension advice. Half of the men and 36 per cent of the women who sought extension actually received advice. The main reason given was that it was time consuming or that extension agents were not available. Most respondents were satisfied with the extension advice they had received, and most had applied the advice. For those who did not, the main reason given was that putting the advice into place was too costly.

» Although the proportions of women and men who were members of groups were similar, larger proportions of men than women held leadership functions in groups.

» Mean income for men was three times higher than for women. A higher percentage of men was engaged in off-farm activities than women and they earned twice as much income as women earned from these activities. More than half of the men had a savings account, compared with a smaller proportion of the women. About one-third of men and one-quarter of women had applied for credit, with a high success rate for both. Men's credit volumes were however larger.

Some further data on access to resources by gender collected in the survey were also examined in the Kenyan Government study (World Bank 2012a). The main results are presented graphically in Figure 10, where it is clear that men have vastly superior access to all significant assets and technology with the exception of improved maize seed, extension advice and ownership of chickens.

Figure 10: Access to Resources of Rural Women and Men in Kenya

Source: Preliminary analysis of Individual Survey Data. *Note: Percentages of women respondents with access to the specified assets. Women's income as a percentage of men's.*

Against this background, the design of training programs to assist the role of women in smallholder agriculture must recognise their particular circumstances. It is clear that women bring quite different endowments of physical as well as human capital to smallholder agriculture. Furthermore, time is very scarce for many women due to commitments at home with children, work requirements in their own fields as well on their husband's land, the preparation of family meals, and fetching water and fuel needs with little support. It follows that both the content of what women would find useful in training programs, as well as the mode in which programs are delivered, may need to be quite different to programs designed for their male counterparts. It is also important, where appropriate, for male and female training to be undertaken together in the interest of building cohesive groups. This may not always be possible, in which case special women-only programs will be necessary. Either way, women are likely to emerge from such programs with higher self-esteem and leadership qualities.

One option for facilitating improved access to training for women is to make use of farmer field schools (FFSs). These are forums where farmers can meet in groups and collaborate with one another assisted by a facilitator to help organise the focus and materials. The aim is to offer and acquire practical information with a view to improving competencies to inform decisions for better quality crop and/or livestock management.

FFSs are well distributed in SSA, including in East Africa following their introduction in the mid 1990s with the assistance of the FAO. Kenya, for example, has 1 000 such schools with 30 000 graduates (FAO/KARI/ILRI 2003). The suitability of FFSs for training women has been examined by Davis et al. (2010) in an IFPRI study that found high levels of participation by women as well as significant benefits in terms of income and crop and/or livestock production.

The value of FFSs is enhanced by their potential use in a wide range of agro-ecological and farming systems. In a recently published study Duveskog (2013) examined FFSs in western Kenya, eastern Uganda and the Kagera region of Tanzania. They were found to empower their graduates in several areas, including innovation uptake, access to services, engagement with markets, collective action and social relations. The most significant results for FFS graduates (relative to a control group) were those reported for Kenya, while lesser differences between FFS graduates and control groups were reported for Uganda and Tanzania.

8. Innovation Platforms and Value-chain Relationships

The formidable challenges facing smallholders and their value-chain partners have been outlined in previous sections of this report. In most cases no single value-chain participant can deal with the problems at hand. Indeed, they may not even be aware of or understand the nature of the issues requiring attention, yet may be able to work with others either participating in or supporting the value chain to achieve the desired outcomes. Whether the constraint is related to production, processing, markets or infrastructure, there may be potential and incentive for value-chain participants to work together with supporting research, program-delivery and donor organisations in their mutual interest.

The term 'innovation platform' (IP) has been coined to describe partner organisations drawn from the public, private and NGO sectors to advance the interests of the value chain. IPs could perform various functions, ranging from building the capacity of value-chain participants to identifying and acting on opportunities, constraints and logistics related to the value adding undertaken in the chain.

In a comprehensive study of agricultural innovation in SSA undertaken for the Forum for Agricultural Research in Africa (FARA), Adekunle et al. (2012) have developed 21 case studies covering eastern, southern and western Africa to show how value-chain participants and supporting stakeholders have cooperated in traditional and specialist activities to achieve individual as well as through-chain goals in domestic and export markets. The researchers collected information from various sources engaged in diverse IP roles along the value chain. Those consulted included farmers, researchers, extension workers, private companies, NGOs, coordinating organisations and government ministries.

It is apparent from the project that cooperation can occur separately or simultaneously at the international, national, district and local community levels, as shown in Table 9. When viewed from these perspectives, the pivotal actors on an IP include essentially all the major influences on the value chain. They can be connected in various ways to movement of inputs and outputs along the physical supply chain—for example, smallholders locally transforming fruits or vegetables from something fresh or raw to a convenience product, cleaned, graded and packed for a child's lunch box; a national or international food processor using high-quality, certified food ingredients for a retail supermarket requiring specific pasta products to meet consumer preferences; a marketing board acquiring fruit with specified qualities and characteristics from smallholder communities; or a network of farmer-groups working together to respond to market requirements and procure inputs.

Regardless of whether the IP is locally, regionally, nationally or internationally focused, the private-sector participants work with the public sector and the NGO community in contributing to and supporting the IP. Again, like their private-sector counterparts, the public-sector/NGO interests are highly diverse. What they have in common is that they do work that is relevant to the value chain and, more importantly, can add to its success. Hence, research agencies are often involved with value chains, as their work is the basis of much potential innovation. Similarly, agricultural departmental officers from both state/provincial and local governments can effectively carry out their program delivery/advisory/policy roles in conjunction with an IP at the same time as they help it to achieve better outcomes; hence, they are welcomed by private-sector actors as well as their public-sector colleagues. Of course, the public-sector participants not only contribute to the work of the value chain, but also benefit from participation because they too are able to use interaction with and feedback from others to help develop their work and its practical use in a commercial environment.

In a similar vein, members of the donor community not only contribute financially, intellectually and with implementation, but also receive 'real-time' feedback as to how their IP participation can be improved. The overall dynamic is that a value-chain participant has to be relevant to the other players and keen to be involved; then, providing there is a good prospect of an enduring and trustworthy partnership, the threshold conditions for an effective IP are satisfied.

Some insight into the issues that IPs may be able to usefully address is obtained from the challenges elicited in the case studies included by Adekunle et al. (2012). These are grouped into five broad categories, namely policy and infrastructure, institutions, markets, support services and farming systems, as shown in Figure 11.

It is clear that every challenge included in Figure 11 is significant. Even those identified less often are listed in at least one-third of the case studies. In East Africa (the case studies were in Ethiopia, Kenya, Rwanda and Uganda) the most frequently identified challenges were 'poor extension / lack of knowledge' and 'poorly developed markets', followed closely by 'poorly organised farmers', 'poor access to inputs' and 'high cost of inputs'. These issues were also identified with similar frequency in the other SSA case studies.

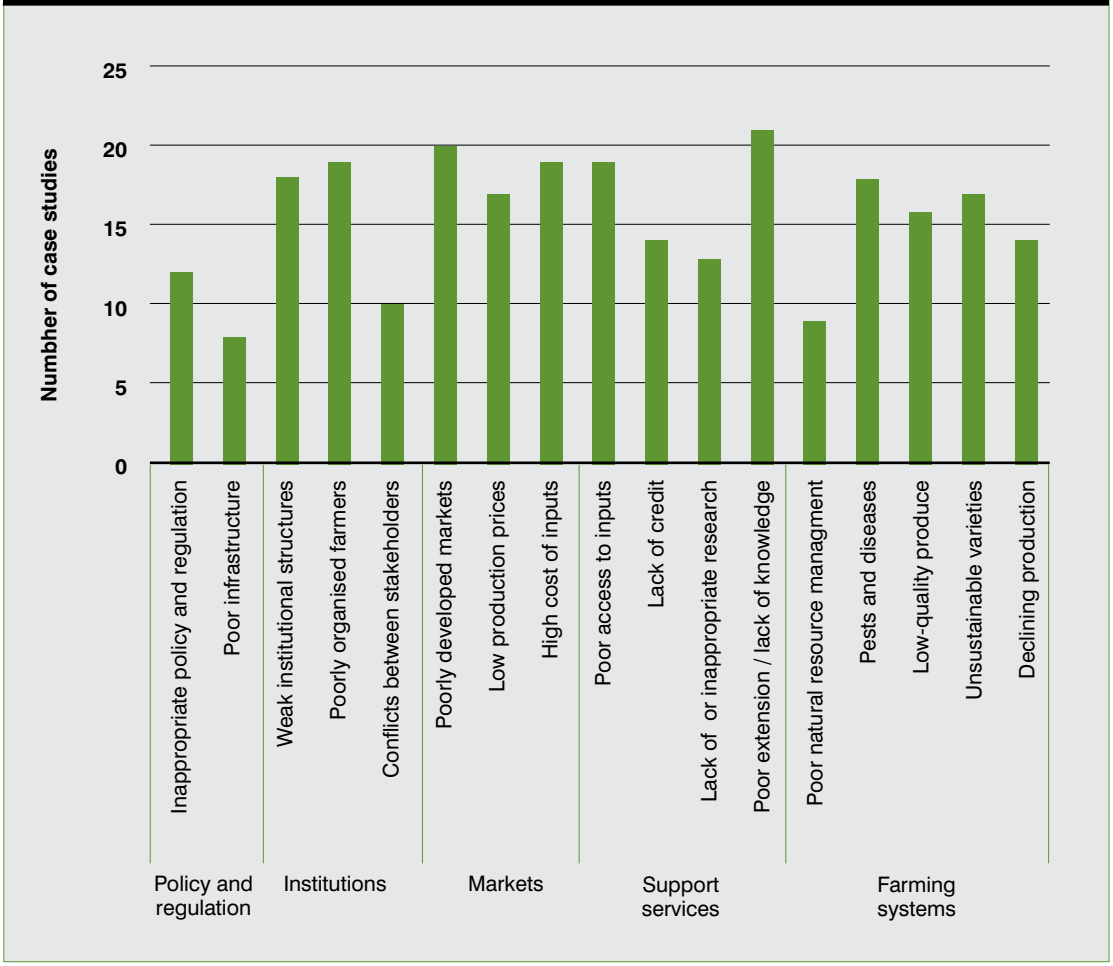
The work of IPs typically falls into three phases: it initially centres on the wherewithal necessary to consider future directions; then evolves into an analytical and collaborative focus; and is followed by a program for implementation and sustainability of selected interventions as well as assignment of roles for IP members. Adekunle et al. (2012) found that public-sector IP participants were the dominant stakeholders in the early stages, particularly in regard to R&D support. In fact, the R&D agencies themselves were often very active in the early coordinating roles. Donor agencies and commercial companies also made early contributions to the IP, particularly so with donor agencies assisting farmers and helping with funding for necessary research projects.

Table 9: Typical Public- and Private-sector Actors Involved in Innovation

Level	Pivotal driving innovation		
	Public/NGO sector	Private sector	
		Commercial sector	Farmer representatives
International and regional	» Donors » CGIAR research centres » FAO, SROs, NGOs	International input and output marketing companies	
National[1]	» MoA (Reasearch, Extension) » NGOs	» Input supply companies » Wholesalers » Processors » Supermarkets, hotels » Representative associations	Farmer unions National farmer associations
District or Local goverment	» District/Local goverment councils » District Agricultural Officers (DAOs) » Local research » Scholls, hospitals » NGOs/projects[2]	» Agri-dealers » Transporters » Traders » Processors	Farmer associations or cooperatives
Community	DAO Extension staff		» Farmer groups or clubs » individual farming households

Source: Adekunle et al. (2012)

Figure 11: Challenges Identified by IPs across SSA



Source: Adekunle et al. (2012)

Later in the innovation process there was a shift in responsibilities of IP members as research occupied a smaller proportion of the IP's time, and the capacity and 'hands-on' content of the IP's agenda increased. Adekunle et al. have suggested that, as the innovation process continued, coordination often shifted to farmer organisations, and local or district government representatives played an increasingly important role.

The various stakeholders all contributed significantly to the work of the IPs but did so from their different vantage points and perspectives. The public-sector participants were particularly active in advancing research, education and training, and policy and regulation in many studies. In most of the case studies the provision of key public goods, particularly government-financed agricultural research, was directly responsible for triggering growth. Some other public-sector responsibilities, such as transport, electricity and water infrastructure, are more difficult to progress due to their long-term nature and capital intensity.

The breadth of private-sector participation on IPs helps to address many diverse issues, including input supply, transport, marketing, processing, capacity building, exporting, advocacy and linkages across sectors. Representation included input supply companies, agri-dealers, processors and export companies as well as some private-sector associations. Training initiatives and technical advice that were often made available in conjunction with input supplies could be seen as useful by-products of suppliers and end users participating on an IP.

NGOs were frequently found to play a significant role in coordinating IP participants and promoting interaction between the public and private sectors, but their major role was supporting the development of networks of farmers. This, in turn, facilitated the scaling up of technology adoption and marketing practices, tasks that were often beyond the abilities of the initial groups included in the IP.

Adekunle et al. also give credit to international stakeholders for the achievements of the IPs—behind all the activity there are international research organisations, companies and NGOs, often supported by donors, that resource studies and fund meetings and workshops to advance the work.

Most of what an IP achieves depends heavily on the interaction of the participants (public- and private-sector groups, NGOs and international stakeholders) as they learn and tell their value-chain partners what opportunities and constraints might be addressed in the interests of efficient operation of the chain. According to Adekunle et al., the most important issues addressed in public–private interactions were the building of partnerships, capacity building and planning, monitoring and assessing activities. Private–private interaction, on the other hand, focused on building farmer organisations and arranging sales and contract details. Regional and international interactions went to yet another area—the development of networking arrangements, and trade and health issues, including Fair Trade and organic product registration.

A particularly important facet of the case studies reported by Adekunle et al. is the contribution of R&D to the work of IPs. The emphasis on R&D is very much a collaborative one where research projects are a product of stakeholder interaction and a response to specific constraints and opportunities identified within the IP. The innovation systems approach is discussed in detail by the World Bank (2007). It stands in sharp contrast to both the supply-driven approach to R&D and the segmented approach to research and extension, with its sequential focus on technology development and information transfer.

Since it is the alliances within the IP that are central to the choice of research activities, it is critical that attention is given to the interface between research providers and private as well as other public IP participants. As Adekunle et al. point out, there is merit in joint planning and implementation of research that can combine the commercial, institutional and environmental experience of IP participants with expert technical knowledge.

The issues canvassed by Adekunle et al. have also been examined from a slightly different perspective in an earlier study undertaken by Henson et al. (2008), which focused separately on smallholder and other value-chain-participant views of the barriers, impediments and costs impacting smallholder entry into the value chain. Using data collected from a group of experts and practitioners, the authors identified two general categories of constraints—those concerning limited access to resources (including land, irrigation and financial resources) and those related to transaction costs affecting the net return from value-chain participation.

The most important constraints seen to inhibit smallholders were infrastructure related, especially those concerning transport and marketing (Table 10), followed closely by support services (particularly technical support), poor access to competitively priced finance and lack of information on prevailing standards. Far less important were household asset holdings, insufficient family labour, insecure land tenure, fragmentation of household land holdings and weak farmer organisations. It is difficult, however, to conclude that the latter influences are unimportant, as the assessments offered may reflect what the experts see as factors that are currently significant but also amenable to change.

When considered from a different vantage point—that of African processing, export trading and modern retail distribution companies considering product sourcing from smallholders—an overlapping but distinct list of factors to that elicited from the smallholder perspective emerges (Table 11). Again, the most important constraints are infrastructure related (especially transport), but product traceability, lack of scale in smallholder farming and concerns over contract enforcement all rate highly in the list of constraints. Not far behind this group are weak communications, lack of reliable/timely information on production, inability to recover loans from farmers, and lack of confidence in regulatory enforcement related to pesticides and veterinary drugs.

Table 10: Expert/Practitioner List of Constraints Limiting Smallholder Participation in Higher Value Supply Chains (in descending order of importance)	
Group 1	Weak/inadequate rural transport infrastructure
	Non-competitive/high-cost transport services
	Weak/inadequate rural marketing infrastructure
Group 2	Lack of scale
	Weak/limited availability of technical advisory services
	Lack of access to competitively priced finance
	Lack of pertinent information on prevailing standards
Group 3	Lack of timely access to improved inputs
	Lack of farmer 'quality' consciousness
	Lack of pertinent market information
	Weak or high-cost services of market intermediaries
	Limited technical knowledge of farmers
	High costs of standards certification
Group 4	Limited commercial skills of farmers
	Lack of business culture
Group 5	Lack of or limited capacity for irrigation
	Distrust or weak bargaining power vs commercial agribusiness entities
Group 6	Weak/absent farmer organisations
	Risk management concerns
	Fragmentation of household landholdings
	Insecure land tenure
	Insufficient availability of household labour

Source: Adapted from Henson et al. (2008)

Table 11: Expert/Practitioner List of Constraints Inhibiting African Processing, Export Trading and Modern Retail Distribution Companies from Sourcing from Smallholder Value Chains (in descending order of importance)	
Group 1	Weak/inadequate rural transport infrastructure
	Inability / high costs of product traceability
	Lack of scale among small-scale farmers
	Inability to enforce commercial contracts
	High transport costs for raw materials
Group 2	Weak communications infrastructure/facilities
	Lack of reliable/timely information on production
	Inability to recover loans from farmers
	Lack of confidence in enforcement of regulations related to pesticides and veterinary drugs
Group 3	High cost of grading and testing delivered products
Group 4	Limited technical knowledge of farmers
	Weak farmer organisations
Group 5	Lack of trust in market intermediaries
	Lack of or limited farmer irrigation capacity
	Regulatory restrictions on direct sourcing from smallholders

Source: Adapted from Henson et al. (2008)

Taken together, the list of constraints assembled by Henson et al. has some points in common with the challenges identified by Adekunle et al., but there are also important differences, particularly those limiting the decision by downstream processors and traders to procure their supplies from smallholders. However, for the purposes of the current study, the main point is that, regardless of the source and nature of the issue, the IP offers an environment where those impacted can discuss their concerns and potential solutions with a view to advancing the interests of the overall value chain.

From a smallholder perspective, the issues will often be related to scale, remoteness, and access to infrastructure and other services, and if the performance of the value chain can be economically advanced through engagement with other interests then progress will have been achieved. In contrast, the problems restricting the interest of a processor, retailer or trader in value-chain participation with smallholders may relate to concerns about product certification, food safety, enforcement of regulations or loan recovery. While somewhat different in their nature, these problems might also be addressed in an IP to the mutual benefit of those involved.

It is likely that IP participants will each have expectations regarding their own roles as well as those of others on the IP. The Henson et al. study indirectly addressed this question in that it asked survey respondents who might assume responsibility for specific issues. This was not addressed from an IP perspective per se but the responses are nevertheless of interest. Government was seen as having primary responsibility for logistics and transport infrastructure as well as providing an enabling environment and coherent legal framework. The role of private agribusiness was seen to extend beyond being the 'target market' to also include assisting smallholders to meet market requirements through technical support, access to finance and management of supply-chain logistics. External development organisations were also identified as having important roles, focusing on support from governments and private agribusiness as well as being an 'honest broker' between supply-chain participants.

In some of the areas covered by the survey it seems inappropriate to assign exclusive responsibility for any particular activity (and, to be fair, the survey did not require such a response). For example, research, training, and extension of skills and expertise to smallholders usually has both public- and private-good characteristics, thereby making it appropriate for both sectors to have a role. Similarly, market information, while having commercial value, is frequently not accessible to smallholders and has some public-good characteristics necessitating public intervention.

Overall, the results from the survey point to complementary public- and private-sector roles. Sometimes, interests and responsibilities can be expected to overlap, thereby suggesting scope for public–private partnerships to progress such issues.

9. Some Lessons from Landcare

From earlier sections of this report, it is evident that farmer-groups have a potentially significant role to play in progress towards smallholder value-chain participation, poverty alleviation and food security. IFAD (2011) expressed their importance very well in proceedings from a conference on New Directions for Smallholder Agriculture with the conclusion that 'Farmers organizations were found to be core to the viability of smallholder farming'. In addition to the significant role of the groups themselves, it is the partnerships formed with a range of stakeholders that are fundamental to both the pursuit of emerging opportunities and action to address barriers and constraints. The partners may be fellow participants located upstream or downstream in the value chain, or others with a supporting role (e.g. research interests, local or regional government, and donors).

Given the significance of farmer-groups and their wider relationships, the question arises as to whether there is an exemplar model that may guide East African smallholder efforts, as well as those more generally in SSA, to participate in value chains, alleviate poverty and improve food security. One such model is Landcare. While it has its origins in Australia, Landcare has in more recent years been taken up in South Africa and East Africa. It is based on the self-determining actions of farmer-groups and the partnerships formed with research and donor communities as well as local, regional and national governments. Landcare has been a successful community-based movement and may offer useful insights into leading practices that assist farmer-groups to achieve their goals.

9.1 The Origins and Essentials of Landcare

An extensive literature addresses the evolution of Landcare from its early days in the mid 1980s in Victoria, where local farmers undertook soil conservation projects together, to the rapid acceleration Australia-wide in group numbers (to approximately 5 000) following the announcement of the Decade of Landcare by Prime Minister Hawke in 1990. The most recent overview of the Australian experience is that prepared by Johnson et al. (2009), although a number of books and articles written by Andrew Campbell, Australia's first National Landcare Facilitator, outline important milestones in Landcare's journey.

While there is much discussion of just what a Landcare group is, Campbell (2000) has captured the essence of their purpose with the following description:

> 'Landcare groups … are local groups of people, autonomous and self-reliant, mainly comprised of land users in rural areas, whose primary aims are to tackle land degradation and develop more sustainable land management practices.'

The key platform for Landcare became the National Landcare Program (NLP), launched in the early 1990s to foster the collective action of landholders and partnerships with communities, industry, researchers and the three tiers of government in Australia (Commonwealth, state and local) aimed at sustainable and integrated resource management. Notwithstanding the interest and financial support of government, Landcare was and remains predicated on the idea that it is the landholders themselves who need to be empowered to address the challenges of land management, and that ownership of the problems they address and the solutions they provide is central to a durable approach that is viable in the long term.

The ‘grassroots’ approach is not only fundamental to the Landcare ethic in the sense that it is ‘of the people, for the people and by the people’, but it is also the basis of the social capital central to the dynamics of Landcare. Typical projects tackled by Landcare groups are not shaped by individual farm boundaries, as their prospects for success depend on addressing the underlying causes of problems and the associated benefits, regardless of land ownership. In this environment trust between group members, together with good cooperation and communication, cannot be compromised and is worthy of significant effort to maintain commitment in what is a volunteer movement of men, women and youth. The desired outcome is individual landholders and their families identifying as one Landcare community committed to working together for a common cause.

Against this background, capacity building of Landcare group members’ skills and expertise, both technically and their ability to work with one another and their partners, is essential. Successive governments have invested significantly in such social capital through various training programs, field days and exchanges with other groups. This effort began with the NLP and has continued under the ‘Caring for Country’ funding program.

Most Landcare groups in Australia are incorporated and have small management committees meeting their accountability responsibilities, and planning and organisation of their activities. Importantly, they also have access to a part-time coordinator and/or facilitator who is paid to work with a number of groups and is usually based in a regional catchment organisation. These people play a critical role, which is summarised by Campbell (2000) from a group perspective as ‘someone to help us work out where we are going and to help us get there’. Their job is very demanding—not only must they facilitate progress by the group through alternative perspectives and sometimes strongly held views and opinions, but they also need a detailed knowledge of the underlying issues, to have credibility with members. Furthermore, these roles probably need to be executed simultaneously across several groups facing possibly disparate issues or bringing different perspectives to the same issue.

Johnson et al. (2009) reflected on the attributes of Landcare in Australia that contributed to its success. They suggest quite a lengthy list that includes:

- long-term vision—a longer term view of where resource management is heading
- democratic governance—democratic decision-making that avoids hierarchies
- government has a supporting rather than leading role—respect of community skills, decision-making capacity and collaborative approach
- local decision-making—empowerment at the grassroots level
- volunteerism—members and supporters doing project work
- involvement of women and youth—active women, including leadership and junior program focus
- Landcare is apolitical—support has come from all political parties
- flexibility—freedom to bring tailored approaches without following a blueprint
- broad sectoral support—industry, media, political parties and conservation groups support Landcare
- national community-based efforts—other voluntary national bodies have aligned themselves with and supported Landcare
- engaging art and culture—Landcare engages socially and has a broader community identification
- incentives—tax instruments in place to support Landcare effort
- private-sector fund generation—a private company (Landcare Australia Limited) attracts corporate funding for education and project purposes
- trusts and foundations—facilities to enable wider public support of Landcare
- community enterprises—some groups have extended their activities to boost Landcare activity
- creativity—Landcare fosters ideas and opportunities.

9.2 The Uptake of Landcare in Africa

9.2.1 South Africa

The origins of Landcare in Africa go back to the mid 1990s when South African NGOs had made contact with Australian Landcare interests (Bosoga et al. 2009). In 1995 an Australian Landcare activist from Victoria, Sue Marriot, visited South Africa and discussed the Australian Landcare experience with South African government officials.

Following these initial discussions, the South African Department of Agriculture established a LandCare (spelt slightly differently to the Australian community initiative, Landcare) Steering Committee and arranged several study tours to Australia. Key activities included participation in the Australian National Landcare Conference held in Adelaide in 1997 and field visits to several Landcare sites.

In 1997 the Government of South Africa announced the National Landcare Program (NLP) and allocated R25 million per year to support its activities. Australian consultants from AgWest and GRM International were instrumental in taking the initiative forward and worked with the Department of Agriculture to develop the Implementation Framework for the LandCare Program. AusAID subsequently added to the support, including funding during the period 2001–04 to strengthen the capacity of national and provincial government agencies to implement the NLP.

Bosoga et al. (2009) make it clear that, while the NLPs in Australia and South Africa share much in common, South Africa's program is a strategy to address environmental problems that were exacerbating rural poverty in the former homeland areas. Hence, livelihoods and job creation sat alongside environmental conservation objectives as the goals of the South African program. Following a visit by the author to South Africa in conjunction with this project, it is apparent that this approach remains relevant today.

Since the establishment of LandCare in South Africa and demonstration of what it can achieve at relatively low cost for smallholders, Landcare programs have been established in several East African nations, including Kenya, Tanzania and Uganda, as well as a number of other African nations (Ethiopia, Nigeria and Rwanda). In the main, however, the establishment of these programs is somewhat different to that in South Africa (and Australia) in that direct national government funding is minimal. Instead, financial resources have been made available by donor communities, particularly international aid agencies such as AusAID and international programs affiliated with the World Bank, CGIAR, UN, the International Fund for Agricultural Development (IFAD), World Vision and a range of others focused on food security and environmental sustainability. This assistance is generally channelled through the NGO community to achieve on-the-ground action together with practical support from relevant national, provincial and local government agencies, as well as research and other public and private interests.

9.2.2 East Africa

Regarding Landcare in East Africa, the International Centre for Research into Agroforestry (ICRAF), now known as the World Agroforestry Centre and based in Nairobi, plays a central role. ICRAF hosts Landcare International (LI), whose objective is to enhance worldwide recognition and adoption of the Landcare approach as a viable model for environment and natural resource conservation, effective public–private partnerships, and authentic stakeholder participation in community action and decision-making. Further details about LI's activities and relevant Landcare publications can be found at www.landcareinternational.net

Some details concerning Landcare in East African nations are included in fliers posted on LI's website. Several particularly helpful articles outlining the introduction of Landcare first in Uganda and then Kenya and Tanzania include Mowo et al. (2009), Tanui (2006), German et al. (2008) and German et al. (2012).

Landcare in Uganda was initiated in 2003 when ICRAF scientists included it as part of the African Grassroots Innovation for Livelihoods and Environment (AGILE) project under the umbrella African Highlands Initiative (AHI). The primary focus of AGILE was collective action for NRM, and hence Landcare was seen as worthy of piloting in three districts (Kapchorwa, Kabale and Bundibugyo) based on the success of the initiative in Australia and the Philippines. Since the pilot program three further districts have commenced Landcare activities—Masaka, Bukwo and Kween.

Tanui and Russell (2009) have described the nature of the AGILE scoping process used as a basis for community-action planning in the Landcare context. Particular attention is given to participatory problem identification, raising awareness among those directly affected in the pilot districts and the broader stakeholder community of the range of land-management issues, potential partners and collaborators in future collective action, and farmer-groups exchanging information via cross-site visits. In short, the AGILE methodology enabled discovery of what were local priority issues concerning the resource base, networking community innovations and solutions both within the community and beyond with stakeholder groups, and establishing relationships with partners in local and national government and civil society organisations to strengthen support for community action.

A particularly interesting and, as far as the author is aware, unique feature of Landcare in Uganda is its use of IPs to advance the work of Landcare groups. The earliest IP is the Kapchorwa District Landcare Chapter (KADLACC), an alliance of institutions with an interest in land management. IPs were subsequently established in the other Landcare districts referred to above.

The KADLACC platform consists of a network of farmer-groups, community-based organisations, government departments and research institutions focused on land degradation and related impacts on productivity. It was established with the support of AHI and local government as a forum that uses Landcare principles to guide its work. Member organisations have the opportunity to share experiences and forward plans and, where productive, to harmonise their activities and budgets. In many respects the IP shares similar values to Landcare groups in that it pays particular attention to local ownership and involvement, flexibility, the value of partnerships, volunteerism and the inclusion of other stakeholders from an early stage in their work (Tanui and Russell 2009).

At the 5th Biennial LandCare Conference held in October 2012 in South Africa's North West Province, Chemangai Awadh, Chairman of KADLACC, outlined what he saw as the IPs' principal benefits. They included:

- improved networking and collaboration among member institutions and district-level platforms in the country; they visit and learn from each other
- skills and technology enhancement for member organisations (hands-on activities)
- improved community attitudes towards land management at Landcare sites
- improved access to and use of technologies through the support of district extension staff and partners
- enhanced technology identification and availability
- deeper experience and extensive networks as the model Landcare platform is visited by other farmer-groups and institutions involved in NRM to learn and share experiences.

Apart from the IP purposely bringing stakeholders together, Mowo et al. (2009) have identified several key actions taken to address land-management challenges. First, the training of facilitators to work with farmers was undertaken, together with training of the farmers themselves in soil and water conservation techniques, nursery establishment, and other enterprises such as bee-keeping and fish farming. Second, the IP was able to bring together the Benet communities and the Ugandan Wildlife Authority (UWA) to find solutions to land access issues to the mutual satisfaction of the parties. Third, farmer exchange visits enabled rapid transmission of information from within the farming communities. Finally, AHI conducted participatory research shaped by needs identified by the communities in their interactions with technical staff.

Mowo et al. (2009) report that participating households benefited significantly from the project. In particular, there were significant improvements in food availability, milk production and household incomes. Interestingly, the benefits extended as well (not to the same extent) to smallholders and their households not participating in the project. In Australia this would be called the 'looking over the fence' phenomenon, something that farmers probably practice worldwide. In the Kapchorwa case, however, perhaps the incentive to adopt good practice is paramount, given that 40–50 per cent of households (containing six to eight people) in the three villages where Mowo et al. (2009) conducted their study have inadequate food security and rely on farms around 1 hectare in size.

Besides the improved food situation, important changes occurred in the way farmers strived to cooperate to address issues of common interest. This was accompanied by better access to information, which resulted in farmers receiving improved prices for their surplus production. Of particular significance was that women- and youth-headed households were prominent in the beneficiary group, a significant outcome given their disadvantaged position in regard to land ownership and decision-making.

Overall, it is apparent that the Landcare model at work both within and between the farmer-groups and the IP is at the centre of the success achieved in Kapchorwa. Mowo et al. (2009) have captured the essence of the project in the following terms:

> 'The highly participatory and consultative process embodied in the Landcare approach in terms of selection and implementation of research and development activities, stakeholders involvement, working with multiple partners, continuous support of farmers by a multidisciplinary team of professionals, facilitation of farmer grassroots institutions and their linkage to the district levels of governance and addressing the multiple factors affecting NRM (e.g. access to information and technologies, collective action, capacity to experiment) and use of integrated approaches and holistic to NRM were among the major factors that led to success.'

Many agencies and institutional arrangements were responsible for the achievements of Landcare in Kapchorwa. Mowo et al. (2009) mention agreements that ICRAF (the CGIAR agency responsible for AHI implementation) had with the Ugandan National Agricultural Advisory Services (NAADS) and the willing involvement of many others (ActionAID, the Mt Elgon Ecosystems Research Program, UWA, United Nations Development Program (UNDP) and the International Union for Conservation of Nature (IUCN) in the initiative. In addition, AusAID has also used its small grants scheme to help build institutional and technical support in KADLACC and other districts.

The KADLACC model is of interest not only because of the short-term improvements it has brought to smallholder communities, but it also stands out for the longer term social capital it has left in place to address future challenges. There had been many efforts and much expenditure prior to the AHI, including those of several well-intentioned NGOs working with government agencies. Their work concentrated on, often with considerable success, their particular responsibilities rather than the broader landscape and, more importantly, they were program-focused without necessarily leaving the social infrastructure to serve the community's longer term interests.

Following its introduction in Uganda, Landcare was introduced in Kenya and with AusAID support in 2005. The Kenya Landcare Network's (KLN's) membership includes research and education institutions, NGOs, community and faith-based organisations, as well as individual champions of Landcare. The KLN was formed in order to facilitate the development of Landcare in Kenya, particularly through skill development and capacity building, as well as promotion of private–public-sector partnerships, sound land management technologies and information transfer.

In 2009 the AusAID small activities program provided a grant to support limited Landcare activities in two pilot areas (Kola and Kalama) in the semi-arid and variable-rainfall Machakos district near Nairobi, where land is vulnerable to degradation. The primary objective of the project was to demonstrate the Landcare approach through tree planting as an entry point. Group members were supported by dissemination of Landcare-relevant knowledge, information and training, and have been able to successfully develop small nursery enterprises based on local seed harvesting. In addition, available funds were used to train Landcare facilitators to work with the groups in Machakos as well as six other districts.

Income from the Machakos enterprises has been used to purchase water tanks and milking goats, and help foster local chicken production and agroforestry. The Kenya Network for Dissemination of Agricultural Technologies (KENDAT) was the lead organisation in the implementation of the overall project, providing both technical and managerial support. KENDAT has been assisted by ICRAF, particularly in regard to technical backstopping for tree planting, propagation techniques and nursery care.

The outcomes achieved from the efforts to date have been impressive. Awareness of Landcare has increased significantly across the Machakos district, and over 400 group members in 15 groups have developed their skills in nursery establishment and afforestation (Tanui et al. 2010). It has also been introduced to communities in Kibwezi, located further to the southwest of Nairobi, where several groups have been identified and introduced to Landcare's main principles. The farmers are currently involved in conservation farming through the use of fertiliser trees for improved production. Contracts have also been negotiated with other partners in western Kenya on the possibilities of using the Landcare approach.

While the positive results can be seen, the first few years of Landcare in Kenya revealed several areas warranting attention to assist further progress. In part they concern problems related to input constraints, such as the quality of seed or the availability of water. Also, they are pest related, such as livestock eating unprotected seedlings. However, they are also institutional in that collaboration does not always occur between grassroots organisations, and linkages with key stakeholders such as local government and relevant ministries remain weak and therefore often fail to give necessary project support. Some districts may have multiple initiatives underway, with little cooperation, leading to missed opportunities for realising economies of scale as well as confusing messages to the community.

Landcare International's website provides some further reflections on Kenyan efforts so far. While it points to many achievements, there are also several challenges, including linkages between community knowledge and research, coordination of technical support to farmers, knowledge gaps in landscape management and land management difficulties. Some of these issues, as well as those discussed above, may be able to be addressed in an IP environment, as in the Ugandan Landcare experience.

In Tanzania, Landcare was initially established in 2008 in Ng'wasa village, Korogwe district, with the assistance of an AusAID grant. Since 2008 several other villages in Korogwe and the neighbouring Lushoto district have also commenced Landcare programs. Initial activities have been guided by a National Landcare Taskforce whose membership comprises researchers, the National Environmental Management Committee, the Millennium Development Village and Floresta Tanzania.

As in Kenya, Landcare in Tanzania has focused on farmer training, facilitator training, farmer to farmer visits and demonstration projects. The project has also made headway on institutional issues such as amendment to by-laws related to resource management. In Ng'wasa, conservation farming has been the main focus, with the construction over 3 years of 10 km of terraces, tree planting, improved farm practices and new banana plantations. Some 60 per cent of households have been trained in Landcare and, of these, 55 per cent are headed by women.

Landcare in Tanzania can point to many successes in its first few years—agricultural practices have been improved and there is broad acceptance across communities and government agencies that the initiative is yielding worthwhile results. Much remains to be done to scale up the approach with a view to wider adoption. There is interest in broadening the training effort to address value-chain and marketing skills, and suitable institutional participation in an IP environment may assist in this regard.

The learning requirements for Landcare are quite extensive in that strategies are required to train facilitators as well as the members of farmer-groups. Moreover, the subject matter is diverse, as it not only deals with conservation farming practices but also addresses how farmer-groups develop and implement their action plans as well as other resource management tools such as by-law development. Fortunately, the community-group nature of Landcare lends itself to group education and learning and is attractive from a program cost perspective, particularly if compared with alternative options that are restricted to one-on-one or one-on-two, -three or -four teaching environments.

An attractive option for assisting Landcare group capacity building is the FFS model referred to earlier in section 7.2 of this report. The utility of this approach has been addressed by Tanui et al. (2010), who have investigated the potential of FFSs in regard to meeting Landcare's education requirements. While the FFS model was developed as a tool to promote skills-development curricula for farm management purposes, community Landcare is concerned with interventions to improve the local landscape and is also amenable to a group learning approach.

Against this background Tanui et al. suggest that a first step is to develop facilitators drawn from the farming community, local government and other potential local development partners. The authors see potential for going beyond Landcare goals to also embrace livelihood and enterprise options that can be integrated with land management conservation objectives. This suggestion marries well with the analysis presented in this report, as farmer-groups are seen as central to the viability of smallholder farming. In fact, Tanui et al. propose that the facilitators would become the early elements of a multi-stakeholder platform, as discussed earlier in the Ugandan IP context.

Following development of the facilitators, Tanui et al. see FFS group engagement centred on collective action and the principles of the Landcare approach. The central element would be ownership and solutions to locally identified problems, possibly supplemented with appropriate research to inform the decision-making options using an evidence-based approach. There would also be opportunities to begin integration of economic development with landscape management, as well as the wider goals of livelihoods, poverty alleviation and food security.

The FFS proposals put forward by Tanui et al. were developed and tested in the field in the Machakos district of Kenya. The FFS model was compared with other possible approaches and the analysis benefited from visits to Global Environmental Fund (GEF) districts to gain an overview of the FFS approach and the general landscape situation. Focus-group discussions were conducted with FFS members and the wider community as well as district-level government representatives and civil society members.

10. Farmer-groups and Innovation Platforms—Kenyan Case Study Questionnaire

Having identified the potential roles that farmer-groups and IPs can play to assist smallholders participate in the market and the wider value-chain environment, there are many questions concerning how their design and implementation might best be addressed in a practical setting. To gather some insight into the important issues, it was decided to conduct a case study focusing on Kenya due to its urban and food market development, the potential for smallholder value-chain participation, the interest among research and NGO communities in the topic, and the experience with community-based groups including, over the past decade, Landcare groups developed with the assistance of the KLN and external support from AusAID and others.

10.1 Farmer Group and Innovation Platform Questionnaire and Respondents

To inform the Kenyan case study, a questionnaire was developed in mid 2013 to elicit expert views on the role of farmer-groups and IPs and the significant factors central to their establishment and success. The questions addressed whether the respondent thought farmer-groups and IPs could play a significant role in the value chain and, if so, for which activities they might be best suited, with a view to assisting smallholders as well as the overall performance of the value chain. Further questions addressed how to best organise farmer-groups and IPs, the expertise and personal and social skills necessary for their development, and any catalytic actions that might accelerate their success.

Preparation of the questionnaire benefited from access to work undertaken prior to the commencement of this study. In particular, the studies published by Adekunle et al. (2012), Henson et al. (2008) and Stockbridge et al. (2003) all covered relevant areas and hence were useful input for the drafting of questions put to respondents. The questionnaire also benefited from the author's discussions with colleagues in Kenya and Australia, as well as at a Technical Centre for Agricultural and Rural Cooperation (CTA) 'Making the Connection' conference held in Addis Ababa in November 2012 on the topic 'Value Chains for Transforming Smallholder Agriculture'.

Each respondent was asked to address 18 multiple choice questions. They were also given the opportunity to comment on their answers or provide additional information deemed to be appropriate. A copy of the questionnaire is provided at Appendix 1.

A sample drawn from government, industry, and Kenyan-based and international NGOs and research organisations was canvassed using an electronic online survey returned to the author by email. Of the 100 experts included in the sample, some 42 responded. Just over half (52 per cent) were from Kenya, while the remainder were from elsewhere in East Africa, Europe, the United States and Australia. The most significant group of respondents comprised research organisations, who made up 50 per cent of the total sample. Government and international organisations and NGOs each made up 21 per cent of responses, while industry (farmer organisations and food processing interests) contributed approximately 7 per cent of responses.

10.2 Results from the Questionnaire

10.2.1 Potential Role of Farmer-groups

Early in the questionnaire, respondents were asked for their views regarding whether farmer-groups can be significant for assisting smallholder participation in urban food markets in major cities, as well as rural town and village markets. As shown in Figure 12, a large majority, in excess of 90 per cent, of respondents indicated that farmer-groups were either critically or very significant in this regard.

Less than 10 per cent of respondents advised that farmer-groups were of some significance, and none saw them as insignificant, in regard to enabling smallholder market participation. Kenyan respondents were particularly enthusiastic about farmer-groups as an avenue for enabling smallholder market participation, with in excess of three-quarters of them advising that groups played a critically significant role.

The reasons behind respondents' support for farmer-groups are captured in their comments on the question. While space prevents the inclusion of all 24 comments offered on this question, the following few quotes provide useful insights into their thinking.

'Farmer-groups are vitally important in bringing like-minded farmers together to address key development issues.'

'… collective group farming and farming activities are more successful in improving livelihoods than individuals acting on their own.'

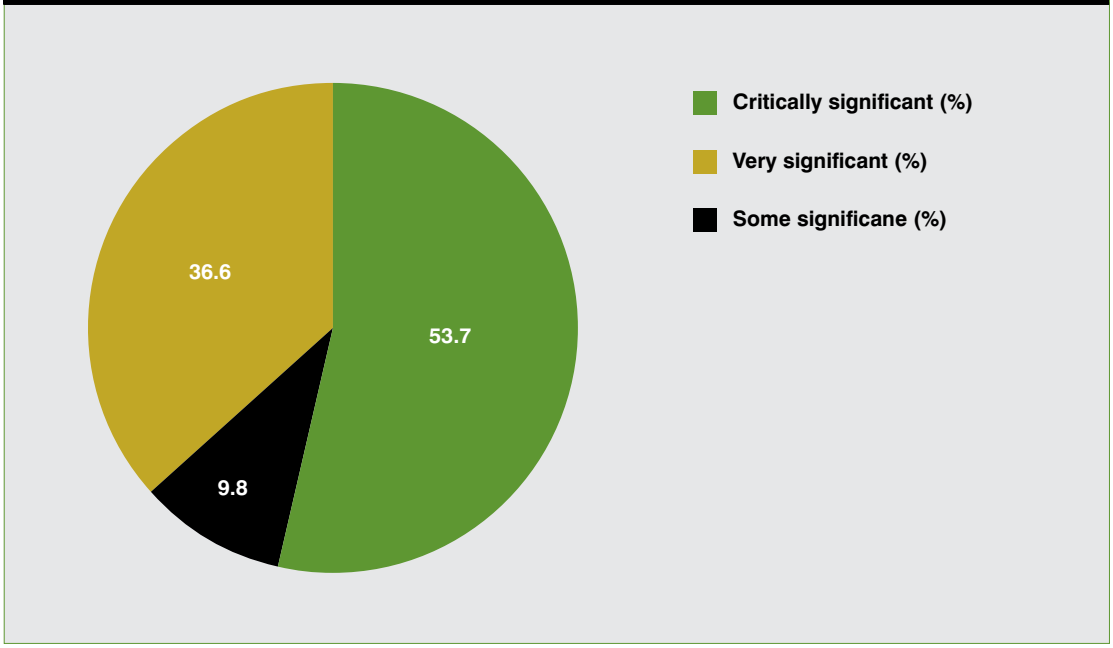
'… small production volumes …, large spatial distribution (of smallholders) and poor road and transport networks make individual marketing costly and unprofitable.'

'Farmer-groups are key for critical mass, lowering transport costs and quality control.'

'Farmer-groups enable smallholders to negotiate for better prices and also keep (the) middleman at bay.'

In regard to which areas of agriculture might benefit most from farmer-group involvement, respondents as a group saw all activities as having some potential, but the most popularly identified enterprise was vegetables, followed by fruits, nuts and livestock, and then cereal and mixed cropping. This pattern was similar among Kenyan and other respondents, although the Kenyan respondents were less confident than their counterparts elsewhere that cereal cropping would be amenable to a farmer-group approach, with 30 per cent (compared with 47.5 per cent) of the subgroup nominating cereal crops as a suitable enterprise.

Figure 12: Significance of Farmer Groups for Market Participation



In part this may be due to mixed-cropping products being seen as dominated by staples produced mainly for household consumption with little additional supply available for marketing. Also, the degree to which vegetables, fruits and nuts and, to a lesser extent, livestock are put forward as suitable enterprises may reflect the extent to which buyers along the value chain expect grading, cleaning and other health-related certification requirements, which are costly but, in terms of unit costs, can be minimised by group aggregation of product. Again, some of the comments provided by respondents and reproduced below aid our understanding.

> (Suitability) 'depends on regions.'
>
> 'Farmer-groups would greatly help marketing of perishable farm produce.'
>
> 'High value to volume crops suit farmer-groups for marketing purposes.'
>
> 'Fruits, nuts and vegetables … (require) grading, storage and preservation in facilities … and this can be best handled by farmer-groups.'

The extent to which smallholders will show interest in farmer-groups can be expected to depend on the perceived benefits of participation. In short, if a smallholder does not see benefits from the group that he/she cannot achieve in isolation, then membership confers little, if any, advantage, which would most likely prompt a decision not to join. This is especially so when the costs of belonging to a farmer group are recognised as group input, and time away from other activities and the family home are required.

Against this background the questionnaire asked respondents to select, from a list of 14 options, up to 5 that would most benefit smallholders as a result of forming farmer-groups. The results for respondents from Kenya and elsewhere are reported in Table 12.

The four most commonly nominated factors for farmers joining farmer-groups were stronger negotiating position, lower transport and marketing costs, lower input costs and attracting buyer interest. The first three relate directly to improving profitability while the fourth concerns the underlying viability and value-chain interest of a smallholder business enterprise. Most of the other factors included in Table 12 also received some support but all lagged significantly behind the top four. The next four most highly ranked, in terms of frequency of their nomination, were a viable sized group for extension services, joint provision of infrastructure, access to lower cost finance and access to market information— all service-related aspects of a farm business more accessible to a group compared with an individual smallholder.

Table 12: Benefits to Smallholders in Kenya from Forming Farmer-groups

	All	Kenya	Elsewhere
Stronger negotiating position	72.9	80.9	64.0
Lower transport and marketing costs	66.2	68.2	64.0
Lower input costs	63.3	71.8	54.0
Attracting buyer interest	56.2	71.8	39.0
Viable sized group for extension services	37.6	30.9	45.0
Joint provision of infrastructure	35.7	40.9	30.0
Access to lower cost finance	31.0	40.9	20.0
Access to market information	30.0	17.3	44.0
Access to group funds	28.1	30.9	25.0
Access to donor funds	18.6	17.3	20.0
Lower processing costs	18.1	8.2	29.0
Access to communication services	13.8	8.2	20.0
Access to / influencing research and development	13.8	12.7	15.0
Other factors	11.9	9.1	15.0

Note: Ranked as the most important by the percentage of all respondents.

While much of the discussion surrounding Table 12 concerns smallholder cash transactions, there are also many other incentives as to why smallholders might prefer to pursue market participation as group members rather than alone. The questionnaire respondents were asked to identify up to a maximum of four such factors from a list of nine. The results are presented in Table 13 for both the overall group and the two subgroups.

The sharing of knowledge of farming techniques and expertise, provision of support to farmers, and improved NRM are the three most popular activities best conducted by farmer-groups. They are significantly ahead of pest and disease management and pooling labour for farmer and conservation tasks, which both attracted support from 40–50 per cent of respondents. However, all other options were also seen by a significant proportion of respondents as being activities best conducted by groups. Some were put forward frequently by particular organisation groups; for example, improved management of land tenure and challenges, which was identified by nearly two-thirds of government and international agency and NGO respondents. Also, respondents added to the initial list of options with further suggestions for activities best undertaken by farmer-groups. One suggestion was access to inputs (rather than their cost, which was covered in Table 12), and another was improved decision-making resulting from group discussion before choice.

10.2.2 Organising Farmer-groups

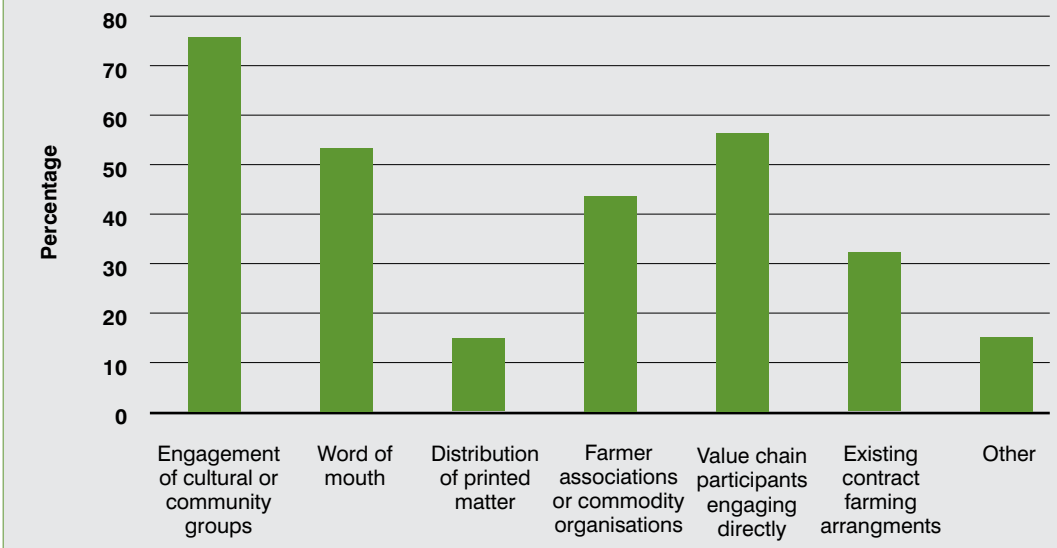
Various avenues are available for attracting smallholders to join farmer-groups. A range of options for doing so and their respective popularities are presented in Figure 13. Three options stand out. Not surprisingly, face-to-face engagement of existing cultural, spiritual or community groups by local agricultural or government representatives or NGOs is most often suggested, as it has the advantage of contact with people with established relationships, although this may not always be the best composition of people for an enterprise-oriented farmer group. Smallholders talking to one another about their common interests (word of mouth), and other value-chain participants (e.g. traders, processors and retailers) engaging smallholders, also received a little less but still strong support. The other options—farmer associations or commodity organisations meeting with smallholders, distribution of printed matter by local agricultural or government representatives or NGOs, and using existing contract farming arrangements to help organise farmer-groups—all attracted some interest from respondents.

Table 13: Activities Best Conducted by Farmer Groups Rather than Individuals

	All	Kenya	Elsewhere
Shared knowledge of farming techniques and expertise	82.4	90.9	73.0
Providing support for farmers	71.0	68.2	74.0
Improved natural resource management	63.3	54.5	73.0
Improved pest and disease management	47.1	45.5	49.0
Pooling of labour for farming and conservation tasks	45.2	40.9	50.0
Improved management of land-tenure issues and challenges	30.5	22.7	39.0
Implementation of product traceability systems and compliance with food safety requirements	27.6	40.9	13.0
Better relationships with other community members	16.2	9.1	24.0
Other	7.1	9.1	5.0

Note: Ranked as most important by the percentage of all respondents

Figure 13: Means of Attracting Smallholders to Farmer Groups (percentage of respondents)



Depending on local demographics, employment opportunities and the social, cultural and economic setting, farmer-groups may be highly diverse. Respondents were asked what they thought were the factors (up to a maximum of eight) most likely to help the establishment and long-term success of farmer-groups. The results are presented in Table 14. Interestingly, every factor (with the exception of background of the leader) received greater than 10 per cent support from respondents. The quality of group leadership was the most frequently suggested factor, with 84 per cent of respondents identifying its importance. Gender of potential members, good governance arrangements, focus on early and achievable outcomes, the availability of a group facilitator, honesty and trust among the group membership, and clear and a limited number of goals all enjoyed the support of more than half of respondents. Again, respondents contributed ideas of their own as to what might assist the success of farmer-groups in Kenya. For example, it was suggested that it would be helpful to build the capacity of identified leaders to organise and forward manage farmer-groups.

Behind the aggregate results there is some diversity of views among the two geographical zones and the four organisational groups. While all seven factors receiving in excess of 50 per cent support from the respondents in aggregate also received similar support from the respondents outside Kenya, the outcome was slightly different for the Kenyan respondents. In the latter group five of the seven factors noted above for their importance were also nominated by more than half of the Kenyan respondents subgroup. However, two other factors—formal arrangements (such as a charter, rules or articles of association) underpinning the group, and homogeneity of socioeconomic status of members—were also nominated by this subgroup.

Each organisational group, while having much in common with other groups and the overall results, flagged particular factors as important. At least half of the government and international agency respondents identified homogeneity of socioeconomic status of members, self-reliance, empowerment and group autonomy, and skills and education of members as important. The industry group of respondents (a small group of three) indicated similar support for skills and education, but also added formal arrangements underpinning the group and the size of the group as factors central to establishment and longer term success. Some 56 per cent of the NGO respondents advised of the importance of widespread member participation, while a similar proportion of researchers thought that homogeneity of socioeconomic status of members was among the top reasons.

Table 14: Factors Assisting Establishment and Success of Farmer-groups

		Location		Organisational type		
	All	Kenya	Elsewhere	Government and international	NGOs	Research
Quality of group leadership	84.4	75.2	94.0	75.0	88.9	84.8
Gender of potential members	65.4	80.0	60.0	87.5	88.9	52.4
Good governance arrangements	64.9	75.2	54.0	75.0	44.4	70.5
Early and achievable outcomes	60.5	47.6	74.0	62.5	55.6	65.7
Group facilitator to assist	60.0	51.4	69.0	50.0	88.9	51.4
Honesty and trust among membership	57.6	61.0	54.0	75.0	22.2	61.0
Clear and limited goals	55.6	47.6	64.0	37.5	55.6	65.7
Underpinning formal arrangements	42.9	51.4	34.0	37.5	22.2	51.4
Age of potential members	41.0	46.7	35.0	50.0	55.6	28.6
Homogeneity of socioeconomic status	41.0	57.1	24.0	50.0	11.1	56.2
Self-reliance, empowerment and autonomy	38.5	37.1	40.0	62.5	44.4	28.6
Size of group	35.6	41.9	29.0	37.5	22.2	32.4
Skills and education of members	33.7	46.7	20.0	50.0	33.3	23.8
Widespread participation in decision-making	29.3	19.0	40.0	12.5	55.6	28.6
Financial capacity of group	23.9	28.6	19.0	12.5	22.2	22.9
Background of leader	9.8	14.3	5.0	12.5	33.3	0.0
Other	7.3	9.5	5.0	12.5	11.1	4.8

Across both locational groups and all four organisational groups, gender was seen as significant. In aggregate it was the second-most frequently identified factor, just behind the quality of group leadership. However, respondents were sharply divided when it came to indicating whether farmer-groups would be better established and more successful if predominantly female, male, or mixed male and female membership. While no respondent thought predominantly male membership would work best, some 56 per cent of respondents advised that mixed-gender membership would work best, while the remaining 44 per cent indicated predominantly female membership to be the key to success.

It is difficult to explain the results reported for this question, but one line of argument may be that, while mixed membership is preferred (because it involves anyone interested, regardless of gender, in the farmer group), it can be problematic if it results in male-dominated groups with the potential for female members to become disenfranchised and frustrated. Some insight into this issue can be gleaned from the discussion later in this section of training for rural men and women.

10.2.3 Equipping Farmer-groups for Success

Once established, the progress of a farmer group will be influenced by the skills and expertise of its members. Table 15 contains eight options that bear on the effective participation and contribution of smallholders in farmer-groups.

All factors included in Table 15 were regarded by at least 20 per cent of respondents as important for successful group participation. The three most popularly selected factors—skills concerning communication, financial management, strategy and leadership-were those that appear to be central to productive group interaction. Lower down the list were some of the more specialised areas of expertise that, while important, may not be so significant with respect to group development and dynamics.

One advantage of having smallholders in groups is the ease of providing training on an economic basis. Often, smallholders have similar demands for technical as well as social, business and environmental skills and expertise, such that these can be provided economically to groups by various government or non-government providers in FFSs or other informal learning environments. There is the question of how best to provide such training—whether to one mixed-gender group or separately to men and women. Also, there may be differing demands from men and women regarding the content of training. These issues were explored in the questionnaire and the results of the responses are shown in Table 16.

It is apparent from Table 16 that the respondents from Kenya and elsewhere, respectively, have quite different views on this subject. Over two-thirds of Kenyan respondents advised that it is best to offer the same training to one mixed-gender group. In contrast, less than one in five respondents outside Kenya shared this view. The most significant support from the latter group was for different content for men and women but for this to be provided in the one mixed-gender group. This view was by no means uniform, with nearly as much support for either different or the same content being offered separately to men and women.

The interest in this issue is reflected by the fact that some 40 per cent of respondents took the opportunity to comment on it. The preference to have the same content provided to one mixed-gender group appears to be an ideal outcome. As one respondent put it, '*It is important to recognise the specific roles of men and women in a community and to ensure that both genders understand the needs and concerns of the others*'. However, for several reasons, as acknowledged by some respondents preferring the same content given to the one group, this may not be possible. In some communities social norms hinder men and women sitting in the one group.

Table 15: Skills and Expertise for Successful Group Participation

	All	Kenya	Elsewhere
Communication and interpersonal skills	75.0	66.7	83.8
Financial management skills	53.7	71.4	35.0
Strategic and leadership skills	43.9	28.6	60.0
Technical production related skills	40.9	47.6	33.8
Technical input use knowledge	31.1	38.1	23.8
Risk management skills	24.4	23.8	25.0
Natural resource management skills	21.3	19.0	23.8
Other	9.8	9.5	10.0

Note : Ranked as the most important by the percentage of all respondents.

Table 16: Best Strategy for Training Men and Women

	All	Kenya	Elsewhere
Same content and one mixed-gender group	46.2	68.2	17.6
Same content separately to men and women	17.9	13.6	23.5
Different content to one mixed-gender group	17.9	6.8	32.4
Different content separately to men and women	17.9	11.4	26.5

Note : Ranked as the most important by the percentage of all respondents.

Furthermore, it may not always be productive to have men and women together due, as another respondent suggested, to '*men being dominant and overbearing and women tending to shy away from contradicting men or offering better options/proposals/responses*'. Sometimes, it may not be practical for logistical reasons to have men and women together, as each gender has specific work and family tasks, thereby making it more convenient to offer separate training. In conclusion, it seems best to leave the organisation of training to the local community, who are best placed to reach solutions most suitable and effective for their specific circumstances.

The achievement level that farmer-groups can potentially attain is also impacted by the interactive behaviour of the group itself. When group dynamics are poorly developed, individual members can become frustrated and outcomes can be more difficult to generate. Against this background, respondents were asked to consider nine options and nominate the three most important group behaviours most likely to generate outcomes and meet the needs of members. The results are presented in Table 17.

While no option received less than 10 per cent support from respondents, three options stand out for their relevance to the Kenyan and 'Elsewhere' subgroups as well as the overall group. These include trust among members; capacity to network; and preparedness to share skills, knowledge and experience.

10.2.4 Catalysts for Group Self-help

For farmer-groups to achieve early progress with their enterprise activities, it is often helpful to have the services of a facilitator with experience in group establishment and conduct of business, as well as an understanding of how to help groups help themselves through decision-making processes and access to services. There is a variety of options that may be available to secure facilitator services. Six are listed in Table 18, where respondents as an overall group and according to their organisational type have nominated what they regard as the two most useful options for this purpose.

Three options in Table 18 attracted particular interest, with at least 40 per cent of the total sample indicating their support. The most popular was the use of NGOs, community-based organisations (CBOs), faith-based organisations or farmer associations to provide facilitators. The next two most highly supported options were trained government facilitators to work within and between farmer-groups, and the assistance of value-chain partners (e.g. processors, traders or retailers) to provide facilitators. The options involving local youth included in Table 18 are less well supported, possibly due to the relative lack of experience of younger people and the challenge they may therefore have in respect of credibility with the group membership.

Table 17: Important Group Behaviours

	All	Kenya	Elsewhere
Trust among members	79.4	85.2	72.2
Capacity to network	52.5	50.0	55.6
Preparedness to share	45.0	36.4	55.6
Willingness to help fellow members	30.0	27.3	33.3
Well-understood group rules and regulations	26.9	26.1	27.8
Group rather than individual decision-making	21.9	21.6	22.2
Understanding of roles and responsibilities	19.4	21.6	16.7
Continuous improvement in group culture	17.5	18.2	16.7
Other	12.5	9.1	16.7

Note : Ranked as the most important by the percentage of all respondents.

Table 18: Options for Provision of Trained Facilitators				
	All	Organisational type		
		Government and international	NGOs	Research
NGOs, CBOs, faith-based organisations or farmer associations	66.7	44.4	88.9	66.7
Trained government facilitators	47.6	66.7	33.3	47.6
Value-chain partners	40.5	44.4	33.3	38.1
Local youth—government-funded	21.4	33.3	11.1	23.8
Local youth—commercial support	14.3	11.1	11.1	14.3
Other	14.3	11.1	33.3	9.5

Note : Ranked as the most important by the percentage of all respondents.

It is interesting to observe what support respondents from the various organisation groupings lent to the options in Table 18. The government and international agency respondents gave most support to having trained government facilitators, while their counterparts from the NGO community suggested NGOs, CBOs, faith-based organisations and farmer associations as their most popular solution. Researchers gave their highest level of support to the NGOs, CBOs, faith-based organisations and farmer associations, but did so only slightly ahead of support for trained government facilitators and, to a lesser extent, assistance from value-chain partners.

The importance of the issues surrounding group facilitation is reflected in the many comments provided on this area of the questionnaire. Some of the insights offered are set out below.

> 'Trust and competency of facilitators is critical. Groups rarely succeed without someone to drive them.'

> 'I think a link between the older farmers and the youth would provide a good nexus for sharing of knowledge among such groups in addition to supporting just the local youth.'

> 'The group needs a facilitator not of their origin but technically wise and trained in facilitation.'

> 'Using both NGO- and CBO-based organisations in collaboration with government extension workers creates relationships and trust and hopefully synergy.'

> 'The best solution will be context specific.'

The views offered reinforce and add to the earlier discussion of facilitators, particularly their critical role, their potential to help diverse group members work together, and the opportunity to use facilitators from multiple sources.

10.2.5 The Potential Role of Innovation Platforms

A short explanation of what is meant by an IP was provided in the questionnaire, along the lines of partner organisations from the public, private and NGO sectors coming together to advance the mutual interests of the value chain. Theoretically, IPs could include any type of organisation. The key to membership lies more in the functions of the IP, which, in the context of assisting the mutual interests of food-related value chains and smallholders, could include various functions ranging from building the capacity of farmer-groups to identifying and tackling opportunities and constraints related to value adding in the food chain.

To begin with, respondents were asked how important they thought it would be for Kenyan smallholder farmer-groups to participate in IPs, with a view to enhancing their prospects of market participation. The results are presented in Figure 14.

Over two-thirds of respondents advised that the role of IPs is critically important, with the remainder indicating IPs to be of some importance. No respondent thought IPs were not very important or unimportant.

The overwhelming support for IPs from respondents is captured in their comments offered in response to the question. Some typical responses included the views that IPs afford an opportunity for '*… building mutual trust amongst the value chain participants …*'; '*… bringing stakeholders together to discuss the entire value change*'; for farmer-groups to '*… tap into the immense resource pools of such groups …*'; and '*… providing a great avenue to support entrepreneurial development opportunities for community groups …*'.

Further details concerning how Kenyan smallholders might benefit from interacting with upstream and downstream interests in the agri-food value chain were sought from respondents by asking them to nominate up to five areas where IPs could help most. The results are presented in Table 19.

Figure 14: Significance of Innovation Platforms for Market Participation

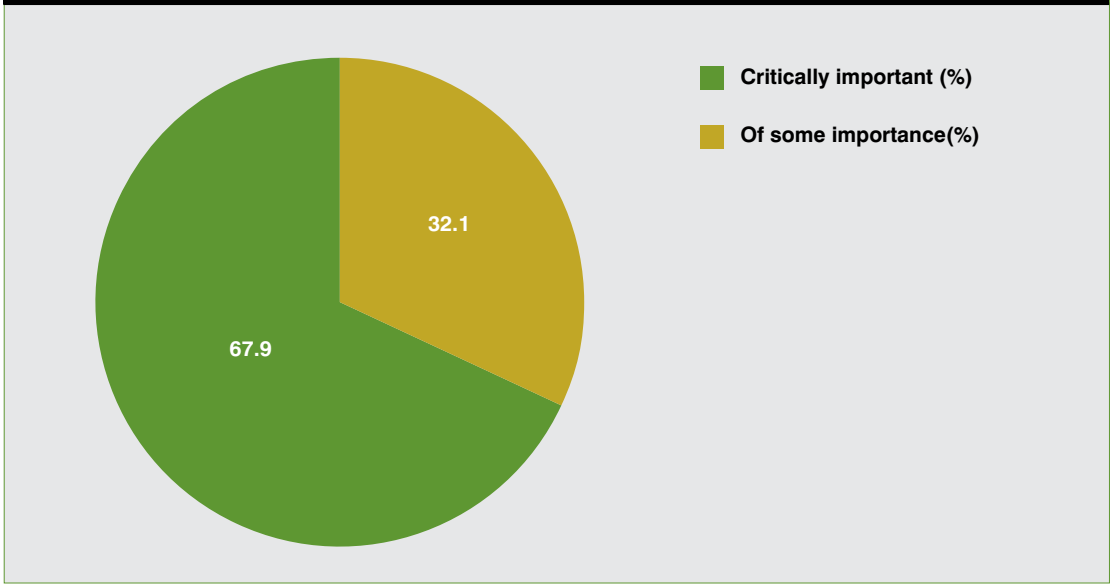


Table 19: Areas where Innovation Platforms are of Most Benefit to Farmer Groups

		Location		Organisation type		
	All	Kenya	Elsewhere	Government and international	NGOs	Research
Agricultural extension advice and training	72.6	77.3	67.5	77.8	61.1	81.0
Local infrastructure	69.8	72.0	67.5	55.6	83.3	66.7
Market and product choice advice	65.1	76.5	52.5	66.7	83.3	57.1
Access to and procurement of inputs	55.5	67.4	42.5	55.6	38.9	57.1
Market information	48.4	44.7	52.5	33.3	50.0	57.1
Improved communication along the value chain	41.7	36.4	47.5	33.3	38.9	52.4
Finance and budgeting advice	34.5	27.3	42.5	22.2	50.0	38.1
Certification and accreditation for food safety	34.5	40.9	27.5	55.6	16.7	33.3
Networking with other farmer groups	29.4	22.0	37.5	33.3	27.8	28.6
Natural resource management	22.2	12.9	32.5	33.3	27.8	9.5
Pest and disease management	17.9	22.7	12.5	33.3	27.8	0.0

Note : Ranked as the most important by the percentage of all respondents.

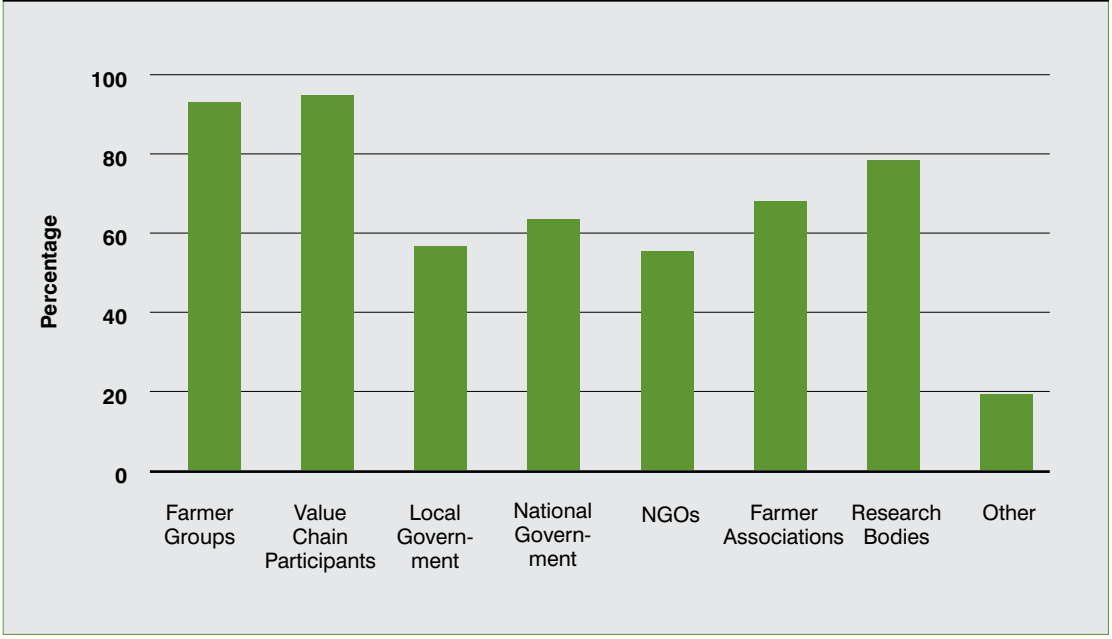
It is evident from examination of Table 19 that every factor included received significant support from respondents attesting to its importance. For the overall group the top five areas where IPs could assist smallholder farmer-groups, in terms of their frequency of nomination, were agricultural extension advice and training; local infrastructure for collection, storage and handling; advice concerning market identification and product choice; access to and procurement of inputs; and market information. While this pattern also featured in the responses from the location and organisation subgroups, there were a few variations. First, improved communication along the value chain is only just outside the top five and is seen by the respondents from outside Kenya and the researchers group as quite an important area. Second, while certification and accreditation for food safety is not identified in the overall results as being as important as many other areas, it is ranked in the top five by the government and international agency group. This result perhaps reflects the increasing attention given to food safety by government agencies and their sense of the future importance it will play in smallholder market participation. In a similar vein the NGO group attached greater importance to finance and budgeting as an area where IPs could assist than did their counterparts from other organisational types and the overall group. About half of the NGO respondents included finance and budgeting in the top five group and may have done so because it is an area where they could directly assist.

Overall, the results reported in Table 19 lend strong support for the assistance that IPs can bring to farmer-groups in a diverse range of areas important for market participation.

There are many possibilities when it comes to the potential members of an IP. Beside farmer group representation, there is a range of upstream suppliers of materials, animal or plant inputs, finance and services, as well as downstream interests such as transporters and early-stage processing (including, grading, drying, cleaning and packing), as well as those involved with additional value-adding functions such as food processing, distribution, trading, marketing and retailing. Others may be those responsible for food safety and other regulatory activities or perhaps drawn from infrastructure or research interests. Some participants in the value chain will be local, possibly from district villages, while others may be more distant, from regional towns or urban centres. In today's world of powerful communications technology, many of those active in the food chain do so round the clock and maintain their business interest on a very broad geographical scale; however, they can be constrained by transaction costs driven by supplier remoteness as well as product delivery costs to the market.

Notwithstanding the complexity and diversity of potential IP interest, respondents were asked which of eight choices they would include on an IP. The results are shown in Figure 15.

Figure 15: Organisations Suitable for Inclusion on Innovation Platforms (per cent)



It appears that respondents are indicating that the foundation members of an IP will be the farmer-groups and value-chain participants, but scope exists beyond these members to include any of the other options. All choices received significant support, with in excess of three-quarters of respondents seeing research bodies as members and more than half providing support for the other choices as well. One respondent's comment captured what many others may have been thinking, with the observation, '*I have chosen all of the above because I believe they should all play a role at any one time where necessary in order to get a dynamic knowledge hub that moves the farmers from subsistence to income earners*'.

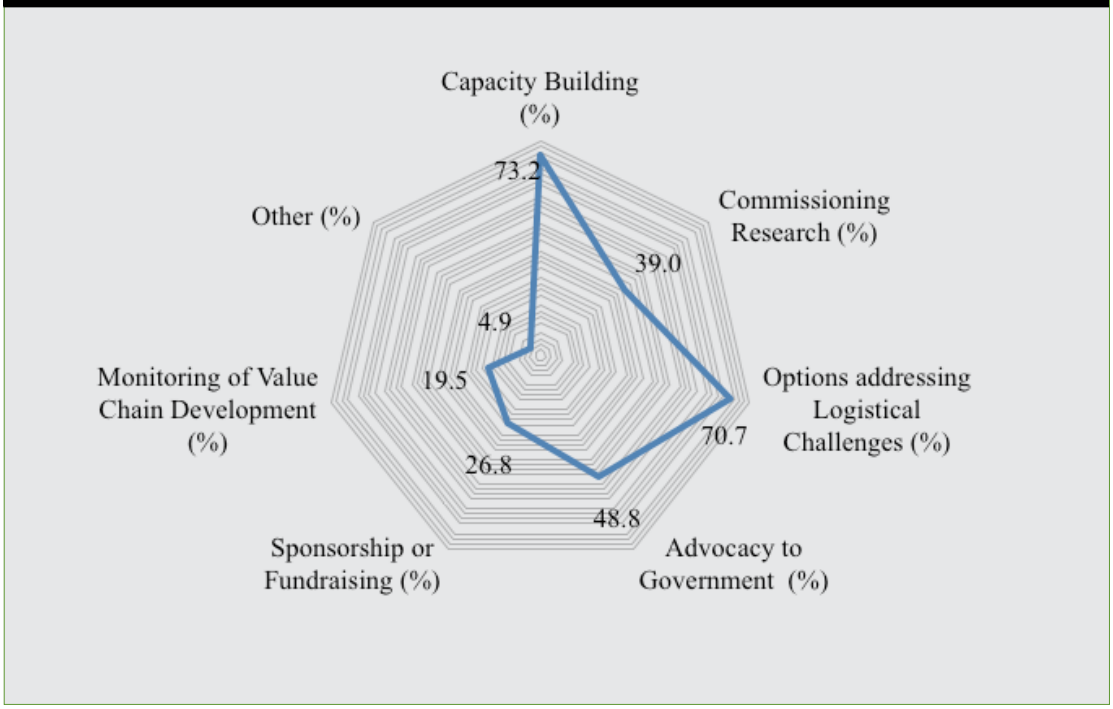
When respondents were asked in which areas IP support might yield benefits for Kenyan smallholders as well as value-chain participants, they were able to nominate up to three areas (from a list of seven) that they thought most important. Overall, their responses indicated strategies to assist capacity building of smallholders and their relationships with other value-chain participants, options for overcoming key logistical challenges facing smallholders, and advocacy to government concerning smallholder-related issues affecting the value chain (e.g. the competitive environment and land tenure) as the three most frequently cited. The full results for this question are provided in Figure 16.

The other options also received strong support, particularly 'commissioning research on key issues facing smallholders and the value chain', which attracted interest from 39 per cent of respondents, including 50, 44 and 38 per cent, respectively, of the government and international agency, NGO, and research organisational subgroup respondents.

10.2.6 Organisation of Innovation Platforms

The diversity of potential interests in IPs and their geographical dispersion can make it difficult to deal with the logistical demands of an IP. While not everything worthy of discussion will require face-to-face meetings, there will often be a need for such arrangements given the breadth of issues likely to be brought forward. Perhaps more important still is the desirability of having representation from those actually dealing with the issues rather than well-intentioned people not responsible for the problem and who would need to pass on any issues to another agency or commercial interest. However, the reality is that what is feasible will most likely prevail, and this may involve all kinds of trade-offs and frustrations, but may be far superior to having no IP platform to work with at all.

Figure 16: Innovation Platform Activities Benefiting the Value Chain



Respondents were asked in the questionnaire what they thought was the appropriate geographical scale for IPs to be effective in assisting Kenyan smallholders. By far the most popular choices were county/district or subcounty/subdistrict representation. These options received 62.5 and 75 per cent support, respectively, from respondents. The results are presented in Figure 17. These results are not surprising given the trend towards devolution of decision-making in Kenya in recent times.

Significant support was also expressed for a national-oriented IP. Again, such support could be expected in light of the economy-wide relevance of many issues and the national relevance of any related discussions.

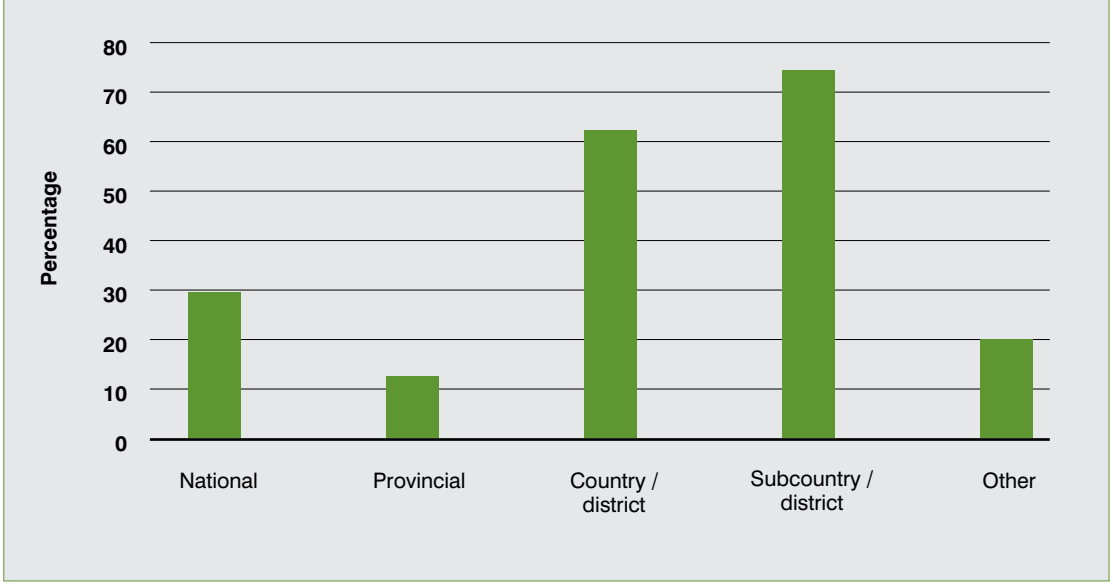
Probably the most important message from asking this question is that representation on and organisation of IPs needs to reflect the business of the IP. Hence, it is likely that some membership (e.g. farmer-groups) will be local- or district-based while others may be drawn from the county or subcounty levels; also, depending on the issue, national involvement may occasionally be needed to progress the issues at hand. Similar thoughts were on the mind of one respondent who commented, '*More localised engagement is important, but needs to be complemented with a bigger picture as well. Given devolution, county engagement will be increasingly important*'.

One possibility for making early progress with IP establishment and activity might be to leverage the number and distribution of IPs around existing centres of research and administration such as KARI, county governments and offices of the Ministry of Agriculture. This suggestion was put to respondents and drew some very diverse reactions. Support for the idea (59.5 per cent of respondents) exceeded opposition (40.5 per cent), particularly from Kenyan respondents (71.4 per cent support) but much less so from elsewhere (43.8 per cent support). Government and international agency respondents were by far the most positive about the idea (85.7 per cent support), followed by those from industry (66.7 per cent support), NGOs (57.1 per cent support) and research organisations (50.0 per cent support).

The arguments for close alignment between IPs and centres of research and administration focus on the security of long-term IP support, strong linkages with potential donors, ready availability of underpinning knowledge for the IP, the district–county distribution and therefore relevance of the proposal for smallholder farmer-groups, familiarity with local conditions, and the monitoring and evaluation capacity of such centres. Some comments along these lines included:

> 'KARI would play a vital role in organisation of the IPs and providing knowledge and scientific support as well as being a linkage with donors who can support the IPs.'

Figure 17: Appropriate Level for Innovation Platforms (per cent)



'(The proposal will) better target (agency) efforts and localise research endeavours.'

'KARI and county government are important actors in national agriculture strategy and farmers trust projects/programmes where relevant national/public institutions have been incorporated.'

'Align with the county governments because county government has clear structures for dealing with development sectors such as agriculture.'

'Establishment of IPs will be difficult and they will have trouble being sustainable and generating their own funds.'

Those respondents opposed to the idea also brought a range of arguments for their position. Most focused on the artificiality of aligning with existing centres rather than the location-specific issues, and the risk of not attracting other value-chain partners if blindly adhering to institutionally convenient structures and networks. Some specific comments in this regard included:

'The location of IPs should not be restricted to location of centres, rather should be aligned to where the interest is.'

'The needs of IP participants will vary with their region of Kenya, so some of the specific production issues will be location specific.'

'Alignment should grow from the group.'

'They might be better located in key markets.'

'IPs should be based where they have the greatest impact … If the intention is to facilitate the formation/evolution of farmers groups and relationships within the value chain, I think the location should be assessed as part of a project design process.'

While the question put to respondents served to expose both advantages and disadvantages of a model aligning IPs with administrative and research structures, it did not provide the opportunity to combine the options into additional alternatives capable of capturing the various strengths of the responses. However, some respondents saw merit in both the affirmative and negative options provided and, while they chose one answer, they took the opportunity to comment that alignment time might be made specific or sufficiently flexible to respond to particular circumstances. Some of these comments included:

'It will depend on what the IP is for. Logistically it would make sense to be co-located, as long as those from more remote and marginalised areas also have access.'

'Not in the long term—may limit widespread take up, beyond local groups.'

'Extension staff and KARI researchers should support and backstop the process—but not manage or facilitate it. That should be done by the farmers themselves and the value chain actors.'

'These groups in the early stages would need the strong support of existing entities.'

In a similar vein respondents were asked whether they thought whether public organisations such as research centres (e.g. KARI, the International Livestock Research Institute (ILRI) and ICRAF) or county government could take the initiative in the establishment of IPs before passing responsibility to other potential members once the IP became established. Again, the respondents were polarised in their views. Sixty-one per cent answered in the affirmative, and mostly consistently so, from both Kenya and elsewhere. The only group not to conform with the overall response was the industry subgroup, two-thirds of whom expressed opposition to the idea, although there were, as mentioned earlier, only a few respondents in this subgroup.

One key reason to proceed along these lines lies in the experience these organisations have with IPs and related initiatives, and therefore the likelihood that better practices can be quickly identified and costly mistakes avoided. These sentiments were captured by one respondent who said:

'… because these organizations have already been thinking through the establishment of such IPs and can share experiences from other countries which might be useful in the establishment of the IPs.'

Others saw the role outlined as an opportunity for such centres to enhance their performance and perhaps attract the necessary resources to increase the chance of success. One comment along these lines was:

'These organizations are somewhat under pressure to show outcomes and justify their existence.'

One respondent made it clear that such centres taking up the opportunity to lead the establishment of IPs does not mean passing responsibility to them for all activities. Rather, there should be scope for others to lead simultaneously, as expressed in the following comment:

> 'Yes, they could take the initiative; however, local facilitators and extension staff should also take the initiative, perhaps through the support of research centres or county governments.'

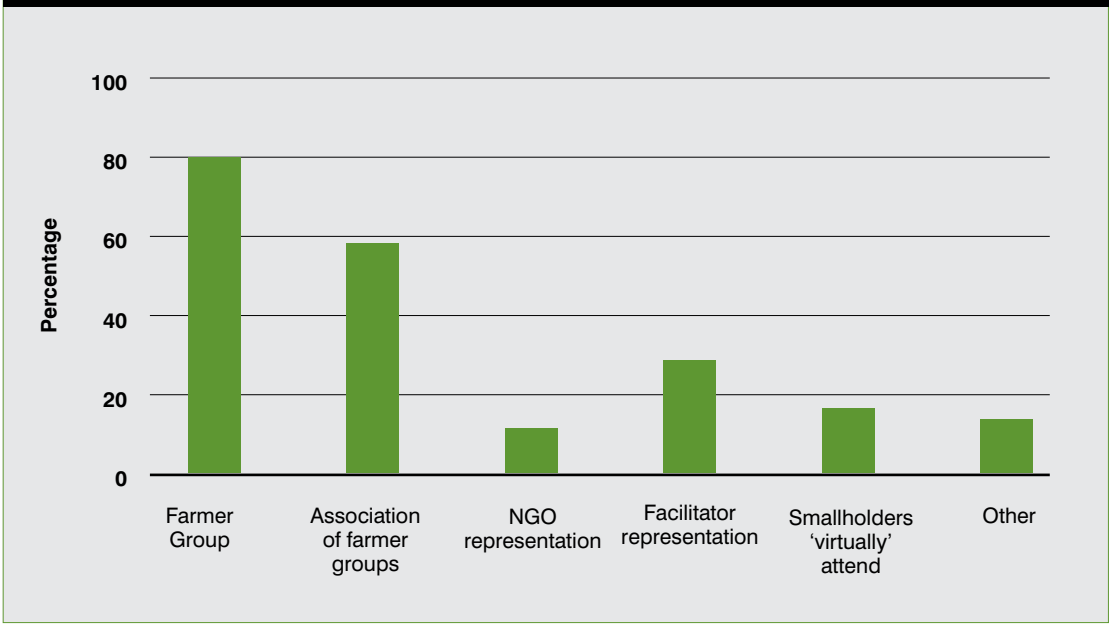
One challenge for smallholders concerning their participation in an IP is their frequently dispersed and remote locations. Often, there could be multiple farmer-groups with similar or diverse objectives, and it is simply not feasible to have an IP for every value-chain combination potentially of interest. Under these circumstances, compromises can be expected, with IPs possibly dealing with a number of value chains of varying complexity. Nevertheless, it may still be necessary for smallholders to find ways to participate in IPs when it is not feasible for all those interested to attend or become directly involved.

To address these issues, respondents were asked which of six options might be suitable for maintaining inclusiveness for smallholder participation without necessarily requiring their personal involvement, and still leaving the IP in a good position to progress its work. The results are shown in Figure 18.

By far the most popular choices were for smallholders to nominate representatives drawn from farmer-groups to participate in IPs, or for a network or association of farmer-groups to be represented. Only one other option came close to the top two choices and that was for smallholders to have a facilitator represent their interests on an IP. The latter option was particularly popular among NGO respondents, in fact more popular than NGOs representing smallholders on an IP.

Despite its popularity, the option of having representatives from farmer-groups on an IP is not without its own challenges, as pointed out by one respondent who commented that, '*Broader participation is critical and I do not fully agree that IPs can be managed through 'representatives' of farmer-groups*'. The support given for associations or networks of groups would presumably have similar challenges, although one respondent commented that, '*The notion of a network with representation to IPs and responsibility to communicate with farmer-groups has worked well in other similar situations*'.

Figure 18: Smallholder Representation on Innovation Platforms (per cent)



10.3 Summary of Questionnaire Findings

The results from this questionnaire provide insight into why farmer-groups and IPs in Kenya can assist with market participation, and thereby help to improve incomes, alleviate poverty and enhance smallholder family welfare.

Farmer-groups offer the chance to smallholders to assemble the critical mass of producers necessary for creating output volumes of interest to downstream buyers of plant and animal products, and upstream sellers of inputs and services. Farmer-groups can also strengthen the negotiating position of smallholders engaged in input and output markets where price uncertainty can be problematic and market information difficult to obtain.

Depending on which region in Kenya is of interest, farmer-groups may be suitable for marketing a range of products, but the more likely appear to be those with value-adding prospects and unit costs of production that decline with scale. In addition to direct improvement of their profitability, farmer-groups can potentially offer Kenyan smallholders the capacity to access knowledge and services, better manage their land, and engage in other activities best undertaken by a group rather than the individual smallholder. Several avenues are possible for bringing farmers together to pursue these benefits, but the respondents to the questionnaire gave most support to direct engagement of existing groups, word-of-mouth and other value-chain participants (e.g. traders, processors and retailers) engaging with smallholders.

Of the many factors affecting the successful establishment of farmer-groups, those that stood out in the results reported here were quality of group leadership, gender of potential members, governance arrangements, and early and achievable outcomes. The questionnaire also provided the opportunity to tease out what experts felt might be most important factors to help Kenyan smallholders participate in farmer-groups. Interestingly, the individual skills receiving most support were those central to how well the group worked together; that is, skills concerned with communication, strategy, leadership and financial management. The importance of successful group interaction was further highlighted when respondents were asked about the group behaviours important for generating outcomes.

The three most popular responses were trust among members; capacity to network; and preparedness to share skills, knowledge and expertise.

Farmer-groups can be a convenient and productive forum for building the capacity of smallholders to pursue their goals and objectives. Just how such training, instruction, extension or teaching is provided, in terms of mixed or single-gender groups, and whether the content is the same or different for men and women, are sensitive issues that attracted diverse views across the respondents. It seems that training strategies need to be sensitive to local community preferences and cultural practices in order to achieve effective outcomes.

The availability of facilitators to assist the group to work together and overcome the inevitable array of challenges that arise also appears to be important. Respondents supported several options, but the two attracting greatest support were NGOs, CBOs, faith-based organisations or farmer associations providing facilitators; and trained government facilitators to work within and between farmer-groups. Again, the final choice would depend on particular circumstances and may involve a mix of options offered to respondents.

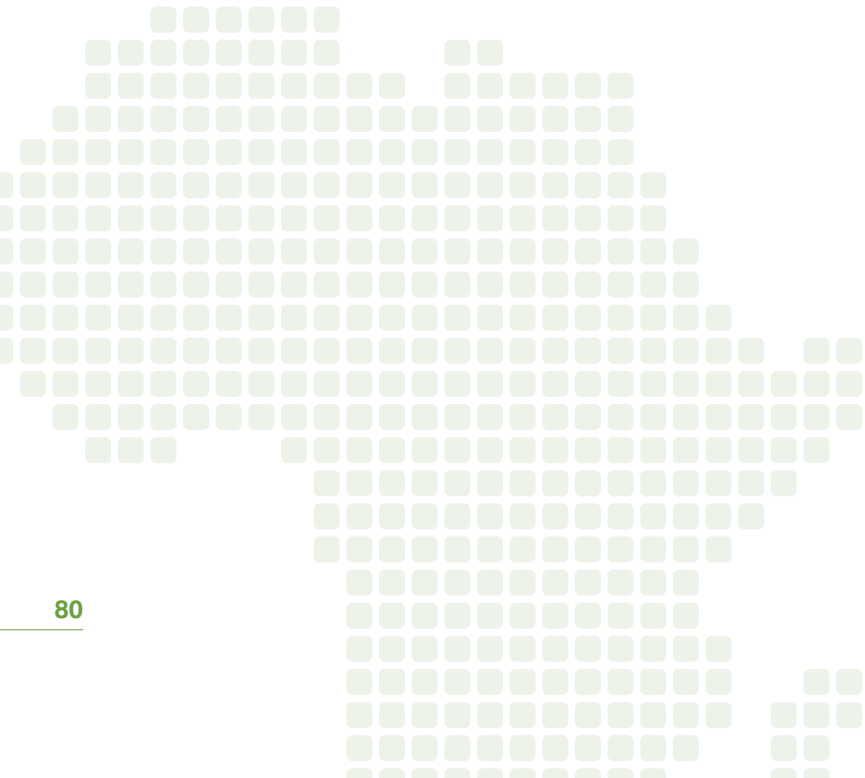
The respondents' enthusiasm for farmer-groups was exceeded only by their support for the role of IPs. Two-thirds of respondents indicated that it is critical for Kenyan smallholder farmer-groups to participate in IPs. There was significant support from respondents for all the options identifying the potential benefits of IP participation, but the most popular were access to agricultural extension advice and training, local infrastructure, market and product choice advice, procurement of inputs and market information.

Regarding the question of who should participate in IPs, respondents saw farmer-groups and relevant value-chain partners as 'foundation' members but also offered support for a range of government and non-government bodies. Three options stood out with regard to potential activities that an IP might undertake to support the mutual interests of smallholders and others on the IP. These included strategies to assist capacity building, options for overcoming logistical challenges for smallholders marketing their produce, and advocacy to government concerning smallholder-related issues affecting the value chain.

Reflecting the business interests of farmer-groups and value-chain partners, a significant majority of respondents suggested that IPs would be effective with a county/district or subcounty/subdistrict focus. Many also saw room for national involvement in order to progress specific issues.

There was a mixed response to the idea that IPs be aligned with centres of research and administration. The question prompted respondents to put forward many strengths and weaknesses for such a strategy, with the conclusion that, ultimately, it will be the attitudes and positions of IP members and agencies that will determine the attractiveness of this option. In a similar vein the questionnaire asked respondents whether the research and administration centres might help establish IPs before passing responsibility for their management to other members, once established. Again, while the majority supported the proposition, the response was mixed, making it clear that considerable sensitivity regarding member ownership of IP directions and actions can be expected.

Finally, practical questions concerned farmer-group involvement on IPs, particularly how to maintain smallholder inclusiveness when not every smallholder or farmer group can participate on an IP. Several options were put to respondents to address this problem; some form of representation from farmer-groups, or their networks and associations, may be a way forward.



11. Implementing a Farmer Group – Innovation Platform Framework in Kenya

The results of the questionnaire presented and discussed in the previous section provide many insights into how best to establish a farmer-group–IP framework capable of advancing smallholder market participation in agri-food value chains. In this section some of the most popular answers to questions provided by the questionnaire respondents are compared with previous learnings and observations made by others and discussed earlier in this study, with a view to highlighting the points attracting particular attention. Following this discussion, the focus returns to Landcare, particularly the principles that have made this initiative so successful as these are seen to contain some valuable learnings relevant to establishment of a farmer group-innovation platform framework. Some past and current initiatives in Kenya are briefly discussed for any lessons they may have for the current study.

11.1 What Look to be Particularly Important Factors in Farmer-group Establishment

In Section 7.1 Box 3 contains a list of factors that Stockbridge et al. (2003) thought relevant for a successful farmer group, although their focus was on underlying determinants of success in Malawi rather than Kenya. Their work partly informed question 6 of the questionnaire, which sought respondent views on those factors most likely to help the establishment and longer term success of farmer-groups in Kenya. Two factors seen as particularly important in both the Stockbridge et al. study and the current study are the quality of group leadership and governance structures guiding farmer-groups. Some further details in this area came from subsequent questions asked in the questionnaire, particularly the strong support for the importance of well-understood roles and responsibilities of group members, and group rules and regulations.

While gender did not feature quite so prominently in the earlier study, it was seen as central to success in the current study, particularly by Kenyan respondents, who flagged it more often than any other option put to them. This result does not seem surprising given the important, often dominant, role that rural women play in agricultural production.

The availability of a facilitator to assist farmer-groups was not suggested as a critical factor in the Stockbridge et al. study, but may have been an integral part of what the authors saw necessary for successful group participation and organisation. Certainly, experience in the Landcare arena has been that the availability of strong facilitation skills can make an enormous difference to what can be achieved, and this finding was also evident here. Nor did Stockbridge et al. refer to honesty and trust in their list of factors commonly associated with successful cooperation, although they were raised several times elsewhere in their discussion. Both factors emerge as popular choices among respondents in the current study as important determinants of group success. Stockbridge et al. mention group focus as being important, and this seems to align well with the significance of early and achievable group outcomes and clear and limited goals in the current study. The Kenyan respondents to the questionnaire used here also nominated the formal arrangements underpinning groups and the homogeneity of socioeconomic status among their more frequently mentioned factors determining success, and these results also sit comfortably with what Stockbridge et al. included in their list.

To some extent, what is important for farmer-groups is also central to the success of IPs. Group leadership and governance most likely impact on IP performance, as would honesty and trust, and focus on goals and outcomes. Gender is also likely to affect IP dynamics. However, IPs are quite different to farmer-groups in respect of their interests, and homogeneity of socioeconomic status is both unlikely and unnecessary for IP members.

Facilitators, on the other hand, or brokers as they are often termed in the IP-related literature (Heemskerk et al. 2011), play important roles in both farmer-group and IP settings as they contribute significantly—often to the point that progress is delayed or, in some situations, not possible without them.

In their work for FARA, Adekunle et al. reported on 21 IP case studies, as discussed in section 8, and identified several important challenges faced by smallholders. These concerned poor extension and underdeveloped markets as well as poorly organised farmers, and inadequate access to and high cost of inputs. All these challenges were seen by respondents to the questionnaire conducted for this study as areas where an IP could assist Kenyan smallholders. A further challenge, poor infrastructure, did not feature so highly in the list in Adekunle et al., but it was one of the popular areas nominated in the current study. It was also included towards the top of a list of factors separately identified by smallholders and other value-chain participants in the study by Henson et al., also discussed in section 8.

The work by Adekunle et al. suggests that the respective roles of public sector and NGO participants, as well as farmer-groups and value-chain members drawn from the private sector, are very important. In a similar vein all these IP players received significant support for their inclusion on an IP in the questionnaire data collected for this study. R&D is identified by Adekunle et al. as having particular significance in an IP environment. This stands to reason given the fundamental importance of research and the uptake of findings for the innovation process. While commissioning such research was not the most important IP activity identified here by respondents (it lagged behind capacity building, overcoming logistical challenges and advocacy to government), it was seen as important by 39 per cent of respondents.

In the early stages of establishing an IP there is a natural affinity between R&D organisations and the work of an IP. While R&D organisations are interested to know what research activities might be best suited to solving priority problems facing IPs, the IPs need research and general support to help find their way forward before they are positioned to act more independently. Hence, IPs can be beneficial to both the research provider and the IP customer in a partnership relationship.

Adekunle et al. refer to the changing role over time that researchers play in an IP setting. In particular, in the early days of an IP, the valuable coordination provided by a research organisation might be subsequently undertaken by a farmer organisation or local government. This transition in roles can be particularly important, as the IP retains ownership of its direction and is in control of decision-making. The sensitivity of this issue was apparent in the questionnaire results. In particular, approximately 40 per cent of respondents were concerned about IPs having their location aligned with centres of research and administration, or such organisations taking the initiative in IP establishment.

Makini et al. (2013) have described the changing roles of IP stakeholders more generally, from the initial engagement stage (Phase 1 in Figure 19) to the ongoing management and sustainability activities of an IP (Phase 3). Aside from the contribution of agricultural research and development (ARD) organisations changing from early IP leadership to backstopping, the diagram shows the roles of local stakeholders and the private sector both growing from initial interest to overall ownership, support, and seeking and realising emerging commercial opportunities.

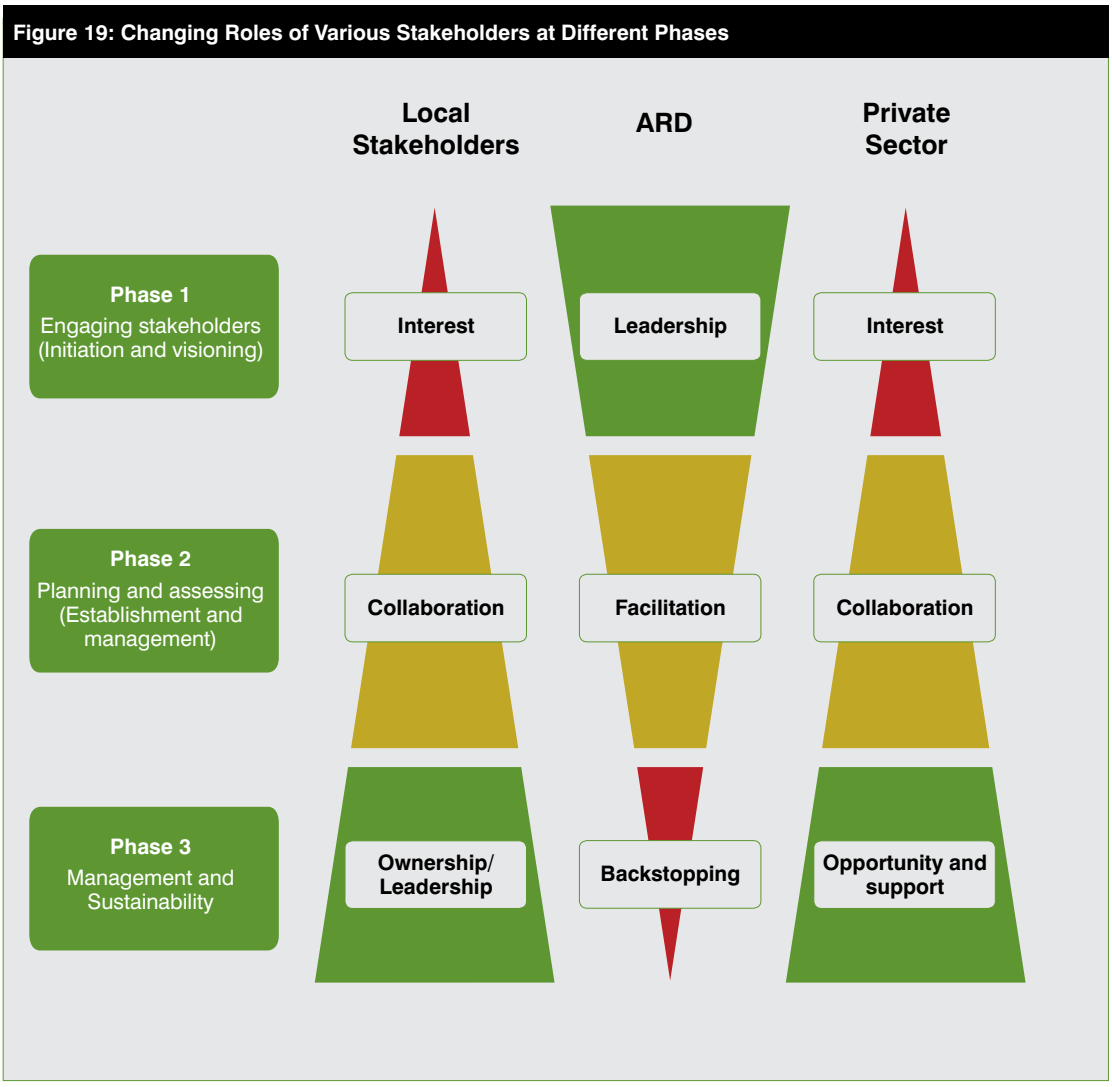
Makini et al. (2013) also distinguish between national-, regional- and local-level IPs, arguing that, while the local IP seeks operational and practical solutions to local problems, the regional and national IPs are more strategically focused on policy and more-generic issues with widespread relevance. Consequently, IP membership tends to vary depending on the issues under consideration, but important relationships need to be built and maintained between the different levels of IPs. These views are consistent with the results obtained in the current study, in that a strong theme to emerge from the questionnaire responses was that representation from virtually any source is appropriate in order to deal with the issues at hand. While county and subcounty IPs were the most popular, there was significant support for nationally oriented IPs. Sometimes, it may be possible to bring all relevant stakeholders together in a single IP setting, but more often it will be practical to have separate but related national, regional and local IP focus to deal with a diverse agenda.

The importance of high-quality facilitation for farmer group success was very clear in the questionnaire results. Makini et al. are also enthusiastic about facilitation for IP sustainability and success, and attach great importance to their transparent selection and networking skills.

Two final areas addressed by Makini et al. and touched on in the questionnaire developed for this study are the management of gender issues, and monitoring and evaluation for a successful IP. In regard to gender strategy, Makini et al. emphasise the significance of rural women's access to IP assets, knowledge and finance as well as various inputs and credit. The questionnaire did not deal with such a broad range of issues affecting rural women, although it did give detailed attention to the most suitable training strategy. On this topic the current study concurs with the call by Makini et al. for gender-inclusive FFSs for empowering rural women who may otherwise be marginalised for various reasons, as touched on in section 10.2.3.

The role of IP monitoring of value-chain development was one of several issues put to questionnaire respondents as potentially benefiting Kenyan smallholders and value-chain participants in general. Twenty per cent of respondents nominated this option among the top three IP activities. Makini et al. are also positive about the significance of monitoring and evaluation programs, as they see them as fundamental for determining IP progress towards goals and objectives, and as a learning device for IP participants. Often, IPs are likely to be well positioned to undertake monitoring and evaluation programs, particularly with research centres and others more directly engaged in the value chain able to draw upon skills they use routinely in their work. The results of these programs not only service the needs of the IP but also provide the essential information that funding agencies and many other stakeholders need to assist decision-making central to IP interests.

Figure 19: Changing Roles of Various Stakeholders at Different Phases



Source: Makini et al. (2013)

11.2 Further Lessons from Past and Current Experiences

In addition to comparison of the results of the questionnaire conducted for this study with the studies canvassed above, learnings from other recent and current farmer-group and IP experiences in Africa were also sought. Three studies are of particular interest. The first is Nederlof et al. (2011), who have compiled experiences with agricultural IPs in nine countries in Africa (Benin, Ghana, Kenya, Malawi, Nigeria, Rwanda, Tanzania, Uganda and Zambia). The study draws upon case study reports also included in the publication to synthesise broader messages for those interested in assembling effective IPs. These insights, together with the detail of one case study, a mango IP in Kenya, are considered here. Second, the ACIAR-funded Sustainable Intensification of Maize–Legume Cropping Systems for Food Security in Eastern and Southern Africa (SIMLESA) program is of interest for the lessons it offers from its ongoing implementation. Third, the Kenya Agricultural Productivity Project (KAPP) and its successor, the current Kenya Agricultural Productivity and Agribusiness Project (KAPAP), are both worthy of consideration for any learnings they provide for future efforts to establish similar initiatives in Kenya and elsewhere. While much of the discussion, particularly in the first two studies, is focused on IPs, many of the insights apply to farmer-groups as much as they do to IPs. This should not be surprising given that both instances deal with diverse memberships and their interactions, as well as the application of an appropriate governance environment, at the core of effective entities.

In their compilation of IP experiences in Africa, Nederlof et al. focused on practical issues impacting on IP implementation. To this end the authors included a list of 'do's and don'ts' regarding options for agricultural IPs.

Much of what has been identified as important to respondents in this study concerning the success of farmer-groups is also included in the 'things to do' list for IPs in Nederlof et al. The quality of group leadership, dealing with tangible issues, addressing gender and the contribution of under-represented groups, and the flexibility to adapt the program over time all emerge as consistent themes.

Similarly, a transparent and participatory process, stakeholder involvement, trust and a preparedness to share, clear roles and responsibilities of members, group decision-making, a learning-environment culture, networking capacity and avoiding 'over-formalisation' (while maintaining appropriate governance) are also important messages to consider.

Among the case studies put together by Nederlof et al., a Kenya-focused mango value chain (Mwangi Gitika and Hawkins 2011) is included, not for its success but for the lessons it provides for others arising from its failure. The focus of the case study is on the activities of a working group created to assist with the '*participatory development of a value-chain intervention strategy*' that could '*contribute to higher profitability of mango production at a small-scale level*, *while at the same time availing quality and safe mangoes and mango products to Kenyan consumers at affordable prices*'.

Mango is a fruit with high potential in Kenya, but production is seasonal from November to March, with a surplus of fruit available during this period but a deficit in the off-season from May to October. There is enormous wastage of fruit, estimated at 50 per cent per year. More than 30 varieties are grown, thereby making it difficult for processors and exporters to establish a standard product. Smallholders have been somewhat reluctant to introduce new, imported varieties due to their high maintenance-related costs, and have instead opted to retain local, lower quality varieties. Unfortunately, the situation has also been made complex due to widespread mistrust along the value chain, especially in regard to the relationships between smallholders and banks, input dealers and advisory services.

Against this background a Private Sector Development in Agriculture Program initiative resulted in the formation in 2007 of a national platform known as the National Mango Value Chain Development Working Committee. However, despite the group's intention to solve the problems with interaction along the chain, it failed. Mwangi Gitika and Hawkins (2011) put this down to several factors including members failing to be legitimate representatives of their stakeholders; ineffective facilitation and the chairperson failing to have member 'convening power'; an agenda that was challenging and worthwhile but not clear as to where it should start; failure to link what was a national committee with operational

local-level platforms; reluctance by farmers to cooperate with one another for marketing, input acquisition or other purposes due to the absence of trust and gender misalignment between those often responsible for production and sales (women) and decision-making (men); and difficulties in cooperation between processors and wholesalers. Whether or not these problems can be resolved remains to be seen, but the variety of problems encountered point to the need for careful attention to a range of issues at the earliest possible point in the development of farmer-groups, IPs and other interactive mechanisms that are reliant upon unity of purpose and long-term commitment.

Elsewhere in the Nederlof et al. volume, Gildemacher, Oruku and Kamau-Mbuthia (2011) reflect on the impact and sustainability of IPs. In addition to outliving their usefulness, the authors suggest a variety of reasons for IPs ceasing to function. Most are familiar as they have been referred to earlier in some form or other, but they are worth mentioning to assist in painting a clear picture of issues that, if not carefully managed, are capable of halting IP progress. Their list includes:

- lack of an organisation or individual willing to put in the coordination/brokering effort required to keep getting people to contribute and change with changing needs
- a change in material or other (e.g. training) incentives for participants to contribute (e.g. a shift in travel reimbursement or per diem payment)
- lack of active facilitation or recognition of leadership (as was the case for the mango value chain in Kenya), leading to a loss of confidence in results by participants
- a shift in the balance of power in the platform, resulting in a single party highjacking the agenda
- lack of recognition of the importance of the IP
- lack of representation of key groups, or perceived legitimacy of representatives by the interest group they are supposed to represent, leading to apathy
- lack of sufficient organisation, either at the local level where activities lead to practical results, or the national level to ensure organisational support for activities
- risk of IPs turning into a 'talkshop'; that is, meeting for the sake of meeting.

Just as importantly, Gildemacher et al. (2011) touch on outcomes from IPs, although arguably most of what they identify is equally applicable to farmer-groups. Their discussion canvasses:

- identification of new opportunities for change
- improved articulation of needs
- more business deals
- conflict resolution
- problem solving
- policy advocacy
- improved organisation of stakeholder groups
- improved services (e.g. research, advisory)
- improved production and management practices
- risk reduction
- improved food security and livelihoods.

These are basically generic descriptors of more-specific outcomes included in the respondent questionnaire results discussed in section 10. Examination of Tables 12, 13 and 19 and Figure 16 in particular identifies many farmer-group/IP benefits that fit under these generic headings.

A further initiative of interest for its focus on farmer-groups and IPs is the ACIAR-funded SIMLESA project. Phase 1 commenced in 2010 and is scheduled to finish in June 2014, pending the approval of a second phase. The project is directed towards addressing food security in the eastern and southern Africa region, with activities aimed at increasing farm-level food security, productivity and resilience through the development of profitable and sustainable farming systems (ACIAR 2009). More specifically, the main focus is on five African countries—Ethiopia, Kenya, Malawi, Mozambique and Tanzania—with spillovers to other countries in the region such as Uganda, Rwanda and Botswana.

The International Maize and Wheat Improvement Centre (CIMMYT) was commissioned to manage the $A20 million program, which seeks to improve maize and legume productivity by 30 per cent and reduce expected downside risk in yield by 30 per cent on approximately 500 000 farms within 10 years. Since the commencement of SIMLESA, the program has been extended to reach 650 000 farmers by 2020, and an additional $A2 million has been added to the budget to help meet this goal (Edmeades, Shumba, Wandschneider and Dixon 2012).

In the usual ACIAR partnership model, the national agricultural systems in Ethiopia, Kenya, Malawi, Mozambique and Tanzania are leading partners in SIMLESA, supported by the International Center for Research in the Semi-Arid Tropics (ICRISAT), the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the Queensland Alliance for Agriculture and Food Innovation – University of Queensland (QAAFI-UQ), Murdoch University and the Agricultural Research Council (ARC).

SIMLESA has adopted a multidisciplinary and innovation systems approach to R&D, and its uptake involves all stakeholders and takes advantage of the stock of knowledge and comparative advantage of all involved (CIMMYT 2012). Importantly, this includes farmer and any other interest in the agricultural value chain that can add to the common interest of the wider stakeholder focus. In practice, ACIAR (2009, p. 14) and partner organisations have seen this '… incorporating all of the necessary players to facilitate the development of more productive, sustainable maize–legume systems and thereby increase food and income security among a significant sized population group'. The use of IPs stands in stark contrast to the more traditional but still widely used linear model of knowledge flow where technologies developed from research are passed on to farmers through extension services.

While a final report for the first stage of SIMLESA is yet to be published, there are many positive references to achievements to date (e.g. ACIAR and CIMMYT 2013). Derek Byerlee, Co-Chair of the Program Steering Committee, commented in 2013 that 'SIMLESA had attained a "steady flight path" and is on track to deliver significant impacts'.

In a similar vein Bekele Shiferaw, Program Management Committee Chair, commented that 'The Mid Term Review Team has reviewed progress by objectives and the overall execution of the Program, and finds that in general it has made very good progress in its first two years'.

Notwithstanding the overall level of reported progress, the SIMLESA Mid Term Review team (Edmeades et al. 2012) reflected on various aspects of the first phase of the initiative and concluded that there were areas where a revised approach may be necessary. In the IP area a range of lessons had emerged from experiences until early 2012. In particular, the reviewers concluded that adoption of a knowledge-intensive farming system with specific input requirements is unlikely to occur in the absence of functional IPs. This conclusion stemmed from the significance of IPs in adaptation and validation of technologies, knowledge dissemination and technology uptake.

The review therefore found that strategies and concrete steps to strengthen the role of local IPs were needed. They called for increased private sector involvement but suggested that, for this to happen, engagement at a senior level with strategic actors outside the local IPs may be required. They particularly emphasised the importance of leadership, arguing for 'inspired leadership at the program, national and individual IP levels', involving people skills, flexibility, salesmanship, innovation, enthusiasm, communication skills and an ability to think outside the box. Also, they saw a need for action regarding regular IP meetings; the involvement of socioeconomists in the design, conduct and evolution of IPs; careful management of gender roles in an IP; looking carefully at the 'institutional landscape' to scan for local leadership; the presence of business activity and the existence of farmer-groups and capacity development among network partners; and policy interventions addressing special needs in telecommunication and infrastructure as IPs evolve. Finally, the reviewers underlined the significance of having IPs with clear roles, structures and functions. Following these recommendations, the program acted to improve IP functionality, including extensive training of program staff and the appointment of two internationally recruited CIMMYT IP specialists in the region to work with SIMLESA.

Further insights into SIMLESA experiences in western Kenya were documented in an ACIAR and CIMMYT (2013) report. In particular, the establishment of IPs in Bungoma and Siaya counties to spur adoption of technologies in place on demonstration farms was outlined. These initiatives were implemented after it became evident that uptake by smallholders and scaling out was unsatisfactorily slow, and the level of participation by stakeholder groups was low.

By establishing IPs the various stakeholders (farmers, input suppliers, output handling and market support agents, finance institutions, research institutions and policy makers) would enhance collaboration, cooperation, networking and sharing of knowledge in order to achieve increased technology adoption on a wider scale. It was envisaged that SIMLESA and KARI would take the lead role by facilitating and coordinating the IPs, with a view to withdrawing once action plans had been established. This seemed to be a sensible approach given the responses elicited in the questionnaire used in this study, particularly in regard to canvassing the idea of research centres taking the initiative in establishing IPs before passing responsibility to other members.

Advice from already established IPs in Bungoma county described several challenges for new IPs in their initial stages. The points made are familiar, raising recurring themes reported in other case studies and identifying issues that feature in the questionnaire results. They include 'conflicts due to poor leadership policies and structures; poor distribution of roles within an IP; low membership; lack of stake in the IP; non-replacement of those who leave; non-sourcing of funds to run the IP; staff turnover; different ideologies; knowledge and interest in terms of data collection and dissemination; report preparation and managing finances; delays in implementation of activities; and unwillingness to share information'.

The final initiative worthy of comment for its relevance to the current study is KAPP, which was initiated in 2004 by the World Bank in conjunction with the Government of Kenya following the launch of the government's *Strategy for Revitalizing Agriculture* (SRA). The aim of the SRA was to 'provide a policy and institutional environment that is conducive to increasing agricultural productivity, promoting investments, and encouraging private sector involvement in agricultural enterprises and agribusiness' (World Bank 2009).

KAPP contained four major elements that together received funding of approximately $US79 million during the period 2004–08. These included (i) facilitation of policy and institutional reforms, where the objective was to support establishment of the institutional framework to improve coordination structures within government, and establish consultative forums that would create more-integrated systems of research, extension and farmer empowerment; (ii) support to extension system reform, the objectives of which were to facilitate a consultative process that would build on the National Agricultural Extension Policy (NAEP) and help establish a new extension policy and its implementation framework; (iii) support to research system reform, which provided for facilitation of a consultative process for the establishment of a national agricultural research system (NARS) and support to KARI; and (iv) support for farmer empowerment, which focused on building the capacity of farmer organisations to foster farmers' capacity to mobilise resources and plan enterprise development through improved access to information on technology and services, scale-up application of technology innovations and give farmers greater influence over the provision of extension and research services.

A full assessment of KAPP is provided in World Bank (2009). Certainly, from the World Bank's perspective, the initiative was seen as a success in overall terms in that farmer empowerment and capacity building benefited the rural poor and the development of farmer-driven agricultural systems. The project was implemented in 20 counties. Of particular interest to this study is the community-driven approach to development, where smallholders identified problems of concern and, with the help of service providers, came up with possible solutions (KAPP 2011).

KAPP emphasised 'farming as a business' as the underlying approach to the program, with a clear expectation that farmers would purchase the necessary inputs. KAPP, for its part, contributed service provision for skills and knowledge acquisition as well as the resources for demonstration projects. Smallholders formed common interest groups (CIGs), with the common bond of members being their interest in making money from investment in a specific enterprise. In the CIG, members planned for necessary extension interventions with the help of the service provider, who played a facilitation role.

Some 1 350 CIGs were formed during the first phase of KAPP and around 200 000 community members benefited from their activities. The project generated the development of two cycles of enterprise development plans (EDPs) in 80 divisions (4 per county) where it was introduced. The first cycle had 1 115 EDPs, and 112 728 farmers directly benefited. The second cycle, which was still under implementation when the project closed, had 1 256 EDPs with 100 209 farmers involved. These EDPs covered fish farming, vegetables, intensive dairy and snow peas, and focused on the use of new activities that were more productive in terms of yields.

Around 90 CIGs received further funding for technology up-scaling on the basis of their production being sufficient to support value addition, and on proven success in their work to date. Some of these groups were livestock-based while others included bee keeping, aloe vera production, commercial groundnuts, poultry, sheep and goat marketing, rabbit meat, bakeries and maize processing. Many were able to sell their produce in supermarkets. KAPP (2011) outlines a number of 'success stories' emerging from the program.

The Kenyan Ministry of Agriculture (2009) believes that the KAPP-related reforms and technologies contributed significantly to the turnaround in agricultural performance in the mid 2000s. Confidence in the effectiveness of KAPP led to a further collaboration with the World Bank and saw the emergence in 2009 of KAPAP, which is the main program for implementing the Agricultural Sector Development Strategy (ASDS), the successor to the SRA introduced by the Kenyan Government in 2008 under Vision 2030.

KAPAP is to be implemented over the period 2010–15. It builds on the achievements of KAPP by maintaining the key elements of its predecessor but adding a new agribusiness component aimed at the development of linkages between farmers and consumers along identified value chains. Again, there is much emphasis on bottom-up sector development, including CIGs and district work plans as well as agricultural and communication systems for the dissemination and sharing of knowledge and skills, and linkages with resource centres. Grants to CIGs to support eligible projects (e.g. demand-driven farm advisory and training services), infrastructure and equipment, and purchase of inputs, in conjunction with beneficiary contributions, are a key component of the program, as is farmers' organisation empowerment at both the grassroots and apex levels.

In the new agribusiness and market development theme of the program, the focus is on five main areas:

(i) **Creation of a network of agribusiness development centres,** where the main aims are to provide value-chain appraisals, assist the development of agribusiness management and accounting skills, coordinate the creation of agro-food parks, collect market intelligence, assist with improvement of the policy and regulatory framework, and support national value-chain organisations

(ii) **Assistance in the establishment of agribusiness funding instruments and risk-management tools**, including the study of access to capital by farmer-groups, guaranteeing risk faced by financial institutions in providing credit to small-scale farmers, and assistance for the development of weather-based risk insurance products and their promotion

(iii) **Creation of four agro-food parks using public–private partnerships** to provide processing facilities, building on existing export processing zones, agricultural training centres, livestock training institutions, agribusiness centres, and other established private and public institutions including warehouses, slaughterhouses and aquaculture centres

(iv) **Agribusiness management and food technologies training enhancement**, where the purpose is to develop skills for managing agro-industries with attention to balanced gender representation

(v) **Piloting the practicability of linking agro-processing units to off-grid renewable energy sources** (e.g. mini-hydro, biomass, wind and solar).

The focus of the new agribusiness component complements other themes of KAPP's market focus, particularly the emphasis given to food production to meet consumer requirements rather than production because it is technically possible. All five elements fill important supply-side gaps in the capacity of the agribusiness sector to provide through-chain services and involve both public- and private-sector interests. Notwithstanding the importance of the program, it differs significantly from other initiatives discussed earlier in this section. There is less emphasis on the issues being addressed in an IP context, where solutions to problems and identification of opportunities of mutual interest to the value chain are addressed. Instead, the agribusiness focus in KAPAP is more concerned with service provision, including infrastructure services, credit provision, risk-related products and management capacity. It will be interesting to see how these initiatives interact with the KAPP-initiated CIGs, with their focus on farmer and group ownership and empowerment, and whether a need emerges for similar IP-oriented structures that bring together the value-chain participants and their common interests.

12. Towards a Kenyan Farmer-group–IP Model

12.1 Introduction

From the earlier sections of this report it is clear that smallholders need to adopt a creative approach to market participation to overcome their many disadvantages. It is very difficult for individual smallholders to contemplate engagement with the value chain when their level of output is very small, inputs are too expensive to purchase, and their technical understanding of agricultural systems is inadequate; when their asset base and incomes are meagre, they have little, if any, capacity to access credit. Notwithstanding these difficult circumstances, the outlook for smallholders may change significantly if they can join with others to become a more formidable group, both in terms of their market power and what they can do together that cannot be achieved as individuals. Through collective action, smallholders can influence both their terms of purchase and their terms of sale as they procure inputs and services, negotiate with traders, and become of greater interest to potential value-chain partners looking to do business on a scale with acceptable transaction costs.

While farmer-groups may be an important foundation for entry into commercial agriculture, they are only one part, albeit an important part, of the value-adding activity undertaken from the smallholder farming community to the retail outlet in a village market, or further on in an urban environment or perhaps an export market. There is a myriad of activities preceding and succeeding farm activity, ranging from the acquisition of plants, animals, fertilisers and other physical inputs to the provision of advisory or other services (e.g. finance, electricity, water and transport), and the grading, processing and finally retailing of produce prior to final consumption. Other inputs may also be necessary to overcome problems and address opportunities in the value chain, including research, marketing and promotion, insurance and storage. All such activities have a role to play and add value to the final retail price, and ultimately impact on the competitiveness of the smallholder's business enterprise.

Given the nature of the value chains that smallholders choose to participate in, they must interact with their value-chain partners, as in many respects they are dependent on one another for their viability and decision-making. It is this need for through-chain communication and action concerning mutual interests that underlies the role of IPs. They are not there as a convenience to provide opportunities for the actors to get together, but have a commercial raison d'être focused on what they can do together to enhance their individual and collective competitiveness.

While the prima facie case for farmer-groups and IPs is strong, much effort is required for their establishment and success. It is clear from the experiences that others have documented that forming, motivating, governing, financing, supporting and monitoring the progress of both farmer-groups and IPs is complex and requires careful study and attention in order to maximise the chance of success. For a variety of reasons there are significant risks of failure, with the additional burden that poor results can jeopardise the prospects for future initiatives as those involved often become risk averse and frustrated. Hence, the significance of learning lessons and adopting, where appropriate, the successful practices of others.

12.2 Adopting Landcare Principles

It is against this background that the Landcare model has shown itself to be potentially useful. At one level, Landcare has been successful internationally, as outlined in section 9, due to the enduring solutions it brings to a diversity of NRM challenges. However, it is the underlying principles behind Landcare that are responsible for its success, offering guidance for the implementation of farmer-groups and IPs. These were addressed, in part, in section 9, although one aspect not covered and having particular relevance to progressing group-based activity in Kenya and elsewhere in East Africa is the South African enunciation of the six indivisible principles of LandCare. These have been documented by Bosoga et al. (2009) and are reproduced in Box 4.

Box 4: The Six Indivisible LandCare Principles

1. *Integrated sustainable natural resource management* embedded within a holistic policy and strategic framework where the primary causes of natural resource decline are recognised and addressed
2. *Fostering group or community-based and -led sustainable natural resource management* within a participatory framework, including all land users both rural and urban, so that they take ownership of the process and outcomes
3. *Developing sustainable livelihoods* for individuals, groups and communities utilising empowerment strategies
4. Government, community and individual *capacity building* through training, education and support mechanisms
5. Developing active and true *partnerships* between governments, LandCare groups and communities, NGOs and industry
6. Blending appropriate upper-level *policy processes* with bottom-up feedback mechanisms. These mechanisms should utilise effective LandCare institutional frameworks to give voice to LandCare program beneficiaries and supporting participants.

The attraction for this study of the principles in Box 4 lies in their relevance to establishment of farmer-groups and IPs focused on value-chain enterprise development. An integrated approach within a broader framework and addressing primary factors at play applies as much to groups and partners addressing market participation as it does to NRM. Just as it would be unhelpful to look at soil erosion in isolation from vegetative cover and water management, so too would it be poor strategy to address agricultural production in the absence of market demand and returns. A community-focused NRM initiative with emphasis on participation applies equally to the work of an enterprise-focused farmer group or IP; and, in both settings, ownership and empowerment are essential to realising outcomes that deliver sustainable livelihoods. Just as most NRM activities require skills, knowledge and expertise acquired through purposeful capacity building of community members, enterprise development demands similar attributes for the groups and partners involved, in order to achieve viability and sustainability of their venture and avoid long-term dependency on external project assistance.

Similar capacity building is also needed in both the NRM and business enterprise development arenas with respect to research to assist groups to overcome obstacles and open up new pathways for consideration. Partnerships have proven essential to advancing NRM because Landcare groups have benefited significantly from government grant-making and the support provided by NGOs and industry. Similar benefits can be expected from public and private partnerships developed between farmer-groups and IPs addressing the value chain. Finally, the provision for 'grassroots' input from the community in conjunction with the policy process as it is conducted by government and its institutions applies to enterprise and value-chain development in a similar manner to how it assists NRM. It means that those affected by decision-making can express what they believe will work best, and there is synergy and complementarity between what is happening at the various levels of policy and decision-making and 'on the ground', 'in the workplace' or 'along the chain'.

12.3 The Significance of Social Capital

Underlying much of what makes Landcare successful is the significance of social capital—that is, as Coleman (1988) put it, the capital held by communities, in contrast to human capital, which is an individual attribute. An extensive literature on social capital began in the 1980s and continues as a topic of examination by academic as well as policy-focused institutions such as the Productivity Commission (2003). Fukuyama (2000) has identified social networks, norms and trust as characteristics giving social capital productive potential, and this point has also been noted by the World Bank (2014b) in the following definition:

> '*Social capital refers to the norms and networks that enable collective action. It encompasses institutions, relationships, and customs that shape the quality and quantity of a society's social interactions. Increasing evidence shows that social capital is critical for societies to prosper economically and for development to be sustainable. Social capital, when enhanced in a positive manner, can improve project effectiveness and sustainability by building the community's capacity to work together to address their common needs, fostering greater inclusion and cohesion, and increasing transparency and accountability.*'

Prior (2012) has discussed the significance of social capital for sustainable land management, particularly the contribution to enhanced community participation, internal and external communication, community decision-making, consensus building and conflict resolution. Prior suggested that, from the viewpoint of government, NGOs or industry, communities with less social capital are more unlikely to be effective in participation, innovation and conflict resolution. The key factors responsible for these outcomes are the level of community trust, the potential to mobilise resources, learning opportunities and the capacity to change behaviour and attitudes.

Notwithstanding the many positive outcomes that social capital can potentially generate, it can also have negative impacts. Like their positively influencing counterparts, negative influences stem from the role and dynamics of group behaviour, particularly the challenge of achieving group acceptance of ideas and the difficulty of reaching agreement on innovative thinking, with its related risks. Some may go so far as to suggest that 'groupthink' stifles individual flair and adventure, and that because of the requirement for a group to agree before it can further proceed, it is unable to identify and realise opportunities more widely available to competitors outside the group environment.

Despite the limitations constraining the contribution of social capital, it seems likely that they are not sufficiently important to erode the utility of groups of smallholder farmers. In the sustainable land management context, it is often the case that land, water and vegetation management cannot be tackled other than in a group, because the problems of concern and opportunities of interest are defined by the landscape rather than limited to very small areas of land occupied by smallholders. For different reasons the importance of farmer-groups and IPs for rural development is also supported by compelling arguments, especially the market power that groups can exert compared with individual smallholders. It is against this background that so many commentators have referred to the importance of farmer-groups.

The World Bank (2014b) has put into practise the concept of social capital by breaking it down into five dimensions included in their Social Capital Implementation Framework. The first dimension, groups and networks, refers to the organisation of people and mobilisation of resources to address problems of common interest. In the context of smallholder market participation and the value chain, earlier sections of this report have already identified the fundamental importance of farmer-groups and IP networks to emerging smallholders seeking to develop commercial enterprises. The scale, negotiating power, access, capacity building and commercial-relationship advantages that groups and IPs confer make this aspect of social capital central to the smallholder journey towards market participation.

The second dimension, trust and solidarity, gives group or IP members the confidence to work with one another and agree or disagree on alternative options, and then move on together to the next steps of enterprise development. In some respects this is the forerunner of the third dimension, collective action and cooperation, which is the basis underlying most group activities, whether they be cleaning, grading, packing or processing fruits and vegetables; determining the rules governing accountability and responsibility; advocacy to policy makers for necessary infrastructure; or building skills to enhance group expertise.

Often, groups and IP members will consist of heterogeneous members with respect to income, assets, education levels, and other social and economic characteristics. Such diversity can sometimes generate conflict; hence, the fourth dimension, social cohesion and inclusion, is important with regard to risk mitigation through its positive impact on access of the more-marginal members to the benefits of development and participation.

Much of what the World Bank has identified as the elements of social capital depend on the availability of information and communication, and this forms the fifth dimension, the foundation of social interaction. Farmer-groups and IPs cannot progress without the free flow of information, as it underlies knowledge building and exchange of ideas central to enterprise development. Its absence is a fertile breeding ground for secrecy, followed by suspicion, mistrust and, ultimately, the collapse of farmer-groups, IPs and possibly their associated enterprises.

12.4 A Possible Model Structure

Recognising that social capital is key to advancing smallholder market participation via farmer-groups and IPs, a central issue is to outline the broad structure regarding how these entities might relate to one another, including their internal and external linkages. Such a model is presented in Figure 20. It draws and relies on the overall analysis and evidence presented earlier in this report, particularly the economic advantages to be derived from farmer-groups and IPs, the expert advice and input provided in response to the Kenyan-focused questionnaire circulated to respondents from Africa and elsewhere, and the experiences to date of several initiatives recently concluded or currently underway that provide important information concerning the more productive (and unproductive) paths to be followed.

The design of the model proposed begins with the farmer group. Following the discussion surrounding Figure 13, there is no set format concerning how to form farmer-groups. Certainly, there are advantages in using existing cultural and community groups; however, these may not always suit the enterprise development objectives in mind, and may need to be complemented with other strategies also discussed earlier. Whatever final form they take, farmer-groups with common interests in enterprise development and market participation are a core unit of the broader design.

While farmer-groups build critical mass among smallholders and serve many purposes, they will often not be of sufficient scale, by themselves, to engage others (e.g. input suppliers or downstream participants such as processors or retailers) in the value chain. Often, greater scale may be necessary and a formal or informal association of farmer-groups may be appropriate. Examples of situations necessitating this approach include having sufficient fruit to attract interest from a processor or retailer, accessing feasible transport options and making representations to county government to assist with training needs.

Whether it is individual farmer-groups or associations of groups, there is a critical need for forward and backward network linkages along the value chain, beginning with input suppliers and service providers connecting with smallholders, and leading to others involved with value adding in grading, cleaning, transport, storage, trading, processing, packaging, marketing and retailing. This is the IP, where the value-chain participants come together to identify and solve problems and address opportunities of common interest. Importantly, the IP conceptualised here is not so much a mechanism for transacting business as it is for facilitating business and solving problems by involving, where necessary, representatives from the various value-chain segments. Emphasis is given to ‘where necessary’, so as to make it clear that the IP is not a venue for a ‘talkfest’ with little purpose and direction. Rather, it is a flexible membership forum that provides opportunities for whoever needs to deal with issues to do so with the wider support and knowledge of others who may be affected. Sometimes, this may require active participation from the entire chain—if, for example, the issue requiring attention is brand preservation, where nothing done in transforming, moving or handling the product can be allowed to compromise the essential consumer attributes of the retail presentation.

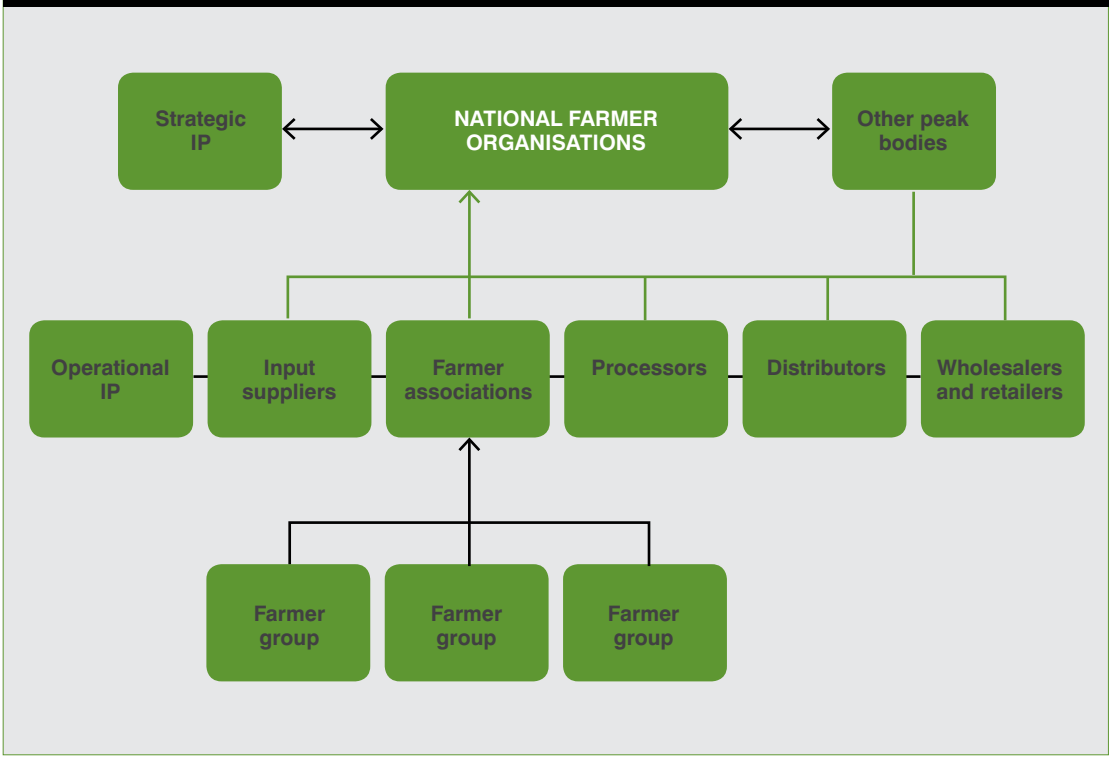
Freshness, safety, origin and presentation are several consumer characteristics that might need to be preserved along the chain for some enterprises, although this may not be the case in other instances.

Earlier discussion made the distinction between operational and strategic IPs. Operational IPs are more focused on value-chain interests in the local environment, extending to regional or urban centres involved with the day-to-day product development through to its point of sale. Strategic IPs, on the other hand, engage value-chain interests at a higher level, where strategic issues having broader relevance might be addressed and resolved. Typically, operational IPs would bring together those physically involved in the particular value chain for the enterprise of interest, while a strategic IP is more likely to include senior management from the value-chain segments to deal with issues or solve problems with wider application.

By way of example, an operational IP for mangoes could involve representatives from local or regional nurseries, fertiliser and spray suppliers, possibly an irrigation supplier, a packaging provider, a transport company, the regional processor and a buyer's representative from the main market outlet. The strategic IP, while still focused on issues of common interest, may not even have a particular product interest but be concentrated on fruits and vegetables more generally, and hence might include representatives concerned with policy issues surrounding production, distribution, transport and logistics, infrastructure, food safety, accreditation and biosecurity.

When the vertical and horizontal networks outlined above are put together into a single diagram, a model emerges along the lines of that described in Figure 20.

Figure 20: An Illustrative Model for Farmer Groups and Innovation Platforms



Farmer groups are supported by government agencies, research institutions, NGOs and facilitators providing coordination and demand-driven training, capacity building, communication, backstopping, monitoring and evaluation services. Operational IPs are supported by a facilitator/broker as well as county government agencies and research bodies. Strategic IPs are supported by secretariat and research bodies and have interactions with relevant public and private agencies.

Community-based groups of smallholders are denoted in Figure 20 as farmer-groups (FGs) and when they network together they are a farmer association (FA). It is possible that individual FGs could participate in an IP but it is more likely that they would do so as an FA, at the same level in Figure 20 as a range of value-chain partners that are also parts of the operational IP. The other parties (e.g. input suppliers, processors, distributors, wholesalers) could also have subsidiary interests, although this is less likely than could be expected for an FA. For this reason these links are indicated with tentative lines and stand in contrast to the connected FG–FA relationship, which is most likely a common situation.

As mentioned, the operational chain is unlikely to be responsible for dealing with more-strategic issues. These are better dealt with at the strategic-IP level. Smallholder interests at this level may be represented by a national body such as the Kenyan National Federation of Agricultural Producers (KENFAP). A similar approach would be applicable with respect to other interests. Peak bodies representing processors, retailers and other segments of the chain may be appropriate participants in a strategic IP. In Kenya, product marketing boards continue to have an ongoing role and may also be suitable for inclusion. These participants would frequently interact with relevant government agencies and institutions, such as research bodies, that are able to help progress issues of interest.

In practice, good communication between strategic and operational IPs is desirable, as both levels would be interested in one another's work. For example, any work that a strategic IP might be doing on improving infrastructure for the fruit and vegetable industry, such as R&D on storage options or the best ways to maintain temperature throughout the chain, would be of interest to operational IPs. Similarly, efforts by operational IPs to determine suitable fruit and vegetable varieties for particular urban markets may assist the work at the higher level; hence, some investment in the distribution and sharing of such information may be appropriate.

Most of the activities and relationships captured in Figure 20 will require various kinds of support, already discussed earlier in this report. Some of this support will be sufficiently important for the parties concerned to participate in the FG, FA or IP. Relevant agencies from national- or county-government sectors such as, in Kenya, the Ministry of Agriculture or the R&D community (e.g. KARI) would, for the reasons outlined in section 12.5, contribute from the early stages of this model and would justifiably have 'a place at the table', even though such initiatives are not so much about what they do as about how they can usefully serve the objectives of the value-chain participants. Also, NGOs may play a critical role supporting the overall project and stakeholder activity with a wide range of services concerning training, capacity building, communication, monitoring and evaluation of progress, and facilitation. These support activities need not be provided exclusively by NGOs; the public-sector participants and their private-sector IP colleagues may also contribute, as may the smallholder community itself in certain areas.

It is clear from Figure 20 that the proposed framework contains both vertical and horizontal relationships as well as two levels (operational and strategic) of activities. Hence, there is provision for increasing smallholder market participation using partnerships both 'on the ground' and in the market where production and commerce takes place, as well as at a higher level through peak organisations working alongside public and private agencies to improve competitiveness. Notwithstanding the broad coverage and relevance of the framework, and therefore its suitability to be taken up as a national initiative, it is very much community-focused and driven from below. But it also has ample scope for interaction between the two levels, with investments and programs initiated privately or publicly from above in response to competing demands, available resources and expected net benefits.

12.5 Implementing the Proposed Model

Most, if not all, of the elements of the model outlined in Figure 20 already exist in Kenya but, as far as this study has been able to ascertain, they do so largely in isolation from one another. The author is not aware of a fully integrated approach built using social capital and the Landcare ethic as its foundation, and featuring both FGs and IPs across the value chain as well as vertical linkages from the smallholder community level to the more strategic involvement of peak bodies. However, several initiatives, including KAPP, KAPAP, SIMLESA and others discussed in preceding sections account for major elements of the model, and have shown significant progress in their respective projects. Importantly, they seem to sit comfortably within the framework proposed here.

Taking the next steps towards implementing the proposed approach would require the government to take threshold decisions to adopt the model or some variant following wider consultation with a range of stakeholders, including smallholders, commercial partners, and a broad range of public- and private-sector and NGO interests. Details of how such action might be best undertaken are beyond the scope of this study, but would most likely follow an accepted methodology and pathway for consideration of major initiatives. Prior to doing so, it would be prudent to undertake a benefit–cost assessment of a more-detailed model based on a national or regional rollout and including: estimates of the number of FGs and IPs involved; the public and private costs associated with establishment and recurrent expenditure; and the likely benefits expected to be generated over time. Consideration could also be given to linking the suite of existing activities into the proposed model formulation, or piloting the latter in a selected area using either a 'greenfields' approach or incorporating existing activities already underway.

Whatever final form the initiative might take, it is difficult not to see the Ministry of Agriculture and KARI at the centre of project implementation from a public-sector-agency perspective. Both have central as well as regional office networks with suitable resourcing and capacity.

They also have a charter to help develop public-good activities surrounding the work of FGs and IPs, as well as a work program focused on increased smallholder market participation and thereby enhanced household incomes, food security and poverty alleviation. In both cases, however, their role would be supportive, as described in Figure 20, as the model is commercially focused and public-sector partners are there to help catalyse progress with a view to more-timely and significant results.

The Ministry of Agriculture and KARI would both be important in their own right in establishment of the proposed model, but would need to act in partnership with other public agencies and private-sector interests. This should not be surprising given an agenda that will demand public–private partnerships for capital-intensive projects with potential barriers impeding progress in entering and moving along the value chain, and for enterprise development opportunities.

It is apparent from the questionnaire results reported earlier that public-sector involvement with FGs and IPs will need to be sensitive to the underlying ownership of any initiative by smallholders and their commercial partners. Put simply, should the parties whose welfare any initiative is aimed at improving become disempowered by losing control to public agencies, there is a significant risk of implosion and collateral damage for any future proposed undertaking. Public agencies are usually aware of such risks, although nervousness on their part is understandable when public funds are deployed, and accountability and transparency for their application are expected. Therefore, a 'balancing act' is required in which the governance framework for using public resources is clear but caution is exercised in regard to avoiding any stifling of entrepreneurship and creativity.

Public-sector agencies will have to also give careful consideration to their 'exit strategy'; that is, it can be expected that their role will be relatively more intensive early in the life of FGs and IPs relative to later on. KARI has clearly given consideration to these issues, as shown in Figure 19, which illustrates the changing contribution of ARD over the life of an IP.

Public agencies can make a significant difference through their involvement at the commencement of such initiatives for several reasons. First, their preparedness in bringing stakeholders together signals an interest from government in the directions proposed for FGs and IPs. Second, it arouses interest from stakeholders that government may be prepared to resource public-good aspects of an FG–IP initiative, including some of those activities discussed below. Third, government agencies have 'convening power', at least initially, as stakeholders wish to ascertain likely developments in their operating environment, and they see merit in accessing the considerable scientific and other skills and expertise that might not otherwise be readily available. Nevertheless, for the reasons touched on by several questionnaire respondents, public agencies need to avoid their interest being seen as a 'top-down' approach that undermines empowerment of smallholders and their value-chain partners. These issues are not insurmountable if handled well, and the gradual changing of roles as indicated in Figure 19 is a solid foundation for progress.

Following a threshold decision by government and stakeholder interests to proceed with an FG–IP initiative, an enormous amount of work needs to be done after initial consultations on the proposed way forward. The consultations will help shape the design of what is to be implemented but, regardless of its final form, there will be common issues concerning both FGs and IPs to be addressed.

The formation of either an FG or IP requires careful management. Of critical importance, particularly for FGs, is to make effective use of existing community social, spiritual or other groups who could potentially provide a head start to a common-interest FG focused on enterprise development. Representatives from such groups may subsequently become operational IP members together with their value-chain partners, and other members such as regional government or research providers.

For both FGs and IPs the importance of having a group 'champion' cannot be underestimated. There needs to be passion and drive to interest others in a group activity, particularly if communities and value-chain partners harbour suspicions based on past experiences regarding what, if anything, another new initiative can possibly achieve. Such champions would preferably be found from within communities and be identifiable figures commanding respect for their commitment.

The same thinking applies to IPs, although finding a champion with entrepreneurial flair and broad interest in the success of value chains and their implications for smallholder welfare will require a breadth of view beyond any one element of the value chain, and an understanding of the array of issues at play.

Just as important for group success is the facilitator/broker, who is usually critically important for keeping FGs and IPs 'on track' to achieve their goals and aspirations. Unlike the champion, the facilitator is in a support role and has the advantage from that perspective of offering independent views concerning how to make progress. The facilitator/broker can explore the opinions of every member, as well as obtain external input through their liaison with a broader network of people with relevant skills, knowledge and expertise. The successful facilitator understands the need not to move too far from what it is that his/her group is attempting to accomplish, and is able to revert quickly from liaison / draft strategy mode to action, as decided by the group, following consideration of alternative options. For many, if not most, groups it is impossible to achieve their desired outcomes in the absence of a skilled facilitator working with them. Often, as in the Landcare case, facilitators work with multiple groups, which can position them to make a very useful contribution to group networking needs and opportunities, as may be the case when FGs are represented by an FA on an operational IP.

Giving early attention to the governance environment for an FG or IP is critically important. Failure to establish clear rules governing membership rights and responsibilities, and group behaviours and accountabilities, can quickly lead to mistrust and threaten cohesiveness, and thereby erode social capital and the spirit of cooperation and reciprocity that enables community-based institutions to progress. Unless asset ownership and use rights and related matters are well defined, FG members are likely to be reluctant to invest their scarce capital in the group's enterprise development. Moreover, groups need to demonstrate that they can handle and account for any donor funds they can potentially attract, as well as record progress with funded programs. In effect the FG will often become a legal entity, with member shares necessary for the purposes of trading, procurement, investment and ownership.

IPs also require governance arrangements suitable for their activity, although these may prove less onerous than could be expected for an FG, as IPs are less likely to be an enterprise. However, they may directly resource or administer funding for R&D or capacity building, and hence could become owners of intellectual capital. An IP brings together diverse value-chain stakeholders and, while their interactions may be informal, the participants need to establish how they wish to conduct their business and address any formal requirements that may prove necessary.

Perhaps the most fundamental question that FG members will address is why they have come together. What is their common interest and is the enterprise they are contemplating a viable pursuit? Where are the markets they are hoping to enter? On what scale might the enterprise be undertaken and what are the required input expenses and expected returns? Is there a seasonal window that production might be able to take particular advantage of and is it at a time when many others may do likewise, or is there scope for unique off-season sales? Are there particular activities (e.g. pooling labour, sharing machinery, using common facilities such as a storage shed) that could economically be group activities and where are the lines between what is FG business and what are individual member responsibilities? These are just some of the questions that need to be discussed by FGs but they need not do so alone. Indeed, many smallholders would find these questions too difficult to deal with without external assistance. They may not even be in a position to ask the right questions, but their likely success or otherwise will probably be determined by a comprehensive understanding of such issues.

There are alternatives regarding how an FG deals with these matters. One is to seek funding from a government or non-government donor for a feasibility study of enterprise development options. The FG facilitator could do the investigative work on behalf of a single or possibly multiple FGs. This approach fits well with the way in which KAPP went about assisting CIGs. Another approach might be to introduce the proposal to an IP. Again, R&D could be undertaken, possibly with the assistance of IP members or support agencies, in response to what smallholders seek to achieve. The latter approach has the advantage of bringing a through-chain, market-oriented perspective to any work undertaken, and builds broader ownership of the proposal should it proceed.

There is most likely a depth and breadth of experience among IP members covering training, infrastructure, markets, inputs and other areas, as identified in Table 19, as well as expertise to identify where barriers such as transport or storage and distribution logistics might prove troublesome. The two options are not mutually exclusive and it may be sensible, pending availability of resources, to do both.

In order to best position smallholders to make their FG a success, some investment in technical, economic and group participation skills will most likely be required. It would be folly to think that transformation of smallholder welfare can occur without investment in their human capital. Smallholders will need to confront many risks and uncertainties as they go about developing and implementing their enterprise development plan. In addition, the market environment is difficult and does not forgive mistakes. Funds expended in the event of failure are not returned and, for a variety of reasons including adverse seasonal conditions or a price slump, success may not come with the first attempt at market participation. These risks can be mitigated by various strategies, but the underlying requirement to maximise the likelihood of success is building the capacity of FG members so that they can make high-quality decisions, are resilient and can deal with what might or will go wrong.

The skills to be invested in were discussed in earlier sections of this report. Many areas could be covered, including communication and interpersonal skills as well as strategic and leadership skills, which were among the most popular nominated by respondents to the questionnaire developed for this study (see Table 15). In addition, there is likely to be demand for more technically oriented knowledge relating to production and input use, as well as management expertise concerning finance, risk and the environment. Each FG will have its own requirements depending on what expertise they already have available, what is needed, and their commitment to either building their own capacity or relying on others for advice.

Whatever skills and expertise the FG decides its members need, a similar approach to that outlined above for enterprise development may be useful. That is, available funding from a government or non-government donor could be deployed by the FG in seeking out a provider, possibly in conjunction with other FGs and with the aid of a facilitator to conduct the necessary research. Alternatively, the FG training demands could be taken to an IP and benefit from the through-chain perspective that IP members can offer. Other possibilities will also emerge in response to the level of smallholder demand and available resourcing. FFSs could play an important role, as these can be tailored to suit individual FG needs and interests, and could be a low-cost and efficient means of service provision. There can be several advantages in having alternative means of capacity building available, not only from the increased choice they give to FGs to pursue training suitable to their particular requirements, but also through the competitive pressure put on providers to develop effective low-cost training packages.

The development of a capacity-building strategy raises the question of how gender issues will be dealt with. Rural women play a highly significant role in smallholder agriculture and hence their training needs are likely to be central to the success of the FG. The discussion around Table 16 led to the conclusion that it is probably best for each community to determine a training strategy that works best for them. Again, the facilitator may be able to assist, but it will be critical not to disenfranchise male smallholders who will also have their own training needs. Issues surrounding content and provision of training will most likely occur in the overall work of the FG, but there are no universal solutions addressing all community situations. The cultural environment itself is changing, with some communities able to approach gender issues more flexibly today than would have been possible in the past.

Many internal challenges will need to be dealt with as an FG pursues enterprise development and market participation. This can lead to frustration and disappointment if solutions to problems cannot be found or if the time taken to resolve issues is unacceptably long. The ‘champion’ and facilitator have critical roles to play in this regard, as they will keep the membership ‘on track’ with a continuing focus on what can be achieved and what it will mean for household welfare, food security and poverty alleviation. They will be assisted greatly by having clearly identified, simple and early outcomes that can yield a tangible dividend to the FG’s efforts. Similar sentiments are relevant to an IP, where the test for ongoing participation and commitment will be actions towards increased competitiveness of the value chain. FGs may be just one of several beneficiaries from efforts made to improve performance.

A key advantage of the proposed framework is that it need not require large government outlays to get it underway. There is flexibility for government and funding agencies to adopt a stepped approach to expenditure. This could entail basic support of FGs and IPs, and essential capacity building to enable enterprise development and market participation; or it could proceed further with assistance for R&D, technology uptake, infrastructure financing, further education and other public-good-related activities. Whatever the level of support, FGs and IPs need to be accountable for any funds received, and demonstrate their productive use to the benefit of the target group(s). In this respect, funding agencies can be seen as investors with ongoing information demands, including agreed performance indicators to assist future decision-making.

Ultimately, funding agencies can be expected to regard an FG–IP model such as that proposed here as aiming for future independence from public support, with a view to smallholders standing on their own feet and continuing with the proposed approach because of its underlying merit rather than it being a facility for accessing support.

13. Findings and Recommendations

Given the difficult food security, poverty and household welfare circumstances facing many smallholders and their families, there is a strong case to develop low-cost options that build the capacity for smallholders to increase their market participation. Some smallholders have already embarked on this journey, and new opportunities associated with economic growth, urbanisation, and changing food preferences and marketing invite further consideration of suitable models that can achieve more progress.

FGs and IPs emerge from this study as important vehicles for smallholder enterprise development and engagement with food value chains. In concert with one another, FGs and IPs integrate the advantages of (i) collective action to give the critical mass necessary for market leverage and to combat the inherent disadvantages that smallholders confront due to their individual size, location and command over resources, and (ii) networking to connect smallholders into the value chain and markets for their produce.

The results from a questionnaire developed for this study lend significant support for both FGs and IPs. There appear to be many products and regions in Africa for which FGs and IPs may prove potentially useful, and ample scope for other private interests and public agencies to become involved in partnership arrangements.

An integrated framework including FGs and their value-chain partners is presented for consideration by ACIAR and its partners, as well as East African governments examining options for cost-effective initiatives aimed at boosting market participation. Of particular significance is that FGs developed at the community level are a core unit of the model, and can be aggregated into farmer associations for inclusion in operational IPs.

At a higher, possibly national or regional level, IPs can also be strategic and interactive, with operational IPs in place for district or local based value chains. Both operational and strategic IPs, as well as FGs, would benefit from support from public agencies, including research institutions, as well as the availability of well-trained facilitators/brokers and the enthusiasm and commitment of widely accepted ‘champions’.

To put a model like that proposed here in place requires guidance, preferably from other successful initiatives based on human interaction and able to harness the power of collective action and networking. Landcare is particularly relevant in this regard because, although it is focused on NRM, it is a community-based participatory initiative empowering, and giving ownership and responsibility of the agenda to, its members. Landcare extends across property boundaries to focus on issues of common interest and makes productive use of both the human and social capital of the group. All these attributes apply equally to enterprise development and market participation as they do to NRM. Hence, many of the actions necessary to successfully establish and conduct FGs and IPs summarised below have their origin in Landcare.

The framework presented here could be implemented on either a national basis or a smaller regional, district or local scale. It could be entirely a ‘greenfield’ initiative with newly established FGs and IPs, or it could make use of existing elements of the model such as those discussed earlier in this report. Initially, however, it is recommended that ACIAR and AIFSRC widely disseminate the study with a view to receiving feedback from interested parties in East Africa. Presentations at relevant conferences and meetings would be very useful for this purpose, as would some investment in interactive web-based communication products.

Should government(s) take the threshold decision to proceed with the framework proposed here, or some variant of it adapted to particular national or regional circumstances, it is recommended that a more detailed cost–benefit assessment of a specific proposal (based on geographic coverage, the number of FGs and IPs, and their related activities) be undertaken. ACIAR and AIFSRC could potentially conduct this research given its experience and expertise in the area, as well as the established partnerships it has developed over many years with African nations. A high level of cooperation with research partners could be expected, particularly in light of their possible future role in supporting the establishment and conduct of an initiative.

There is much to do following a decision to proceed with an FG–IP initiative. Some key actions canvassed earlier are summarised in Box 5. The list is by no means exhaustive but hopefully it is a useful collection of early action items put together with the benefit of lessons drawn from past FG and IP experiences.

A myriad of factors need to be considered in the design and implementation of the framework described in Figure 20, and careful attention to the list presented in Box 5 should go a significant way towards achieving success. However, these actions alone will not always generate desired outcomes, even under circumstances where they are generously funded by government or from non-government sources.

Box 5: Issues Concerning Establishment of Farmer Groups and Innovation Platforms

- Effective use of existing community groups or other institutional machinery relevant to FG–IP goals and objectives, with a view to facilitating early progress and avoiding disenfranchising those in a position to assist
- Inclusion of a highly committed and regarded 'champion' of the FG and IP mission with creativity and entrepreneurial skills, and sensitivity to group ownership and empowerment
- Recruitment of a facilitator or broker able to move groups forward by bringing issues into sharp focus, liaising among members to mobilise views, consulting with the wider stakeholder community and sources of expert advice to develop strategies and an agenda for group consideration, and communicating group needs and outcomes as required
- Establishing a transparent and well-understood governance environment that provides members with clearly set out rules concerning group and member accountabilities and responsibilities
- Early attention to an enterprise development plan, possibly assisted by demand-driven R&D informing the economic and scientific feasibility of alternative options that could form the basis for development of a business plan
- Capacity building of the individual skills and expertise necessary for effective leadership; management; participation; communication; and the technical, financial and logistical requirements needed to build human and social capital and achieve group objectives
- Attention to gender-related issues that might affect group composition or strategies such as enterprise selection, training and membership responsibilities
- Clear articulation of what is group business compared with the business of the individual smallholder or value-chain partner
- A focus on deliverables that can be achieved relatively quickly

Other issues that need to be considered are complex and varied and beyond the scope of this report, although they have been referred to at various points. Many are widely discussed but difficult to pursue due to their capital intensity. This category includes investment in road and rail transport, electricity, communications, irrigation and other infrastructure services that could potentially be supplied by the public and/or private sectors. The importance of poorly developed infrastructure should not be underestimated. Indeed, Barrett (2008) observed that the cost and logistics of transport in many countries go some way towards explaining why it is often not economic for smallholders to look beyond subsistence—poor transport infrastructure effectively adds to the cost of getting produce to market as well as the cost of procuring inputs. Similar sentiments also apply to the poor provision of other infrastructure-related services.

There are also difficult issues surrounding the provision of credit for smallholders. These arise partly from a lack of smallholder credit history with lending institutions, but also from questions concerning collateral to guarantee loans. The result can be a lack of access to credit or punitive risk premiums that impact adversely on the viability of an enterprise.

Finally, regulatory matters potentially add to the risks for smallholder and wider value-chain investment, and may require attention. Some are trade-related and concern restrictions governing the freedom of agricultural trade in Africa (World Bank 2012b), while others concern competition in the value chain, contractual and other legal arrangements, and product safety and accreditation requirements to protect consumer interests. These issues have not been addressed in this report in any detail, but they are important topics to consider and 'tick-off' as 'satisfactory' in parallel with expenditures to support smallholder market participation. This caveat is not meant to suggest that investment in the framework proposed here is futile in the absence of progress on this wider agenda. Nevertheless, the potential gains for East African economies and their smallholder communities from assessing and pursuing the benefits of wider reforms can be large, and will complement what is achieved from increased smallholder market engagement.

Appendix 1: Questionnaire

Name:

Organisation:

Farmer Group and Innovation Platform Questionnaire

You are invited to participate in a questionnaire to assist with an Australian International Food Security Centre (AIFSC) study into *A Landcare-based Approach to Food Security in East Africa-Scoping Study*. AIFSC is a strategic centre within the Australian Centre for International Agricultural Research (ACIAR).

You have been selected to participate in the questionnaire because of your expert knowledge of East African smallholder agriculture, particularly Kenyan smallholder agriculture, where this questionnaire is focused, to help with the second stage of the study. The information collected from this questionnaire will be used in an aggregated form such that **no details of individual respondents or their answers to questions will be revealed**.

The first stage of this study was completed earlier this year. An Executive Summary for this completed work is attached and further details are available on request.

The overall focus of the study is poverty alleviation and the improvement of smallholder food security. The preliminary findings from work already completed highlight the potential usefulness of farmer-groups in lowering smallholder input costs and raising net returns from agricultural enterprises. The main mechanism for improving outcomes is the increased market power exerted by farmer-groups in comparison with individual smallholders. This market power is derived from the increased volumes of input procurement and sales of outputs. Farmer-groups can also contribute to activities requiring cooperation among smallholders such as natural resource management, pest and disease management, farmer training, and pooling of labour for tasks having a common interest, such as weed control.

A second area with potential is the involvement of farmer-groups in innovation platforms (IPs). An IP is a forum where private, public and non-government organisations (NGOs) come together to progress their mutual interests in the value chain. The principal benefits of farmer group participation in an IP are to increase smallholder connectivity with the market place and improve the flow of information to smallholders in regard to market preferences, logistics and opportunities.

This questionnaire seeks to obtain input concerning each of these areas and thereby assist in development of the approach for Kenya.

Instructions for completing questionnaire: Questions require one response or multiple responses. Please mark the appropriate grey box(es) by clicking on those selected. Many questions provide the opportunity to nominate 'Other' responses not included in the indicative list, while others provide room to add a supplementary comment if you wish in the space provided. Please keep your comments succinct.

Please proceed to begin the questionnaire.

When completed, please save and return the document by email to bwonder@bigpond.net.au Questionnaires should be returned by 19 July 2013.

A. The Potential Role of Farmer-groups

Farmer-groups consist of smallholders who come together to jointly pursue agricultural enterprises and other opportunities that cannot be achieved as effectively or profitably when undertaken by individuals. They may be formal or informal in their structure, but share common financial objectives of maximising returns from sale of their produce and minimising their on-farm input costs and marketing expenses. They may also have mutual interests in the management of their farming environment or skill acquisition necessary for a successful agricultural enterprise.

1. **How significant do you think farmer-groups can be for enabling smallholders in Kenya to participate in urban food markets in major cities (e.g. Nairobi, Mombasa, Kisumu) as well as rural town and village markets?**

- ☐ Critically significant
- ☐ Very significant
- ☐ Some significance
- ☐ Insignificant

Comment:

2. **Which agricultural activities in Kenya do you see as most suitable for a farmer group approach to agricultural production and marketing? You may choose more than one.**

- ☐ Cereal crops
- ☐ Fruit & nuts
- ☐ Mixed cropping
- ☐ Vegetables
- ☐ Livestock
- ☐ Other (please specify):

Comment:

3. **Of the following factors, please mark up to 5 that you see of most benefit to smallholders in Kenya as a result of forming farmer-groups.**

- ☐ Increased volumes of produce to attract buyer interest
- ☐ Lower unit transport and marketing costs due to increased scale
- ☐ Lower unit costs of inputs (e.g. fertiliser, seed, chemicals) through bulk purchases
- ☐ Lower unit costs for early-stage processing of produce (e.g. cleaning, grading and packing)
- ☐ Viable sized group for provision of extension services
- ☐ Joint provision of irrigation, machinery, storage and collection infrastructure
- ☐ Stronger negotiating position with traders, retailers and other buyers
- ☐ Access to communication services such as the internet
- ☐ Access to lower cost finance (loans/credit) due to reduced risk and market influence of a group
- ☐ Access to group funds (e.g. merry-go-round, table banking)
- ☐ Access to donor funds for improved production and marketing
- ☐ Access to market information
- ☐ Access to and influence of research and development
- ☐ Other (please specify):

4. **From the list below, please identify up to 4 of the most important activities that you see as best conducted by farmer-groups rather than individual smallholders in Kenya.**

- ☐ Pooling of labour for farming and conservation tasks (e.g. planting, fertilising, harvesting, building terraces)

- [ ] Shared knowledge of farming techniques and expertise
- [ ] Improved natural resource management (e.g. tree planting, forest conservation, soil erosion management)
- [ ] Improved pest and disease management
- [ ] Better relationships with other community members
- [ ] Improved management of land tenure issues and challenges
- [ ] Providing support for farmers (e.g. for training and market information)
- [ ] Implementation of product traceability systems and compliance with food safety requirements

Other (please specify):

B. Organising Farmer Groups

5. From the following options, please nominate up to **3** that you see as the most effective for attracting smallholders to become members of farmer-groups.

- [ ] Engagement (face to face) of existing cultural, spiritual or community groups by local agricultural or government representatives or NGOs
- [ ] Word-of-mouth communication between local smallholders based on common interests
- [ ] Distribution of printed matter by local agricultural or government representatives or NGOs outlining potential advantages of farmer-groups
- [ ] Farmer associations or commodity organisations meeting with smallholders and distributing relevant printed material
- [ ] Value-chain participants (e.g. traders, processors and retailers) engaging directly with smallholder groups
- [ ] Existing contract farming arrangements to identify and organise farmer-groups
- [ ] Other (please specify):

6. From the list below, please nominate up to a maximum of **8** factors that you think are most likely to help the establishment and longer term success of farmer-groups in Kenya.

- [ ] Age of potential members
- [ ] Gender of potential members
- [ ] More successful if predominantly female membership
- [ ] More successful if predominantly male membership
- [ ] More successful if mixed male and female membership
- [ ] Homogeneity of socioeconomic status of potential members
- [ ] Clear and limited number of goals
- [ ] Focus on early and achievable outcomes
- [ ] Size of the farmer group
- [ ] Focus of group determined by widespread member participation in decision making
- [ ] Self-reliance, empowerment and autonomy of group
- [ ] Honesty and trust among membership
- [ ] Quality of group leadership
- [ ] Background of leader (farmer, NGO etc.)
- [ ] Financial capacity of group
- [ ] Formal arrangements underpinning group (such as Charter, Rules or Articles of Association)

- [ ] Good governance arrangements for farmer-groups
- [ ] Group facilitator to assist coordination and implementation of decision making
- [ ] Skills and education of potential members
- [ ] Other (please specify):

C. Equipping Farmer-groups for Success

Human Capital Needs

7. **Please indicate using the list below what you think are the 3 most important skills and areas of expertise needed by smallholders to successfully participate in a farmer group.**

- [ ] Technical production-related skills concerning plant and animal enterprises
- [ ] Technical knowledge concerning use of inputs, including fertilisers, chemicals, machinery etc.
- [ ] Strategic and leadership skills
- [ ] Budgeting, record-keeping and financial management skills
- [ ] Natural resource management skills (e.g. soil, water, climate change)
- [ ] Risk management skills to assist decision making under uncertainty
- [ ] Communication and interpersonal skills
- [ ] Other (please specify):

8. **What is the best strategy for training rural men and women?**

- [ ] Please mark the appropriate box and add any comment you wish to make.
- [ ] Same content for men and women and offer to one mixed gender group
- [ ] Same content but offer separately to men and women
- [ ] Different content for men and women reflecting respective needs, and offer to one mixed gender group
- [ ] Different content and offer separately to men and women

Comment:

Social Capital Needs

9. **Farmer-groups require behaviour most likely to generate outcomes and meet the needs of members. Please nominate a maximum of 3 of the following factors that you see as most important in this regard.**

- [ ] Trust among farmer group members
- [ ] Good understanding of roles and responsibilities of executive and group members
- [ ] Well-understood group rules and regulations
- [ ] Preparedness to share skills, knowledge and expertise
- [ ] Willingness to help fellow members overcome challenges and barriers to group success
- [ ] Continuous improvement in group culture that tolerates mistakes
- [ ] Capacity to network with other farmer-groups and value-chain participants
- [ ] Group rather than individual or subgroup decision making
- [ ] Other (please specify):

Catalysts for Group Self-Help

10. Achieving early progress by farmer-groups in Kenya may require the assistance of trained facilitators or other means of helping groups to advance. From the list below, please indicate the 2 most useful options for this purpose.

- ☐ Trained government facilitators to work within and between farmer-groups
- ☐ NGOs, community-based organisations, faith-based organisations or farmer associations to provide facilitators
- ☐ Seek assistance of value-chain partners (e.g. processors, traders or retailers) to provide facilitators
- ☐ Government-funded training of local youth to become facilitators
- ☐ Seek commercial support to train local youth to become facilitators
- ☐ Other (please specify):

D. Farmer-groups in the Value Chain

The Potential Role of Innovation Platforms

The term 'innovation platform' (IP) is used here to describe partner organisations drawn from the public, private and NGO sectors to advance the mutual interests of value-chain participants. IPs could perform various functions ranging from building the capacity of farmer-groups to identifying and tackling opportunities and constraints related to value adding in the chain.

11. How important would it be for Kenyan smallholder farmer-groups to participate in IPs, with a view to enhancing their prospects of market participation? Please mark the appropriate box and add any comment you wish to make.

- ☐ Critically important
- ☐ Of some importance
- ☐ Not very important
- ☐ Unimportant

Comment:

12. Which of the following areas do you think an IP might best assist Kenyan farmer-groups? Please nominate a maximum of 5 that you think are most important, or indicate 'Unlikely to assist in any area'.

- ☐ Agricultural extension advice and training
- ☐ Advice concerning market identification and agricultural product choices
- ☐ Access to and procurement of inputs
- ☐ Local infrastructure for collection, storage and grading of produce
- ☐ Finance and budgeting advice
- ☐ Market information
- ☐ Certification and accreditation for food safety
- ☐ Natural resource management
- ☐ Pest and disease management
- ☐ Networking with other farmer-groups
- ☐ Improved communication with others in the value chain
- ☐ Other (please specify):
- ☐ Unlikely to assist in any area

Please continue to answer Questions 13 to 18 unless you answered Question 11 with 'Not very important' or 'Unimportant', and/or Question 12 with 'Unlikely to assist in any area', in which case you should proceed to the end of the questionnaire.

13. Which of the organisations below do you think should be included on an IP? You may choose more than one.

- ☐ Farmer-groups or their representatives

- [ ] Value-chain participants, including input suppliers, processors, transporters, retailers and traders
- [ ] Local government
- [ ] National government representatives on an 'as-needed' basis
- [ ] Non-government representatives with national perspective
- [ ] Farmer associations
- [ ] Research bodies (e.g. KARI, ICRAF, ILRI)
- [ ] Other (please specify):

14. **Which of the following areas do you think an IP might be able to support with benefits to Kenyan smallholders as well as value-chain participants in general? Please nominate up to 3 that you think most important.**

- [ ] Strategies to assist capacity building of smallholders and their relationships with other value-chain participants
- [ ] Commissioning research on key issues facing smallholders and the value chain
- [ ] Options for overcoming key logistical challenges for smallholders marketing their produce
- [ ] Advocacy to government concerning smallholder-related issues affecting the value chain (e.g. the competitive environment, land tenure)
- [ ] Sponsorship or fundraising to help smallholders progress their market participation
- [ ] Monitoring of value-chain development
- [ ] Other (please specify):

Organisation of Innovation Platforms

15. **If IPs were established to assist Kenyan smallholders, what do you think would be the appropriate level for them to be effective?**

You may wish to nominate more than 1 level.

- [ ] National
- [ ] Provincial
- [ ] County or district
- [ ] Subcounty or district division
- [ ] Other (please specify):

16. **Do you think the number and distribution of IPs should be aligned with the location of centres of research and administration such as the Kenyan Agricultural Research Institute (KARI), county government and offices of the Ministry of Agriculture? What is your principal reason?**

- [ ] Yes
- [ ] No

Reason:

17. **Do you think public organisations such as research centres (e.g. KARI, ILRI, ICRAF) or county government could take the initiative in the establishment of IPs before passing responsibility to other potential members once the IP is established? Please add any comments you wish to make.**

- [ ] Yes
- [ ] No

Comment:

18. As it is not possible or helpful for all smallholders to attend meetings of an IP, which of the following options do you see as useful for assisting inclusiveness while leaving the IP in a good position to progress its work? You may choose more than 1.

- ☐ Smallholders nominate representatives drawn from their farmer-groups to participate on IPs
- ☐ Smallholders establish a network or association of farmer-groups to be represented on an IP
- ☐ Smallholders have a NGO represent them on IPs
- ☐ Smallholders have a facilitator represent their interests on an IP
- ☐ Smallholders make use of modern communication methods to 'virtually' attend IP meetings
- ☐ Other (please specify):

Thank you for completing the questionnaire. All participants will be sent a copy of the final ACIAR report when completed in 2014.

Please save the document and return by email to bwonder@bigpond.net.au.

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