LEAPING & LEARNING

LINKING SMALLHOLDERS TO MARKETS

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TABLES, FIGURES AND BOXES

ABBREVIATIONS

AGENT	Agribusiness Entrepreneur Network and Training programme of CARE (Zimbabwe)
AGRA	Alliance for a Green Revolution in Africa
AKL	Afro Kai Ltd (Commodity traders)
ASTI	Agricultural Science and Technology Indicators
APF	AgriProFocus
BOAM	Support to Business Organisations and their Access to Markets (Ethiopia)
CAADP	Comprehensive Africa Agriculture Development Programme
CARE	Cooperative for Assistance and Relief Everywhere
CIAT	International Centre for Tropical Agriculture
CPRC	Chronic Poverty Research Centre
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
Eurep GAP	European Retailer Partnership Good Agricultural Practices
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organisation of the United Nations
FAOSTAT	Food and Agriculture Organisation of the United Nations (Statistical service)
GlobalGAP	Global Good Agricultural Practices
HR	Human Resources
ICCO	International Cocoa Organisation
ICT	Information and communications technology
IFAD	International Fund for Agricultural Development
IFDC	International Centre for Soil Fertility and Agricultural Development
IFDC	International Fertiliser Development Centre
IFPRI	International Food Policy Research Institute
IIED	International Institute for Environment and Development
KIT	Royal Tropical Institute (Amsterdam)
KTDA	Kenya Tea Development Agency
LINTCO	Lint Company of Zambia
LLL	Linking Local Learners
MSHP	Mara Smallholder Horticultural Project
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organisation
NPK	Nitrogen, Phosphorus and Potassium (fertiliser)
NRA	Net Rates of Assistance to Agriculture
OAF	One Acre Fund
PrOpCom	Promoting Pro-Poor Opportunities in Commodity and Service Markets
RARP	Rural Agro-dealer Restocking Programme OR Rural Agricultural Revitalisation Programme (in phase III)
RIC	Rural investment climate
SD	Standard Deviation
SFMC	Savannah Farmers Marketing Company
SITC	Standard International Trade

	Classification
SN	Soja Nyo (Togo)
SNV	Netherlands Development Organisation
SPPO	Service Provider and Producer Organisation
SWOT	Strengths, Weaknesses, Opportunities and Threats
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value Added Tax
WBDA	World Business and Development Awards

Supply chain

The links that connect inputs to farm and then on to storage, processing, transport and distribution to consumers for a given product through a single chain.

Value-chain

The value-chain may consist of several supply chains for a particular product. It includes the supporting services that allow the supply chains to operate. It may even be taken to include the factors in the economic environment as well.

SUMMARY

Over the last fifty years food production per person in Africa has grown disappointingly slowly at little more than 10%. The population of Africa is growing rapidly at an average annual rate of 2.5% and is expected to almost double by 2050 to close to two billion people. Chronic hunger on the continent is high; nearly 23% of the population are classed as hungry, many of whom are farmers owning less than two hectares of land. Smallholder farms in sub-Saharan Africa number around 33 million, represent 80% of all farms in the region, and contribute up to 90% of food production in some sub-Saharan African countries. Developing smallholder agriculture can be effective in reducing poverty and hunger in low income countries but only through sustainable access to markets can poor farmers increase the income from their labour and lift themselves and their families out of poverty.

Most poor farmers are not linked to markets for a variety of reasons: remoteness, low production, low farm-gate prices, and lack of information, to name a few. Addressing and overcoming these market failures in order to increase smallholder farmers' access to markets was the subject of this research project. In short, the project aimed to answer the question: how can smallholders in sub-Saharan Africa use a combination of agricultural growth and links to markets to raise their incomes and reduce poverty and hunger? What follows is a summary of the considerations, conclusions and recommendations that resulted from the synthesis and exploration of existing material, case studies and workshops.

First, an enabling investment climate and the provision of rural public goods, provided by the state, are necessary conditions to ensure fair and efficient market linkages but they are not always sufficient.

Second, most smallholders have limited access to inputs, technical advice, insurance, credit and other financial services, and to output markets. Improving their access is a major challenge for smallholder agricultural development.

Third, successful links between smallholders and markets require consideration and planning around **three sets of factors**:

Business case for smallholders and their partners in supply chains

- Governments need to provide an enabling investment climate in rural areas: peace and security, a stable macro-economy, and key institutions such as property rights, and trading standards (such as weights and measures).
- Governments have to invest in rural public goods: roads and power; education, health care and clean water; and agricultural research and extension.
- The fast-growing domestic and regional markets in Africa's cities are less demanding and more dependable than those for high-value exports.

Actions must follow the needs of smallholder farmers who may variously seek to maximise output or prices, or to reduce risks in production and marketing, or a combination of both.

Approaches to linking

- Those seeking to improve links, be they private enterprise, government agency or non-governmental organisation, need to emphasise facilitation, enabling, learning and flexibility.
- Support to novel linkages may be temporarily needed, but exit strategies need to be in place.
- Leadership by programme managers can help to resolve tensions between control in the short run and the need for adaptation in the longer run.
- At the same time, managers on the ground must have the flexibility, resources and political support to adapt programmes to emerging circumstances.

Organising the links

- Linkages between farmers and markets usually need to be organised by a catalyst: either a private firm as supply chain champion; or by a non-governmental organisation, often in partnership with private firms.
- Rarely can large-scale firms in supply chains deal directly with individual small-scale farmers. The costs are usually too high. Hence farmers have to be grouped, either directly in farmer groups, associations or cooperatives, or indirectly through local input dealers or appointed distributors, lead farmers or bank agents.
- Contracting is the most common linkage although this can take many forms.
- No one form of linkage is ideal.

Three conclusions arise from these considerations:

First, most linkages do not reach the most poor and highly vulnerable.

- Their priorities are probably best met by creating jobs, building their assets, improving their health and education, and in providing social protection. Market links will not provide multiple wins.

Second, if successful cases are to be scaled up to increase their reach and impact then a variety of models and processes must be considered. Scaling up does not lie in a particular and specific arrangement: a particular form of contracting, or an ideal agricultural cooperative.

- Approaches, not form, lead to effective links.
- What then needs scaling, replicating and adapting are processes of enabling, facilitation and learning.
- Supported by a necessary architecture that includes catalysts of change, forums to consider and address specific problems and mechanisms to group farmers.

Third, while some links, usually for high value cash crops, need little public stimulus, for staple crops, there seem to be few private initiatives that address the lack of access.

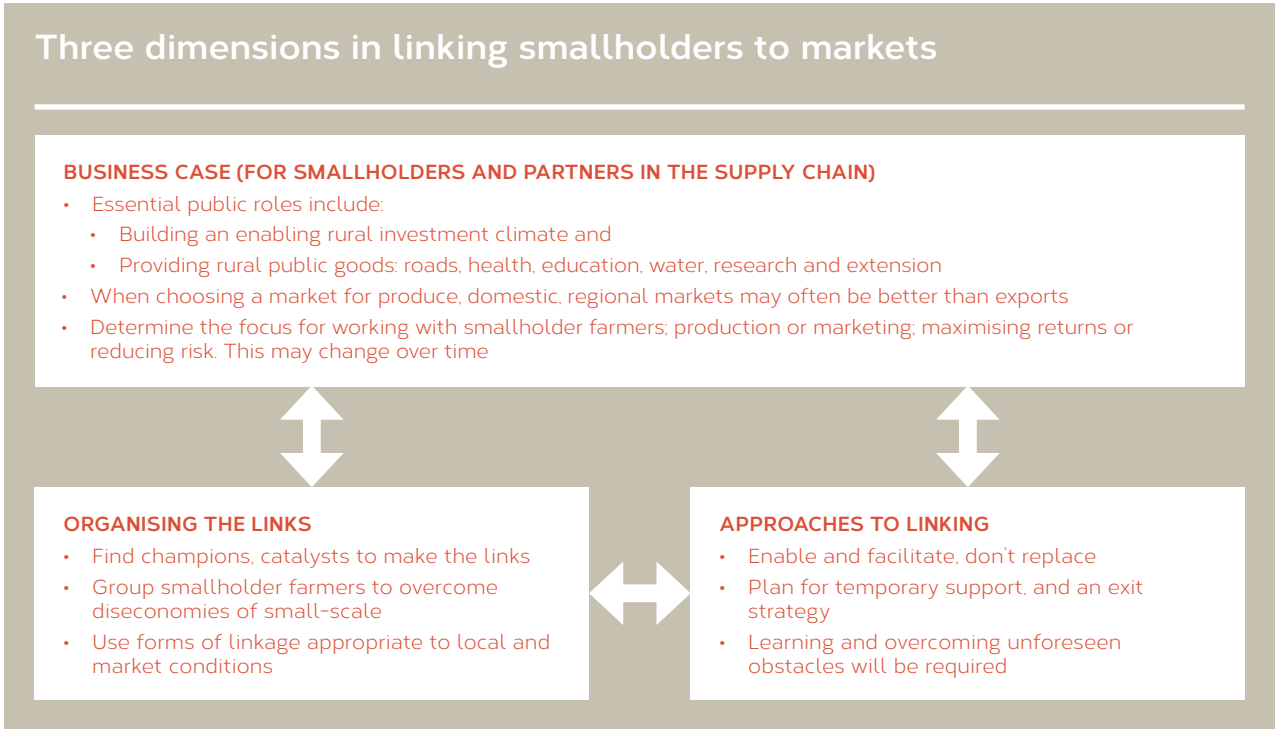
- Is there, therefore, a case for public subsidies? Public action to make links that lead to additional production that, especially in landlocked markets, pushes down prices to the benefit of poor households, may be justified.

The final report that follows presents analysis and investigation into different examples of linking smallholders to markets. Future action can be informed by the successes and challenges discussed.

RECOMMENDATIONS

Governments need to:

- Focus on the basic public roles of setting an enabling investment climate and providing rural public goods. Perfection is not necessary: more important is to remedy the worst deficiencies. **Donors** can support with technical assistance on the investment climate, and by funding investments in low income countries where public resources are currently insufficient.



- Set up forums for value-chains with participation of key players, with political backing and linked to decision-making.
- Fund promising initiatives to link smallholders to markets, either through competitive challenge funds or by administrative allocation. **Donors** can support with technical advice and funds.

Donors can support governments and otherwise need to:

- Accept that processes of engagement matter, that these take time and involve risk. If donor agencies cannot operate accordingly, then work through non-governmental organisations (NGOs) that can, or set up challenge funds. Investing in a portfolio of efforts should ensure that even with disappointments there will be enough success to justify outlays.
- Beware of focusing excessively on projects to promote engagement of smallholders with high-value, export markets: they are an option for only a minority of smallholders. Most need steering towards domestic and regional markets.

Non-governmental organisations need to:

- Continue to pioneer innovative approaches, especially linking smallholders to the private sector in productive and equitable ways; and
- Beware of depending too much on particular projects and models: keep options open, stay flexible. Accept that some initiatives may fail: work with portfolios;

Large-scale agricultural investors need to:

- Appreciate that smallholders can be effective suppliers, but that finding effective ways to do this may take time and persistence; and
- It may not be necessary to acquire land and go into farming, with corresponding investment costs and risks; even if there are exceptions, such as nucleus estates, to guarantee throughput to processing plants and to act as demonstrations for out-growers.

All need to:

Monitor the results of these initiatives, learn from them and publish the results. **Donors** with their international overview are well placed to encourage learning, by reviewing experiences and disseminating the lessons. Donors can link practitioners, looking for innovative ways to communicate.

1

INTRODUCTION

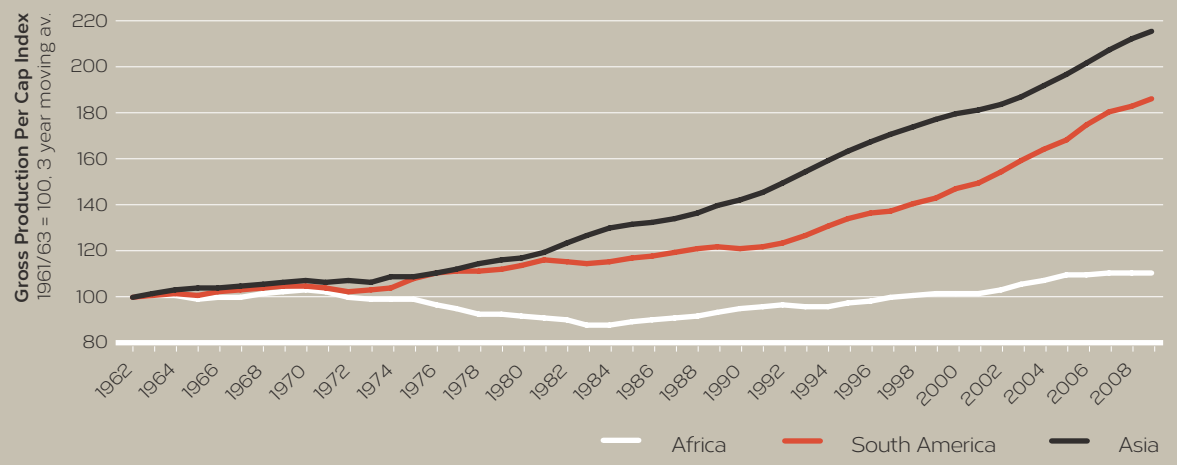
SETTING THE SCENE

Over the last fifty years food production in Africa has grown disappointingly slowly: especially when compared to the rapid growth of population. While Africa has seen food production per person rise by little more than 10% over almost 50 years, Asia has more than doubled food production per person in this time, while for South America the increase has been 84%, see Figure 1.1. This is not to say that there have not been successes in Africa for particular crops, or in particular districts: there have been (Gabre-Madhin and Haggblade 2001, Wiggins 2005), but they have been limited and often not sustained.

Much of farming in Africa is low in productivity, in yields per hectare and in returns to labour, giving farm households poor livelihoods and leaving them vulnerable to bad weather and economic shocks, such as sudden food price spikes.

Figure 1.1 | Food production per capita, Africa compared to Asia and South America since 1961/63

SOURCE: COMPILED FROM FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS (FAO) DATA



Since the turn of the new century, interest in agriculture in Africa has revived. Setting the first Millennium Development Goal as halving poverty and hunger directed attention to where the poor and hungry live: overwhelmingly in rural areas where agriculture is usually the largest source of livelihoods and jobs. When the agriculture ministers of Africa met in Maputo in 2003 they declared that they would strive for 6% annual growth of agriculture and would devote 10% of government budgets to that end. This led to adoption of the Comprehensive Africa Agriculture Development Programme (CAADP) drawn up by the New Partnership for Africa's Development (NEPAD) secretariat as a way to achieve the production goal by the African Union.

Accelerating growth in agriculture in the continent depends on macro-economic policies that limit inflation and allow competitive exchange rates, public investments and the adoption of more productive and appropriate technology (Diao et al. 2012, FAO 2012, World Bank 2007). In the process farmers, most of them smallholders, will raise their productivity and output by engaging more with markets, not only producing and selling more, but also buying in more purchased inputs, accessing financial and other services, and obtaining technical assistance. The better these markets function, the more growth can be expected.

It is not surprising, then, that there are many practical initiatives to find ways to link smallholders to markets more effectively; actions taken by groups of farmers, traders, processors, NGOs and some government agencies. This is the subject of this report.

AIMS OF THIS REPORT

The Leaping and Learning: Strategies for Taking Agricultural Successes to Scale programme aims to contribute to debates about smallholder development in Sub-Saharan Africa, so that:

> Public and private development partners have a greater understanding of the factors that are necessary and of the actions they can take to support smallholder agricultural development projects at scale in Sub-Saharan Africa to boost food and nutrition security and support poverty reduction.

As will be set out in more detail in the next chapter, developing smallholder agriculture can be effective in reducing poverty and hunger in low income countries where other economic opportunities are, for the time being, often limited. The basic requirements for accelerated agricultural growth in Africa are well understood: a rural investment climate that is conducive to investment and innovation by farmers and those in the supply chain; and public investment in rural public goods, including roads and other physical infrastructure, investments in rural people – education, health, water and sanitation, and agricultural research and extension (see section 3.1). These are necessary but not always sufficient conditions for growth.

Beyond that, if small farmers – the vast bulk of Africa's farmers – are to take advantage of opportunities in markets, then additional action often needs to be taken to improve smallholders' access to inputs, credit

and other financial services, to technical advice, and to output markets – and especially those with growing demand and attractive prices. Several limitations restrict access, some of them arising from the high costs of information in negotiations between smallholders and other, usually larger-scale, agents in agricultural supply chains. How to do this effectively, economically, and in ways that are sustainable and encourage private initiative, is only partly known. Hence this investigation began with the following questions:

- How can small-scale family farms in Africa be best linked to markets, to sell surpluses and to obtain inputs, finance and know-how to stimulate agricultural growth and reduce poverty?
- How can this be done both effectively and equitably?
- How can successes be scaled up and replicated?

APPROACH AND METHODS

From the outset, it was assumed – based on existing literature and personal knowledge from several African countries –that there were already many initiatives, some reasonably well documented, to address the issue of linking smallholders to markets that have been started since the late 1990s. Hence, it was decided not to carry out primary research in the field that would have been costly, time-consuming, and would probably only have generated insights specific to a limited range of particular geographical areas, crops and enterprises. Instead, it was decided to draw on what was documented, and above all to examine particular cases already documented. As the work progressed it became clear that there were indeed many such initiatives, more than the team expected.

The following activities were thus carried out:

- The formal, published literature on market linkages in Africa was reviewed, in particular those studies that synthesised insights from primary research and case studies;
- Stakeholders were consulted by Firetail to gain a clear picture of the groups that the project is aiming to support, explore which content and information different groups need, understand how to present and communicate programme output and to discuss how this can be delivered in a way that will maximise impact and increase take-up of the recommendations among different groups;
- Case studies were identified from citations in the literature, from suggestions from specialists, and from personal knowledge. Secondary reports on the initiatives themselves and complementary information on the area or enterprise were collected; and,
- Specialists and practitioners were consulted for their views and insights, primarily in the form of three one-day workshops held in July 2012 in Accra, Johannesburg and Nairobi, see Appendix A.

CASE STUDIES AND THEIR SELECTION

The cases were sampled purposively. Three criteria were set for selection; the most obvious being that there had to be some secondary account of the experience that could be obtained. That, however, introduces a bias towards experiences that have been successful and hence survived. This is a familiar problem – see Barrett et al. (2012) on contract farming – with private and collective initiatives. If the experience of business start-ups is any guide, it is to be expected that some, perhaps many, will fail. Most market links are business propositions within competitive markets: when they fail, farmers and firms in the supply chains lose money and hence abandon, or change, what they do. These experiences, not surprisingly, are rarely documented.

A second decision was to try to avoid the bias in existing accounts towards supply chains for export and high-value niche products, preferring to look for cases that dealt with larger markets within Africa and with more mainstream products. The criterion was not absolute: there are some exports and niche products in the cases, but the intention was to avoid such cases dominating, given the focus in some publications on products and markets that will probably only ever support the livelihoods of a minority of African farmers.

The third criterion was to look for cases with a reasonably even spread across differing contexts. Given the importance for agricultural development of an enabling rural investment climate and a supply of rural public goods, cases from differing contexts were selected. Hence, indices were created for these characteristics at national level, so that a four-section grid was constructed that rated countries in Africa as above and below the regional means for these two dimensions. Cases were sampled to make sure that there were a reasonable number from each. Appendix B sets out the indices, their computation, and hence, into which of the four sections the countries belonged.

Thirty cases was the target set for this study: as many as could be investigated in the time available, but enough to avoid becoming blinded by a small number of exceptional experiences. Table 1.1 (overleaf) sets out the selection that resulted. Details of the cases can be found in Appendix C and can be downloaded from **http://www.odi.org.uk/leapandlearn**

For each case, secondary documentation was reviewed, key points were identified and the results compared and contrasted.

Table 1.1 | Cases of market linkages selected

COUNTRY	ENTERPRISE OR PRODUCT	PROGRAMME, SPONSOR, OR CHAMPION
COUNTRIES ABOVE AVERAGE IN INVESTMENT CLIMATE AND RURAL GOODS		
GHANA	Sorghum	Guinness
	Pineapples	Blue Skies
	Rice, soya, maize, sorghum	AGRA
KENYA	Green beans	Small brokers
	Green beans	Homegrown
	Peas, mangetout	VegPro
	Maize and beans	One Acre Fund (OAF)
	Tea	Kenya Tea Development Agency
	Dairy	Kieni Dairy Products Limited,
SOUTH AFRICA	Fresh vegetables	SPAR
	Fair trade wine and fresh fruit	Thandi
UGANDA	Potatoes	Nando's
	Sorghum	SAB Miller
	Sunflower	Mukwano industries
ABOVE AVERAGE RURAL INVESTMENT CLIMATE, BELOW AVERAGE RURAL PUBLIC GOODS		
BENIN	Rice	VECO
ETHIOPIA	Honey	Support to Business Organisations and their Access to Markets (BOAM)
MOZAMBIQUE	Cashew	Small processing plants
RWANDA	Various	AgriProFocus (APF) and International Cocoa Organisation (ICCO) lead
	Coffee	National strategy
TOGO	Soya	Service Provider and Producer Organisation (SPPO) Soja Nyo (SN)

COUNTRY	ENTERPRISE OR PRODUCT	PROGRAMME, SPONSOR, OR CHAMPION
BELOW AVERAGE RURAL INVESTMENT CLIMATE, ABOVE AVERAGE RURAL PUBLIC GOODS		
BURKINA FASO	Shea butter	Nununa Federation
SOUTHERN AFRICA	Fresh vegetables	Freshmark
ZAMBIA	Cotton Rice	Dunavant Netherlands Development Organisation (SNV)
ZIMBABWE	Improved seeds Agro dealers providing seed, fertiliser	SNV SNV
BELOW AVERAGE RURAL INVESTMENT CLIMATE, ABOVE AVERAGE RURAL PUBLIC GOODS		
NIGERIA	Fertiliser	PrOpCom, DFID
TANZANIA	Cassava Horticulture	Producer Organisations Mara Smallholder Horticultural Project (MSHP)
MIXED CASES		
BENIN, BURKINA FASO, MALI	Cotton	Producer Organisations
EAST AFRICA	Staples, including maize, beans, potato	Linking Local Learners (LLL)

Full text for the 31 case studies researched for this report can be downloaded directly from the ODI website, at **http://www.odi.org.uk/leapandlearn**

THE REPORT

The rest of this report begins with a review of the literature relevant for this study. First, it looks at the relation of smallholder development to increased incomes, reduced poverty and improved food security and nutrition. It reviews debates about the current relatively low engagement of many small farmers in Africa with markets, above all with those for inputs and finance. After that it examines the recent literature on experiences of trying to improve the links between smallholders and markets.

This review then forms the basis for a three-part framework to organise thinking about links, drawing on the material from the cases. Questions about the degree of social inclusiveness and gender aspects are addressed.

Finally, the conclusions restate key points, discuss social inclusion, set out what may be scaled up and look at the case for public subsidy of efforts to improve links for smallholders growing staples. Recommendations for key actors are drawn out.

Governments need to provide an enabling investment climate in rural areas.

2

MARKET LINKS, SMALLHOLDER DEVELOPMENT AND REDUCING POVERTY AND HUNGER: THE LITERATURE

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This review looks first at the relationship between smallholders engaging with markets and the impacts on poverty and food security, arguing that while greater commercialisation does not guarantee improved food security, often it does improve food security. Then it turns to what is known about current engagement with markets by smallholders and why this may be less than optimal. The final section looks at what is known about particular institutions, such as contracting and producer organisations, as ways to improve linkages. It concludes by synthesising the consensus that can be seen in reviews of linkages published in the last few years.

2.1 SMALLHOLDERS, MARKETS, POVERTY AND FOOD SECURITY

FROM ENGAGEMENT WITH MARKETS TO HIGHER FARM INCOMES

For many, it is an article of faith that small farmers can benefit from greater engagement with markets, both for increased output for sale, as well for inputs and services that can raise productivity. It is easy to see why. Markets allow farmers to benefit from increased production: limited demand in village and district markets can be overcome by selling to more distant urban and export markets, where not only is demand larger, but also consumers may be prepared to pay for additional quality and variety of produce. Output markets should allow farmers to specialise, growing those crops in which they have advantages, then use the proceeds of sales to obtain whatever else they need for household consumption. Input markets can allow farmers access to technologies embodied in new seed, fertiliser, chemicals and machinery with which they can work more productively. Credit and other financial services can help them manage cash flows and to invest as opportunity suggests, rather than as cash flows permit.

Theory aside, what does the empirical record suggest about the benefits of market engagement or 'commercialisation'? Ideally there would be statistics on degrees of commercialisation and average farm incomes by household, with similar statistics on other determinants of income, to allow this proposition to be tested. However, no such comprehensive data sets exist, although some household surveys and other observations through time give indications of the relationships.

For **Bangladesh, Philippines, Tamil Nadu (India) and Thailand**, household surveys in the 1980s were compared to those in the mid-2000s (Otsuka and Yamano 2008) to examine changes in real household incomes, comparing areas of high and marginal potential, see Figure 2.1. In all cases, agriculture was growing and farmers were increasingly engaged with markets. In all areas other than marginal parts of Thailand, farm incomes had risen over the twenty or so years between surveys. Those increases were quite modest, however, often less than a 25% increase. Overall rural household incomes increased by more, since in all cases except high potential Tamil Nadu, non-farm incomes rose by much more than farm incomes – a point taken up in the next section.

Figure 2.1 (a) | Changes in real household incomes, high potential rural areas, 1980s to 2003/04

SOURCE: COMPILED FROM DATA IN OTSUKA AND YAMANO 2008. INCOMES WERE MEASURED IN CONSTANT TERMS.

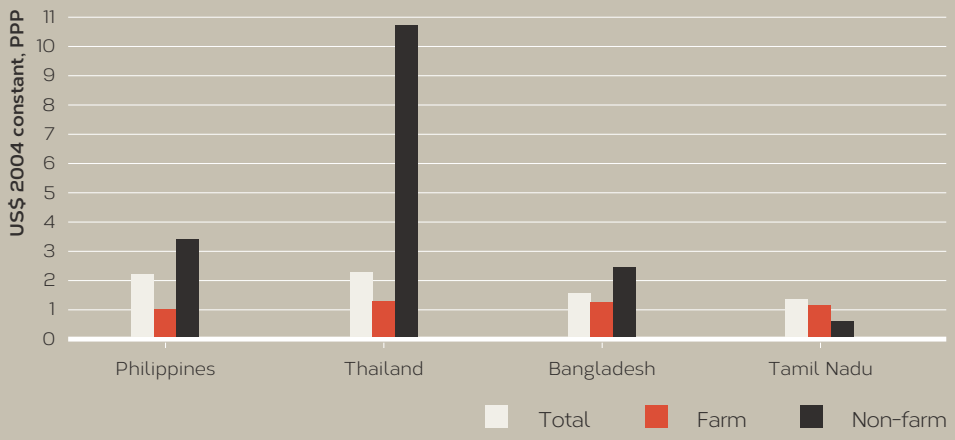


Figure 2.1 (b) | Changes in real household incomes, marginal potential rural areas, 1980s to 2003/04

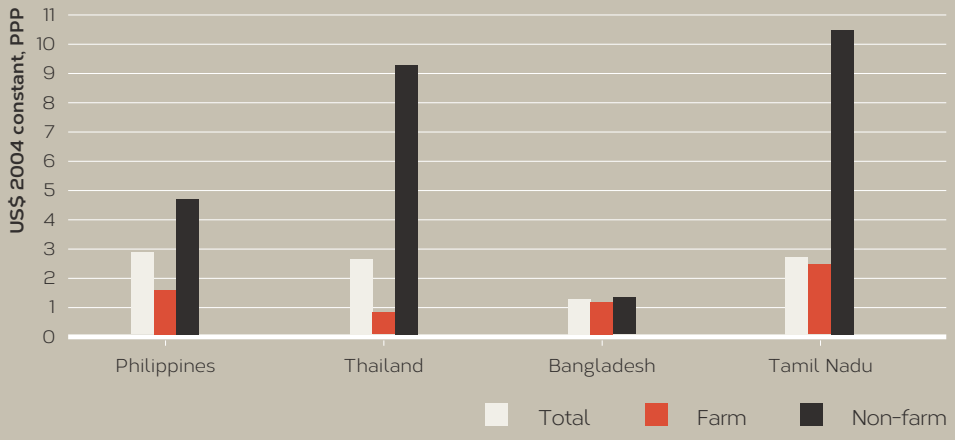
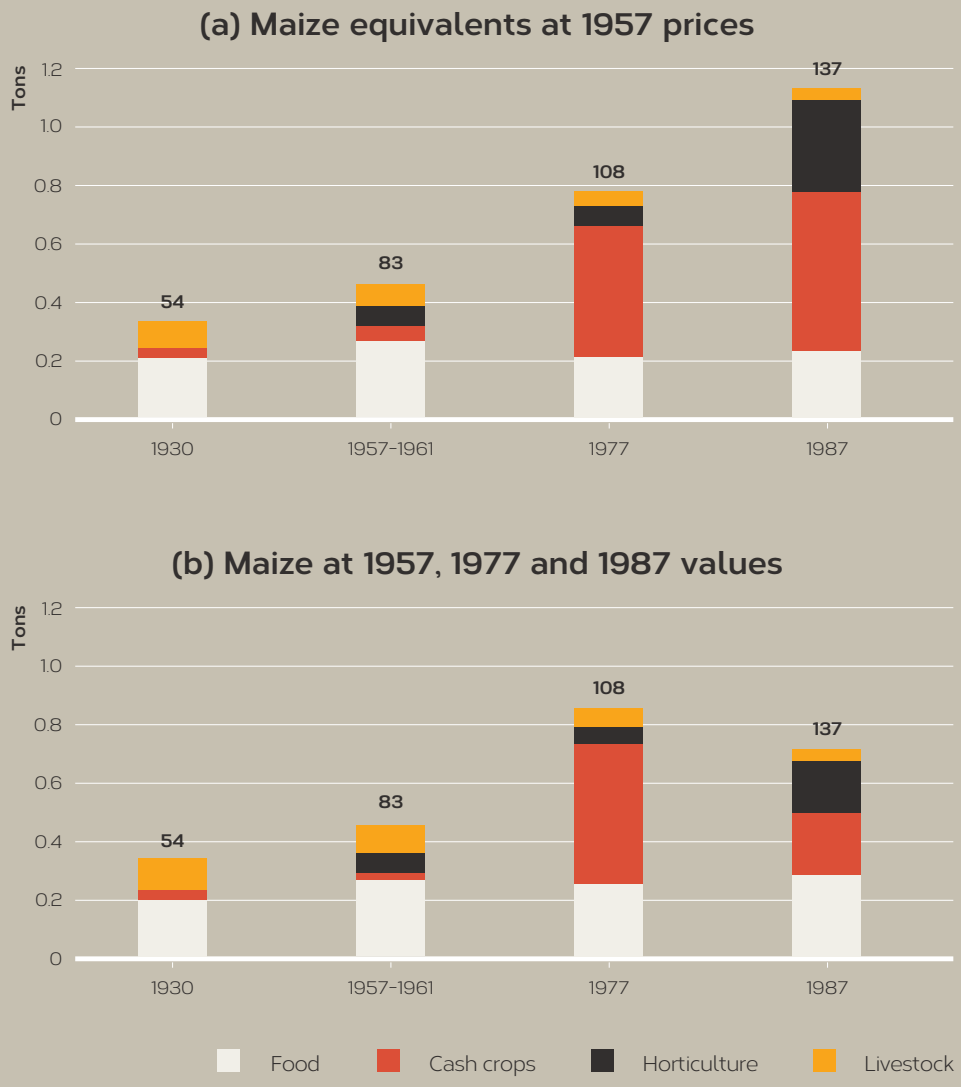


Figure 2.2 | Farm output per person, Machakos, 1930 to 1987

SOURCE: FIGURE 1, TIFFEN AND MORTIMORE 1994



More detailed breakdown of these statistics, moreover, show that income gains were more or less equal across social groups defined by access to land: income gains were broadly shared and not concentrated amongst any landholding class.

Within Africa, an example of what can happen comes from the **central highlands of Kenya.** In response to the Emergency declared in 1952, the colonial government aimed to reduce rural discontent by transforming the small farms of the African reserves – previously seen as being places where the indigenous population could subsist while providing temporary migrant labour for the larger, settler farms. The strategy envisaged in the Swynnerton Plan of 1954 was to encourage small farmers to grow cash crops, above all coffee and tea; the state playing a key role in providing technical assistance, access to inputs and marketing (Bates 1989, Leys 1975).

The Swynnerton Plan largely succeeded: the uptake of commercial crops was widespread, creating major exports of beverages for Kenya while boosting farmer incomes. The northern hills of Machakos were typical of the central highlands where much coffee was planted from the 1950s onwards. Gross margins of coffee were much higher than grains and pulses and incomes rose correspondingly for the farmers planting the new crops (Tiffen et al. 1994). In this area, as indeed over much of Central Province plus Embu and Meru Districts, the introduction of cash crops was accompanied by intensification of food crops, such as maize using higher yielding hybrids, thus sparing the amount of land that had to be planted for home consumption. The first round of commercial enterprises was later followed by others, including intensive small-scale dairying and production of vegetables. Thanks to commercialisation and intensification, farm incomes rose – even at a time when rapid population growth threatened impoverishment as the land was divided into ever smaller plots.

Figure 2.2 shows how farm output, measured in maize equivalents and averaged over the district, rose from 1930, before the introduction of cash cropping, through to 1987. The first part of the diagram (a) values produce at 1957 prices in maize equivalents and thus is effectively a physical production index. The second part (b) shows the effects of changes in the relative returns to different crops: value is still measured in maize equivalents to give a production index, but this time the relative values of different crops to maize are set at 1957, 1977 and 1987 levels. On this reckoning, output per person fell between 1977 and 1987, since coffee prices on world markets fell sharply in the first half of the 1980s – even though there was rising physical output per person.

The success of cash crops was not at the expense of food crops. Indeed, the majority of the land on Machakos – as much as three-quarters – remained planted to maize, beans, peas and other staples. Despite rapid population growth, output of grains and pulses per capita rose from 200kg in 1930 to 250kg by 1987. Net food imports into the district fell.

BENEFITS ACROSS THE RURAL ECONOMY THROUGH LINKAGES

Linkages can multiply and spread the benefits of growth on smallholdings: through rising demand for labour and other inputs on farms; in more jobs downstream of the farm in processing, trading, transport and storage; and, through consumption, in jobs created when small farmers spend additional incomes on locally produced goods and services – including furniture, entertainment, food and drink, and house improvements.

Some crops grown for sale can have high labour requirements, higher than those for staple crops. In Machakos, Kenya, small farms with coffee, fruit and vegetables were typically hiring in the equivalent one full-time worker for each hectare cultivated (Tiffen 1992). More recently in Kenya, the demand for labour in French bean growing has been reported as 1,300 days a hectare a year; for chilli peppers, okra, onions and aubergines 540-690 days; as compared to 175 days for maize and beans (Scheltema 2002). In the Guinea savannah of northern Nigeria in the 1980s maize production for sale boomed, encouraged by urban demand and the spread of improved varieties. Labour demand on fields rose, raising wages and drawing in migrants to the zone (Goldman and Smith 1995).

Farm jobs are usually not well paid, but from the relatively few studies that exist on agricultural wages, they would seem to increase when agricultural output and productivity rise. For example, between 1983 and 2004 farm wages rose by at least 50% in real terms for all but two States of India (Lanjouw and Murgai 2008); a similar, roughly 50% increase was seen in agricultural wages in neighbouring Bangladesh for the same period, linked to rising agricultural productivity (Hossain 2008). In Senegal, those finding work on large farms producing vegetables for export to the EU have higher incomes and less chance of being poor than those similar households not employed on the large farms. (Maertens and Swinnen 2009). Indeed, in this case, it seems that when women are employed on the estates, the chances of their children going to school rise as well (Maertens and Verhofstat 2012).

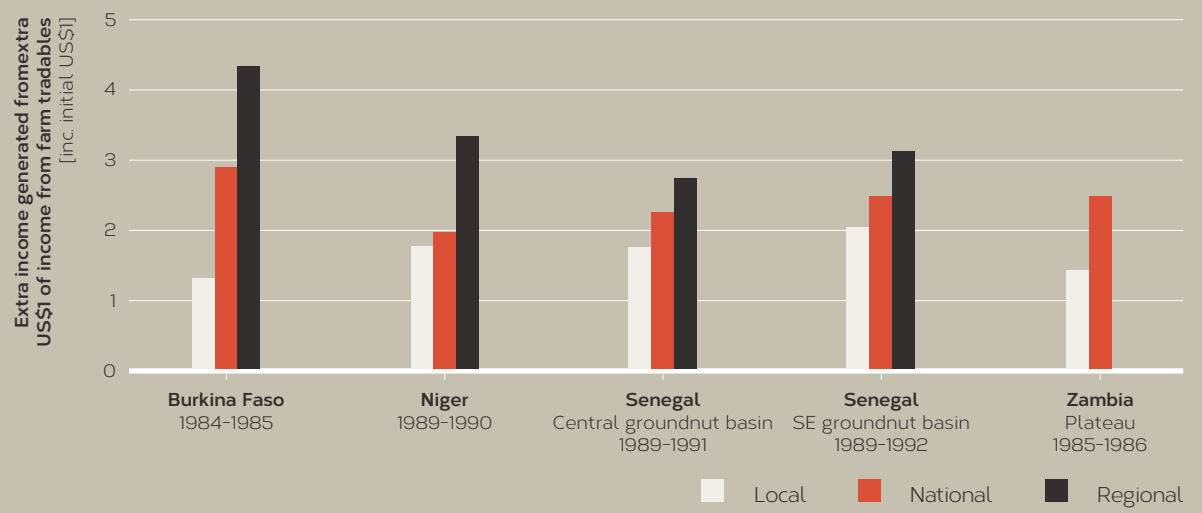
Some estimates of multipliers in rural Africa are high, see Figure 2.3. Most of the effect comes from consumption rather than production. Strong multipliers reflect the high fractions of additional income likely to be spent locally.

Although generally studies show that farmers who have commercialised more have higher incomes than those who have not, surveys often show that the total value of marketed production is quite low.

Look back, for example, at the estimate of farm incomes in Machakos in 1987: these are expressed as maize equivalents per head, in 1957 terms, reporting an average of less than 1.2 tonnes of maize. Hence, for that to lift people out of dollar-a-day poverty the value of the maize would have to be more than US$300. In 1957 maize on the world market was worth around US$400 a tonne, in 2007 dollars.[1] Hence the average household in Machakos would escape extreme poverty, but not by that much, and would fall well short of US$2 a day.

Figure 2.3 | Growth multipliers for rural Africa, mid to late 1980s. Impact of extra income from farm tradables

SOURCE: DELGADO ET AL. 1994
NOTE: DIFFERENT ESTIMATES RELATE TO DEGREE OF TRADABILITY OF MARKETED FARM PRODUCE



In Madagascar in the early 2000s more than 9,000 small farmers were contracted to grow green beans for export to Europe. However, their contracts were limited to plots of just one hundredth of a hectare – although many households had more than one – and the total price paid for the beans off this small plot was just US$20, out of which US$5 had to be paid back for fertiliser, seed and chemicals advanced by the company. On average the contracted households had a net income of US$45 a year from their vegetables (Minten et al. 2011). For very poor farmers this helped them get through the lean season, but it was hardly enough to lift them out of poverty.

In summary, production by smallholders for market can raise the incomes of farmers as well as generating additional incomes for other rural households through linkages in production and above all, in consumption. In some cases, however, the income gains are relatively limited, if welcome, owing to the small-scale of production for market.

Income is one thing: but do these gains come at the cost of household food security?

MARKET ENGAGEMENT AND FOOD SECURITY

A longstanding concern in agricultural development is that the lure of demand for cash crops might lead smallholders to switch their land to these, cut back on production of food for the household, reduce their consumption of food and hence reduce food and nutrition security (Maxwell and Fernando 1989). This might occur through reduced production of food on the farm leading to lower domestic consumption; coupled with failure to spend any incomes from cash crops on food or other items that might contribute to nutrition, such as water and health care; or through increased demands on the labour of caregivers leading to less care of infants, in particular too little time to prepare and serve complementary foods. Even where additional incomes from cash crops might be spent on food crops, this could expose farm households to additional risks from volatile prices that may be high when the food is needed.

How widespread and severe are these potential dangers?

Does producing more cash crops mean cutting back on production of staples for home use? Small farmers rarely specialise in commercial crops: when production for the market increases, this tends to be additional to current farm enterprises so that cash cropping may lead to greater diversity of production, rather than less. In Ethiopia (Sharp et al. 2007) households have diversified their crops and livestock enterprises, rather than expanding a single enterprise. In Kenya, in areas that have grown coffee for export since the 1950s, it was still the case in the 1980s that as little as 10–20% of the land was under coffee, the rest being devoted to diverse food crops, despite the returns to coffee being far higher than those to staples (Haugerud 1988). The same reluctance to depend on markets for staple foods in Machakos District in the late 1980s and early 1990s was also reported by Tiffen (1992).

Aversion to risk probably explains the reluctance to specialise: to higher risks in incomes that could arise from relying on a single crop; and, the risks for consumption if they were to rely on buying in staples were there to be times of shortage and high prices.

Not only are cash crops often additional to food crops, but also growing cash crops may boost staples production. Cash incomes can allow better seed, or fertiliser, to be bought for the staple crop. On contract farming schemes diversion of some of the fertiliser and chemicals supplied to grow the cash crop from them to staples is frequently reported, as seen in northern Ghana where part of the fertiliser supplied by companies for cotton was switched to food crops (Dorward et al. 1998).[2] In other cases, fertiliser applied to an annual cash crop planted in rotation with staples may confer some residual benefits to the staple grown the year after. This has been seen for maize and sorghum after cotton is grown in the Sahel (Bassett 1988), as well as for rice sown on plots previously under green beans in Madagascar (Minten et al. 2011).

Furthermore, given the desire to maintain household self-sufficiency, higher yields from fields of staples have tended to promote cash cropping, sometimes as a pre-condition for this to take place. In Kenya,

the spread of coffee and other cash crops in densely settled central parts of the country was boosted by the introduction of hybrid maize that made it possible to feed the household off a smaller maize plot (Tiffen et al 1994).

Studies that allow comparison of volumes of marketed produce with production of staples by different households commonly report that the two correlate positively, not negatively. For example, in Zambia in the 1980s, surveyed farmers were categorised according to their maize sales into subsistent, emergent or commercial: as the average area of a farm increased, so did the area planted to staples, as did the amount of maize, millet and beans retained by households for their own consumption (Moore and Vaughan 1987). This did not, however, mean that the children of commercial farm households were better nourished, as will shortly be seen.

Surveys carried out since 2008 confirm this for selected villages in Ethiopia, Malawi and Tanzania, see Figure 2.4. By area planted to food crops, farmers were not sacrificing food crops to grow crops for sale. On the contrary, most farmers had one hectare or more sown to food crops: the areas planted to these bore little relation to the degree of commercialisation. Where it was possible to compare farmers participating in a commercialisation to scheme to those not doing so, those commercialising were at the median planting more food crops than those who were not part of the scheme – see the last two sets of columns in Figure 2.4.

Looking at both sets of statistics, it seems that farmers are reluctant to plant less than one hectare[3] of food crops, so that for central Malawi, where farms sizes average 1.6 hectare, almost three-quarters of the farm is sown to food, while in Lume District, Ethiopia where farms are twice as large, the fraction falls to one third – although the area under food crops remains similar.

At a national level, an early review, Maxwell and Fernando (1989), reported that countries that produce more cash crops also tend to produce more food crops as well. That still seems to apply. If the growth of production of cereals in the developing world is compared to the growth of other agricultural produce from 1990 to 2010, the correlation is high: 0.95 for Africa, 0.97 for South America and 0.91 for Asia. There is little to indicate that staple food production trades off against that of other agriculture.[4]

Is additional income from agricultural sales spent on food, health, water and sanitation? The concern is that produce sold by men may then see them spend the money on things other than the basic needs of the household, at worst drinking and gambling away precious funds. The dangers are greatest when incomes from sales come in large lumps, exacerbating the temptation to spend unwisely. The Mumias sugar cane scheme in western Kenya began by paying its contracted smallholder growers an annual sum, but then changed this to smaller, more frequent payments to avoid this danger.

Figure 2.4 | Area sown to food crops, hectare, in Ethiopia, Malawi, Tanzania surveys

SOURCE: SURVEY STATISTICS, WIGGINS ET AL. 2012
NOTE: CI = COMMERCIALISATION INDEX, MEASURED BY VALUE OF SALES TO TOTAL VALUE OF PRODUCTION

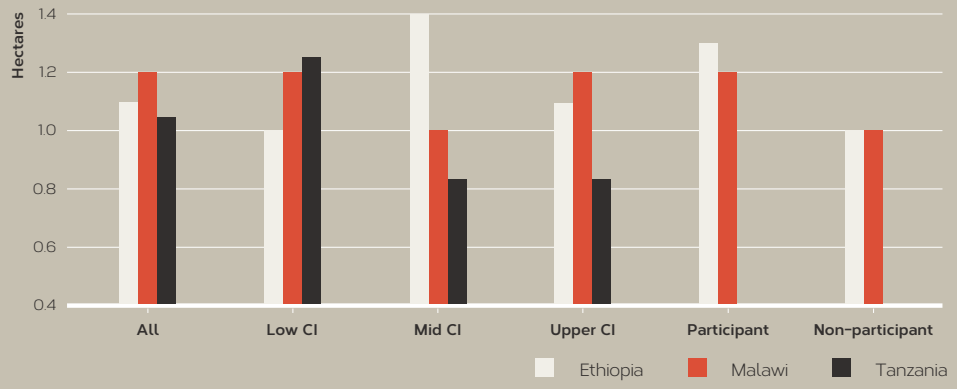


Figure 2.5 | Share of area sown to food crops, Ethiopia and Malawi

SOURCE: SURVEY STATISTICS, WIGGINS ET AL. 2012.
NOTE: CI = COMMERCIALISATION INDEX, MEASURED BY VALUE OF SALES TO TOTAL VALUE OF PRODUCTION

Not much readily available evidence exists on the propensity of commercialised small farmers to spend additional funds on non-essentials. Reports from the 1980s on the marginal spending of small farmers in Burkina Faso, Niger, Senegal and Zambia, however, show that more than half of additional income was likely to be spent on food and drink. More detailed breakdowns for Burkina Faso show that most of the food spending, and more than half of all marginal spending, was on cereals (Delgado et al. 1998). While this is reassuring, the evidence is thin.

Does commercial farming raise workloads to the detriment of child care? Producing commercial crops and livestock on small farms nearly always raises the total amount of labour used. However, that does not necessarily mean that members of the households work longer or harder: hired labour may take the strain, and indeed, the additional income may encourage some households to take some gains by substituting hired hands for their own labour in the fields. If, however, there is additional work by households' members, and if this falls to women, then there are concerns that children may lose out.

This has been a persistent problem in northern Zambia, where women are expected to take care of children, but also to do much of the farming of food gardens; a problem exacerbated in the past by the men migrating to work in the copper mines, so that many households have been headed by females with little male labour to help. In the 1940s it was observed that meals were infrequently prepared, to the detriment of young children who need frequent meals. Maize commercialisation, even with oxen, in the 1970s and 1980s used more female labour. Studies showed increased child malnourishment with commercialisation, despite households having more staples of all kinds. The most likely explanation was lack of female labour to prepare food and especially weaning foods (Moore and Vaughan 1987).

Gillespie and Mason (1991) report studies, mainly from the 1980s, where mothers' work did affect the nutrition of infants in the Philippines, Kerala and south India; but results were qualified by the usually positive impact of additional earnings by mothers. In some cases, it was seasonality that mattered: for example, when demands for planting crops coincided with higher incidence of disease to which infants were particularly vulnerable.

A more recent study from rural Nepal reports that preschool children were less likely to get care from mothers working on cash crops when there was only one child: but when there was more than one child, field work did not detract from child care. Reasons for this surprising outcome included the stronger demand on mothers' time from multiple children, plus the likelihood that mothers with several children would have received more education and training (Paolisso et al. 2001).

The relation between farm work by mothers and child care thus appears neither straightforward nor direct, and may be mediated by a wide range of factors.

Apart from studies of pathways, there are overall assessments of the **impacts of cash cropping on nutrition**. In the late 1980s and early 1990s, the International Food Policy Research Institute (IFPRI) carried out surveys to investigate the links between commercialisation and nutrition in the Gambia, Guatemala, Kenya, the Philippines and Rwanda. This was complemented by reviews from India, Malawi, Papua New Guinea, Sierra Leone and Zambia. The key findings from these studies (see the synthesis by von Braun 1995) were:

- Generally smaller farms participated less in commercialisation schemes, but when they did their degree of participation was often higher than larger farms;
- In most cases, commercialisation increased staple food crop production either by bringing in new land or by increasing yields;
- Generally returns to land and labour under new crops were higher than for the staples;
- Commercialisation usually meant more work in the fields with corresponding increases in the use of hired labour. In some cases it also meant more off-farm work as well. Much of the work on commercial enterprises was carried out by men;
- Income increased in most cases for participants, whilst the demand for hired labour often spread the benefits of increased output. Total household income increased by a much lower percentage than the increase in crop income, given the importance of off-farm earnings for most households; and,
- In almost all cases higher income meant better child nutrition, although the relationship was quite weak. However, there was little evidence, other than for Sierra Leone, of nutrition getting worse under commercialisation.

Thus, commercialisation does not usually impair food security and nutrition; but increased farm incomes usually have only a small effect on nutrition.

These findings were confirmed and qualified by DeWalt's (1993) review of these and similar studies. She concluded that:

First, the income effects of shifts to cash cropping are highly dependent on pricing policy for cash crops. Short term gains seen in some schemes are often highly dependent on the maintenance of high prices for commercial crops.

Second, those schemes in which subsistence production is protected or stabilized are more likely to show positive results with an increase in income generated from cash cropping.

Third, increased income does not translate directly into increased food consumption at either the household or individual (child) level. Shifts in control of income from women to men are important.

Fourth, morbidity, especially from diarrheal disease, is an important predictor of child growth. A failure to improve morbidity of children may offset gains in food consumption and in some instances a decrease in the time women have to care for their children as a result of commercialisation has resulted in greater morbidity among children.

It is thus not whether crops or enterprises are for subsistence or sale that matters, but rather access to land, women's control over produce and income, and prices for cash crops and food.

In summary, more market engagement by smallholders should lead to higher incomes both for those engaging and for others living locally through linkages. Poverty should thus fall, with effects likely to be stronger the more that commercialisation increases the demand for labour on fields and through linkages – and even more if commercialising smallholder households withdraw from seeking work off their own farms. Market engagement should thus lead to more food security, through the income effect in particular; but the link to better nutrition is much weaker, since nutrition depends on care and health as much as it does to access to food. It also depends on how much control over household budgets women have. If commercialisation can be combined with efforts to improve care and health, the effect on nutrition can be strongly positive.

2.2 CURRENT ENGAGEMENT WITH MARKETS

Most small farmers in Africa regularly engage with markets, most frequently as consumers, often buying in food and not just higher-value complementary foods: many smallholders are net buyers of staples as well (Barrett 2008, Jayne et al. 2011). That said their engagement with markets as producers is limited. For example, the fraction selling staple grains in Eastern and Southern Africa is typically between one quarter and one third of smallholders, as indicated by surveys in several countries, see Table 2.1.

Smaller fractions still may be buying in external inputs, such as improved seed, fertiliser and farm chemicals. Fertiliser use in Africa is low, with most estimates reporting an average of 12kg per hectare applied or less, compared to more than 100kg per hectare for other parts of the developing world[5] (Crawford et al. 2006, Minot 2009). Application rates vary considerably by country, by region within countries, and by crop. Statistics on the fraction of farmers using any fertiliser are cited for some farm surveys, but rarely for large areas. Outside some of the higher potential areas where intensive cultivation takes place, such as the central highlands of Kenya, and leaving aside some cash crops, such as cotton where there are well established means to distribute fertiliser, it can be reasonably confidently said that the majority of smallholders use very little, if any, manufactured fertiliser.

Table 2.1 | Staple foodgrains market participation in Eastern and Southern Africa

SOURCE: TABLE 1 FROM BARRETT 2008

COUNTRY	CROP	YEAR	% SELLERS (G=GROSS, N=NET)	STUDY
Ethiopia	Maize and teff	1996	25 n	Jayne et al. (2006)
	Barley	1999	10 g	Levinsohn and Macmillan (forthcoming)
	Maize	2000	23 g	(rural households only)
	Sorghum		11 g	
	Teff		20 g	
	Wheat		12 g	
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)
Madagascar	Rice	1990	32 g	Barrett and Dorosh (1996)
		2001	25 n	Renkow et al. (2004)
				Jayne et al. (2006)
Mozambique	Basic food	1996-1997	14 g	Heltberg and Tarp (2002)
	Maize	2001-2002	30 g	Boughton et al. (2007)
	Maize	2005	16 g	Tschirley and Abdula (2007)
	Rice	2002	43 n	
Rwanda	Beans	1986-1987	22 n	Weber et al. (1988)
	Sorghum		24 n	
Somalia	Maize	1986-1987	39 n	Weber et al. (1988)
Tanzania	Food	2003	33 n	Sarris et al. (2006)
Zambia	Maize	2000	26 n	Jayne et al. (2006)
Zimbabwe	Maize	1984-1985	45 n	Weber et al. (1988)
	Grains	1996	27 g	Govereh and Jayne (2003)

Even less engagement takes place with financial services. Farm surveys often report less than one in ten small-scale farmers getting a formal loan from a bank or other financial agency.[6] (Jessop et al. 2012) It is rare for farm households to be able to insure formally through an insurance policy against the risks in farming, or more generally.

COMPETING EXPLANATIONS

Markets potentially offer small farmers the opportunity to specialise in production and realise the gains from comparative advantages that they may have in production. They are also the source for many external inputs that embody technical advances that can increase productivity. So why are many smallholders so little engaged in markets? At least four sets of factors may explain this.

Technology, knowledge, underlying economics and transport costs. The first set of possibilities is that it simply does not make technical or economic sense to engage more with markets. Technical packages for farmers developed by research systems may not be as appropriate to field conditions as agronomists believe based on research stations plots. Compared to what was seen under controlled trials, in the fields yields may be lower, vulnerability to pests and diseases greater, labour demands higher, and food produced from improved varieties may be less tasty, less easy to process, cook and store than existing varieties. (Anderson 1992)

In some cases innovations may not be known, or taken as credible, by most farmers. While farmers sometimes learn from successful neighbours about techniques, as seen for pineapples in southern Ghana (Conley and Udry 2010), in other cases, such as maize in western Kenya, no such learning from neighbours was observed (Duflo, Kremer and Robinson 2008).

Low use of external inputs may simply reflect the underlying economics of particular farming systems. For example, in areas with low population density soil fertility can be maintained through fallowing at low cost, rather than by applying mineral fertilisers (Boserup 1964, Ruthenberg 1980). Mechanisation may not fit the farming system (Pingali et al 1987).

High transport costs can change the ratio of benefits to costs at the farm gate: high unit costs raise the cost of inputs and depress the value of outputs when considered at the farm-gate. Transport costs in some parts of Africa are notably higher than in other comparable areas of the world (Livingston et al. 2011), in part owing to cartels amongst transport operators and informal costs of passing through border controls and internal barriers along highways.[7]

Economic instability, risk and insecure property rights. A second explanation is that the conditions for investing and innovating are not stable enough (Jayne et al. 2002): that frequent shifts in government policy

on matters such as trade, storage and movement of grains, and price controls deters investment. Poorly-managed macro-economies may mean inflation or sudden strong shifts in exchange rates that make it difficult to plan for business. In some cases fears of expropriation may be plausible: these may not apply to smallholders, but may affect private firms, especially when foreign-owned, contemplating investments in supply chains that engage smallholders.

Risks may also be a deterrent to buying inputs: if crops fail owing to bad weather, the additional loss of scarce cash spent on inputs may be too high to bear. Seldom do smallholders have access to formal insurance against these risks. Risk aversion, with limited informal insurance – Kazianga and Udry (1996) were surprised how little was available in villages in Burkina Faso – can lead to profitable options being foregone. Drought-resistant crops may be sown in place of crops with returns that have higher means but higher variance; or else farmers are reluctant to spend on inputs such as improved seed and fertiliser that would be lost in the event of a drought. For example, Dercon and Christiaensen (2011) found that farmers across Ethiopia restricted their use of fertiliser on account of the risk of low food consumption in the event of poor weather.

Insecure property rights could deter investment since farmers cannot be sure of a return on their spending, or because absence of formal title prevents land being pledged as collateral against bank loans. The large literature on security of tenure in rural Africa produces contrasting reports of the degree of security and its impact on innovation and investment. Some see little relation: for example, Besley 1995 on Ghana; Brasselle, Gaspart and Platteau 2002 on Burkina Faso; and Place and Otsuka (2002) on Uganda. In contrast Goldstein and Udry (2008) report under-use of fallowing in southern Ghana owing to fears that rights to land not actively farmed may be lost; while farmers in Uganda have invested more on the plots they own compared to those for which they have only the right to occupy (Deininger and Ali 2008). Given the subtle gradations in land rights under collective and longstanding arrangements and the implied degree of security, it is perhaps not surprising that differing outcomes should be observed in different locations and times.

Failures in markets arising from high costs of information. Markets work best when participants have ready access to information on prices, volumes and characteristics of products, and about other participants. In reality, getting this information can be difficult and costly. Costs, called 'transaction costs', include those incurred in gaining information prior to making deals, in negotiating contracts and in monitoring and policing the implementation of contracts. While they can be minimal when standard goods are traded in spot markets, they can be substantial when transactions are deferred in time, the attributes of produce can be difficult to inspect, and when those trading lack information. (See Douma and Schreuder 1998, North 1989, Williamson 1996 for the theory).

These conditions, however, often apply for finance and inputs, and sometimes for marketed output. Bankers offering farm credit, a deferred transaction, need to know both the competence and the character of

farmers. When the latter are smallholders without bank accounts or a credit record, finding this out can be costly. Banks typically pass on these costs to smallholders, by demanding references and documentation that either cannot be met or else only at high costs to the potential borrower.[8] Similarly, for a rural trader, selling improved seed means stocking a product for which demand is hard to judge, while for farmers the key characteristics of the seed – germination percentage and performance in their fields – are largely unknown, at least for the first time they consider buying. Overcoming the ignorance of dealers about the farmers, and the latter about the seed, is costly. Similar information problems apply when buyers of produce want 'credence characteristics' such as assurance on methods of production – for example, care in use of pesticides, no use of child labour, etc. – that cannot be observed by inspecting the produce.

High transactions costs mean that fewer inputs are bought, less credit offered and less produce marketed than would be indicated by the underlying economics.[9] Moreover, as Omamo (2003) proposes, the conditions tend then to lock in: when inputs are costly and few are sold, then input dealers cannot generate economies of scale; when little credit is on offer, credit histories are not created; so that information remains costly, transaction costs are high, and investments are correspondingly depressed.

Some see these failures as so severe as to constitute poverty traps: if small farmers are too poor to afford to buy inputs needed to increase their production, and cannot obtain credit to overcome their lack of liquidity, then they cannot raise production and remain poor, even when the technical means to produce more are known (Sachs et al. 2004, Chronic Poverty Research Centre (CPRC) 2008).

A further potential problem from lack of information arises with some investments in agricultural supply chains. Processors, wholesalers and retailers will only invest in processing plants and storage if they can be sure they can obtain supplies from farmers: farmers will only produce surpluses if they can be sure that these will be bought – with both parties needing additional reassurance that prices will not turn against them as one side or the other uses market power to extract a rent. Such assurances can be difficult to create when would-be investors know little about farmers, and when the farmers for their part know little about the potential investors. These co-ordination failures could thus significantly depress investment in agricultural supply chains. (Kydd 2002, Poulton et al. 2006)

Some studies have tried to estimate just how large transactions costs may be. An exception is Renkow et al. (2001) who estimate that for Kenyan maize farmers, transactions costs may be equivalent to a 28% tax on prices. Transactions costs rise with distance from markets, from 19% at one kilometre from a principal market to 58% at 48 kilometres distance. In Peru, Escobal (1999) estimated these costs as depressing prices by 36% and sales by 13% for potato farmers.

Perhaps the single most detailed exploration of these market failures appears in Dorward, Kydd and Poulton (1998) who report cases of cotton growers in northern Ghana and Sindh, Pakistan, and of cashew farmers

from southern Tanzania. These cases present compelling accounts of the ways in which high costs of information can lead to under-investment in otherwise profitable opportunities. In the case of Sindh, the example shows that when trust can be developed, and informal institutions can regulate behaviour, these costs can fall to the benefit of all concerned.

Monopoly power in rural markets. It is frequently alleged that local traders, input dealers and informal lenders have the power to extract rents (unearned profits) by charging higher prices owing to lack of competition in the market. Barrett (2008), for example, reviewing the participation of small farmers in markets in eastern and southern Africa found several reports of imperfect competition, including amongst traders in rice in Madagascar and in grains in Ethiopia. The latter study reported that farmer prices were thereby just 3% below what might be expected: so this is hardly a case of hard gouging.

Whether traders have the power to set prices depends in large part on them having a local monopoly. Barrett (2008) reports that in Madagascar farmers have not had much choice of trader to sell to:

> Thus, Bernier and Dorosh (1993) found that only 29% of rice farmers in Madagascar had access to more than one crop buyer and outside the central highlands – home to the nation's best infrastructure – that figure fell to only 6%. Barrett (1997) similarly finds that in spite of massive entry into low entry cost niches of food marketing channels post-liberalization in Madagascar, high entry costs into wholesaling, interregional transport and interseasonal crop storage sharply limit competition and boost intermediary profits in those functions.

In marked contrast, others cite more recent evidence of many traders looking for produce in East Africa:

> Recent large-scale survey evidence and farmer focus group discussions from the region (Kenya, Zambia, Malawi, Mozambique) reveals that even in the most inaccessible areas, smallholders cite numerous traders visiting their villages during the 4-5 months after harvest to buy surplus grain. (Jayne et al. 2011)

Evidence of the exercise of monopoly power is, however, surprisingly limited. Barrett (2008) admits that widespread imperfect competition is a 'hypothesis subjected to surprisingly little empirical testing in rural Africa'. Those who see intermediaries as exploiting their position typically cite large margins between prices paid to farmers and retail prices charged to consumers. Such differences are easy to see, but the costs of marketing are less visible; costs that arise in transport, storage, credit and payment of taxes formal and informal (bribes) when moving produce. Moreover, risks that traders run when information is scarce can be underestimated: few notice when a trader makes a long but wasted journey to find produce that is not there, or when the (uncertain) price received in the central market turns out to be less than that paid in the village. Hence, the relatively few studies of margins in marketing chains sometimes report surprisingly competitive outcomes, with margins net of costs offering a modest return on working capital.

BOX 2.1 KENYA TEA DEVELOPMENT AUTHORITY: AN UNUSUALLY SUCCESSFUL PARASTATAL

The Kenya Tea Development Authority (KTDA) was established in 1964 as a parastatal responsible for fostering small-scale tea growers. It was fully liberalised in 2002, becoming a private company owned wholly and exclusively by smallholders. KTDA farmers produce the lions' share of Kenyan tea: in 2002 they farmed 71% of Kenya's tea growing area.

KTDA provides farmers with key links: helping them with credit; access to better technology, such as changing propagation from seedlings to substantially lower-cost cuttings; implementing more labour-intensive quality requirements, such as harvesting two leaves and a bud as opposed to four leaves which helped position Kenyan tea as high-quality; and ensuring a regular cash flow for members.

Kenyan tea production increased from some 20,000 tonnes in 1964 to 400,000 tonnes in the 2000s, while average yields grew from one tonne per hectare in the mid-1970s to over two tonnes from the mid-1990s. From 1961 to 2009 exports grew at an annual average rate of 6.4%, so that by the mid-1990s Kenya became the world's largest tea exporter.

Smallholder farmer representation on the KTDA board from early on was key to its success. Nonetheless, inclusion of the smallest farmers was only ensured by defying the original rules, as the Authority first argued that farmers with less than 0.8 hectare were too poor to be helped. Some small growers planted tea illegally, or relied on friends and relatives to buy plants on credit, aided by KTDA field officers who did not enforce the rules. By the 1970s, more illegal than legal farmers existed so KTDA granted an amnesty and re-absorbed the smallest farmers.

Twenty years later, the government ensured that privatisation of KTDA would benefit smallholders. Instead of allowing a competitive bidding process or publicly floating shares, as in previous privatisations of state-owned enterprises, the government restricted sale of KTDA shares to smallholder tea growers only.

KTDA has been a considerable success, first as a public company, and now a farmer-owned entity. Protected against political interference, the early director of the KTDA was able to keep a sharp focus on technical competence. It helped that Kenya has excellent conditions for tea, but devising an organisation to co-ordinate the production and processing of a demanding crop has been no mean feat.

SOURCE: SEE APPENDIX C FOR MORE DETAILS AND SOURCES

For example, net margins earned by traders in Benin and Madagascar were estimated at medians of 8% and 11% respectively by Fafchamps et al. (2003).

In a large continent, it is likely that each of these four possible explanations accounts for some of the low market involvement by smallholders at some place and time, to varying degrees and combinations. It is however, disconcerting to find such a range of explanations, with no clear way to assess the strengths and prevalence of the different problems, since the indicated policy responses are rather different. On the other hand, there are probably complementarities and synergies amongst measures to deal with these different potential problems.

Finding ways to correct market failures, however, divides opinion. On the one hand are those who recommend that governments intervene in rural markets to provide inputs, finance and marketing directly to overcome the difficulties in private provision. This was the logic that underpinned the old marketing boards and public enterprises that were common in Africa before the era of structural adjustment and liberalisation. Those boards typically supplied farmers with inputs on credit, gave technical advice and then bought up crops after harvest at a guaranteed price. However, they were often inefficient and costly, sometimes corrupt, running up very large overdrafts with the central banks. They came under the spotlight when structural adjustment programmes were designed: given their costs, many were abolished, privatised, or had their remits severely trimmed. There were exceptions, of which the Kenya Tea Development Authority (KTDA) is the most notable in being run effectively and efficiently, stimulating production from smallholders, and presiding over a remarkable growth in Kenya's tea industry – see Box 2.1.

Others, alarmed that a return to direct state action might lead to the problems seen before, look to private and collective innovations in institutional arrangements to mitigate these problems – through devices such as contract farming and farmer associations. The discussion now turns to these attempts to forge new arrangements, to innovate institutionally.

2.3 IMPROVING THE FUNCTIONING OF RURAL MARKETS THROUGH INNOVATIVE INSTITUTIONS

Studies of institutional innovations can be divided into two groups: those that examine the functioning of specific innovations, such as contract farming, farmer cooperatives and certification; and those that evaluate particular experiences to improve the functioning of supply and value-chains where one or more institutional innovation may apply. Here we begin with the specific elements, then move to the assessments of cases.

SPECIFIC FORMS OF LINKAGE

Enterprises in supply chains can coordinate their activities in various ways. An early insight came from Coase (1937, cited in Douma and Schreuder 1998) who looked at the transaction costs in discovering prices and arriving at contracts. When these costs are high, he argued, markets may not be the best way to coordinate activity, but instead it may be better to coordinate activity by forming single, hierarchical organisations where commands replace market transactions. This insight was subsequently developed by Oliver Williamson (1975 and 1985, cited in Douma and Schreuder 1998, and Williamson 1996) who recognised that decisions will never be informed by perfect information ('bounded rationality') and that opportunism ('moral hazard') can be a threat in transactions when one party has more information than the other ('asymmetric information'). He identified three dimensions that affect transactions: asset

specificity, that is whether one party has invested in physical or human assets that have no alternative use in another activity – for example, a cotton gin; the degree of uncertainty or risk that applies in production and markets; and, the frequency of transactions. Depending on the conformations of these three dimensions, the most effective form of link would lie along a spectrum from spot deals at one end through forms of contracting and interlinked deals to vertically integrated operations at the other end. Running from the most to least flexible arrangements, these would comprise:

- Spot market deals, one-off transactions in markets;
- Repeated deals in markets, between people who regularly trade with one another, with tacit understanding that there would be future transactions;
- Contracts from buyers to suppliers to deliver a specified product and quantity for an agreed price in advance;
- Interlinked contracts where in addition to agreement on sales, the buyer also supplies inputs, finance, technical assistance in advance to the supplier on the promise of sales with costs of these deducted from payment; and,
- Vertically-integrated operations, such as when a processor operates a plantation directly growing the produce for processing.

Of these, the arrangement that has attracted most attention is contract farming, and especially the second form, where contracts in produce are linked to deals in inputs and other services. It is easy to see why: if rural markets offer smallholders only limited amounts of inputs, finance and technical assistance, and often at high prices, then arrangements that remedy the often severe shortages of finance and inputs can potentially be most valuable.

Interlinked deals are seen in other arrangements, most notably share-cropping where landlords advance inputs to tenants in return for a share of the harvest. In the 1960s and 1970s, share-cropping was often seen as an inefficient arrangement since tenants working the land would tend to under-invest in inputs if they did not get the full harvest as a reward. However, that judgment was reassessed in the light of market imperfections, by which the tenants would not otherwise get access to working capital, and might additionally find the risks of investing in inputs when harvests vary too heavy to bear. (Bardhan 1989)

CONTRACT FARMING

To illustrate the possibilities of contracting, here are two examples. In **Madagascar**, Lecofruit exports mainly hand-picked French beans to Europe, mostly processed in jars. It obtains the beans from more than 9,000 small-scale vegetable farmers. The company advances seed, fertiliser and pesticide to farmers, and employs

an extension agent for every 25 to 30 growers to help them meet the high quality standards and food safety requirements demanded by European supermarkets.

Contracted farmers tend to be better educated than the average Malagasy household, having often completed primary schooling, but they are otherwise small farmers with a hectare or less of land. Each contract is restricted to one hundredth of a hectare, but given relatively short production cycles there can be several on the same plot over the course of the year, while different household members may have their own contracts. Even so, it is rare for households to have more than five hundredths of a hectare planted to green beans.

The scheme benefits the households by increasing incomes, as well as making them more reliable, so that participating households face a shorter lean season. (Minten et al. 2011)

In **Senegal**, since 1990 a private firm contracts 32,000 farmers to produce confectionary peanuts (*Arachide de Bouche*) most of which are exported, mainly to the European Union (EU). The company provides contracted growers with seeds, fertiliser and agro-chemicals for one hectare plots, and closely supervises farmer performance through extension agents.

Contracting farmers' incomes significantly increased, not only raising the standard of living of growers, but also creating additional jobs in the local economy through multipliers. It seems that farmers were selected on merit for the scheme, with no bias towards the larger farmers in the villages (Warning and Key 2002).

These and other reviews (see Barrett et al. 2012, Oya 2012, Prowse 2012) suggest that successful contracting depends on:

- There being a good business opportunity that allows processors to make money while being able to pay farmers an attractive price. The opportunity, of course, needs to be one that neither party could easily seize without the participation of the other;
- Both parties are committed to the contract. It helps if farmers cannot sell on the side and thereby avoid repayment of input costs. For contracting processors or traders, it helps if supplies from smallholders are essential to their business: if they can get supplies from large farms or the spot market, there may be temptations to default when the market prices falls well below the contracted price – even if inputs have been advanced to contracted farmers. That leads to the next point;
- When contracts include a guaranteed or fixed price for the produce, it helps if the market is reasonably stable and the promised price is in line with the spot market. If the agreed price is a long way from that on offer in the market at time of produce delivery, either farmers or processors may be tempted to default. The existence of a signed agreement often counts for little in such cases: taking the defaulting party to arbitration or court is often costly, with little chance of getting commensurate compensation.

In the right circumstances, then, contracting can work well for both parties. Yet it seems that most smallholders in Africa are neither part of such schemes, nor have they had the chance to join one. However, if contracts can resolve the pervasive issues of lack of access to inputs, working capital, technology and marketing, then why are there not more schemes? The answer presumably lies in the quite demanding conditions for successful contracting: they tend to apply only when a processor has some monopsony power, that derives either from the crop needing processing that is beyond the means of farmers and most businesses as well – think of a typical sugar mill, where there is a high threshold for reaching the scale necessary for volume economies; or from know-how in marketing that allows the contractor to access a premium market.

In many cases, crops and products can be processed and marketed on small-scale by all and sundry, so processors rarely have a monopsony, and can in any case get the supplies they need from farmers in spot markets. After all, for the processors, there is no point in setting up a contract if business can be done without this.

However, we know too little about contracting, above all the dynamics of contracting, since so many studies are snapshots in time. Moreover, the cases that are documented are not random samples, since selection bias applies: the schemes that are documented are almost inevitably those that survive, with failed schemes being unobservable and usually undocumented. Further biases apply when looking at the impacts on farmers, since contracting firms tend to pick out the more favoured areas and the better resourced farmers within them. These farms and locations would probably be doing well whether or not a contract scheme operated (Barrett et al. 2012, Prowse 2012).

FARMER ASSOCIATIONS AND COOPERATIVES

If transactions costs are high for individual smallholders when dealing with other actors in supply and value-chains, then forming groups of farmers so they can aggregate sales, input purchase, loans and technical assistance might be one response. Not only do these promise to economise on transactions costs, but also they should give the group greater bargaining power, especially when facing those with monopoly power. They can also be a means by which farmers make their voice heard within policy-making.

Promise aside, experiences of farmer associations and cooperatives have been mixed. Too often, they have failed owing to the lack of competence or honesty of their managers, often in collusion with leaders of the cooperatives. Some cooperatives have largely become vehicles for the political ambitions of their leaders, with services to members being neglected.

Political considerations aside, theories about cooperatives can be useful to understand the conditions under which they may be successful. Johnston and Clark (1982) set out a simple benefit and cost framework. This states

that cooperatives will only function if cooperation delivers benefits that could not be gained by individual effort alone (Curtis 1991); and if the (transactions) costs of cooperation are commensurately smaller than the expected gains. Costs of cooperation rise when membership is wide and diverse, when the aims of collective action multiply, and when it is difficult for members to appreciate how much others contribute to and receive from the cooperative. This helps explain the failures of many cooperatives set up in rural Africa in the 1960s and 1970s. They often had broad membership with everyone in the community registered, had multiple goals including not just production but also welfare provisions, resulting in complicated administration that made the cooperatives hard to manage, while members found it difficult to appreciate the contributions and rewards of other members.[10]

A recent review of farmer collective action in Africa (Shiferaw et al. 2011) confirms these ideas, success being found when:

> '... farmers can manage them autonomously with minimal government interference; farmers participate actively in decision-making at every stage of the process; and their cooperative activities are profitable'.

Good practice observed includes serving higher value markets where smallholders do not compete with large farms, providing benefits that members value and that cannot be obtained without belonging, setting clear procedures, and using professional management, but without inflating costs unduly. They warn against farmer organisations replacing private enterprise, instead arguing that collective action should include those activities for which the association has competitive advantages, then beyond those, link to private firms.

Process matters as well: they cite Chirwa et al. (2005) in proposing that:

> '... producer groups exercise caution in the process – first, building business skills and learning to be effective, second, being efficient and profitable, and third, learning to expand the scale and scope of their enterprise to exploit economies of scale.'

Others similarly counsel against over-burdening young organisations with too many functions, or exacting functions; while building capacity from local structures rather than by imposing models (Biénabe and Sautier 2005, Best et al. 2005).

REVIEWS AND EVALUATIONS OF PROGRAMMES TO LINK FARMERS TO MARKETS

In the last five years or so, there has been a surge in interest in the possibilities of improving the links of smallholders to markets across the developing world, and in Africa in particular. Ever since structural adjustment and liberalisation in the 1980s and 1990s saw the state retreat from active engagement in markets, some donors – the United States Agency for International Development (USAID) being prominent – and NGOs have actively tried to stimulate and support both farmers and the institutional arrangements that have emerged.

At the same time, private interests in developing better links to smallholders have been stimulated by the rapid increase in shares of food sales through supermarkets in some developing countries. For Latin America, East and Southeast Asia estimates show supermarkets selling half or more of all food sold, up from negligible shares in the early 1990s (Reardon et al. 2009, Traill 2006). This advance may be less prominent in Africa, but nevertheless supermarket chains are emerging as significant suppliers of food to urban middle classes.

A further inspiration has been the possibility of exporting to high value and premium markets in Europe and North America. This includes not only air-freighted fruit, flowers and vegetables, but also the emerging markets for food certified as organic or fairly traded. The premium prices paid for these products have prompted efforts to source them from smallholders.

The spike in prices of cereals on world markets in 2007–08 has added interest in the supply of food and the potential of smallholders to supply more. Those groups who were studying links before the spike have been all the more stimulated to publish their findings.

While only some of the experience of governments, donors, NGOs and private companies to link to smallholders has been documented in any detail or depth, more than a dozen significant reviews[11] of these efforts have been published in the last five years, many of them since 2010. Most of these studies review a limited number of cases – rarely more than twenty – of linking smallholders to a particular market, typically analysing them by a value-chains approach.[12] They usually study the scope and conditions for small farmers to participate in supply chains that pay premium prices, which farmers are able to participate, and what benefits they obtain. Many have a practical objective: they aim to find practical lessons and policy implications from their analyses.

The overall lessons from these studies are remarkably similar on many points, with the following six being prominent:

1. **Export markets, especially those for high value and niche products, are options limited to only some smallholders, they may be excessively demanding for many farmers and they may be risky as well.**

   > For the small farmers, the major risk component in the family farming activities (illness, pest and diseases, drought), managed by existing systems based on farmers' social networks are not adequate to face supplementary marketing risks (shift in supply and demand, product perishability, length of supply chain, process complexity, uncertainty in governmental policy making and practice). (Biénabe et al. 2004)

   Hence look first and foremost to the domestic and regional markets that are large, expanding, probably more stable and less demanding for the characteristics of produce delivered.

Some reviews criticise (some) donors for having focused too much on the high-value export markets, arguing that the cost of certification has often been too high, and the risks involved are too high. (Jaffee et al. 2011). Supermarkets will source their supplies from small farmers, but only when they cannot get supplies from larger farms, sometimes when farmers have invested in essential assets such as cooling tanks for milk, and often when farmers are organised in groups.

One very recent study (Vorley et al. 2012) argues that for the vast majority of smallholders in the developing world, their links to markets are informal. The authors worry that too much attention to the new and more sophisticated chains of exporters and processors will causes policy-makers to lose sight of the importance of informality and the fate of smallholders who depend on those links.

2. **Focus on business aims** of realising returns to investments, whether on farms or in the supply chains. Beware of other aims or instruments that may detract from this, above all social objectives of including poor farmers in some of the more demanding linkages observed. Successful links can be made to smallholders, but not necessarily to the very poorest of them.

3. **Small-scale farmers usually need to be grouped** when dealing with processors, traders and exporters, to overcome the high costs of transacting with atomised producers. The costs of cooperation are real, however, while the ability of farmers – at least initially – to organise and manage collective efforts are usually limited. There may well be trade-offs between forming groups that function effectively since members are reasonably homogeneous and have the resources to co-operate; versus trying to include some of the poorer and more vulnerable members of the community. One way of making such groups more inclusive may be allowing some members to participate to a lesser degree than others, but with fewer rights. This, of course, breaks with longstanding principles of cooperatives, whereby all members are equal.

> The least successful types of organization are those that were imposed from outside and based upon donor-driven criteria (for example, size, organizational rules, membership rules) which do not resonate locally, have limited internal capacity and very broad and ill-defined objectives. More successful results were observed from horizontal organizations which have strict entry requirements and were created by local entrepreneurs to address a specific need. (Mitchell and Coles 2011)

4. While producer organisations can reduce transactions costs and give farmers power when interacting with large firms in the supply chain, **beware of trying to replace existing private sector functions** by collective action – unless, of course, it is clear that the replaced functions are ineffective, inefficient or grossly unfair. Tempting as it may be to assume that cooperation can give farmers better services, higher prices for outputs and cheaper inputs, the reality is that they often cannot, since the private operators are currently often working reasonably well given the circumstances.

5. Supply chains may be more effective and efficient when some agency acts as a **champion**, taking the initiative in brokering new arrangements, overseeing changes and resolving problems. This is often a dominant processor, wholesaler or exporter with some degree of market power; but it may be an NGO, government body or donor project. Champions often take risks and invest in new arrangements: private sector firms will usually only do this if there is some commensurate reward for the effort, so this will usually only occur when there is a business opportunity. Champions, of course, have some market power, so the challenge is to create conditions that will encourage such initiative, but without allowing champions to extract undue rents. In discussing this, Webber and Labaste (2011) argue for markets that are contestable: that is, right now there may be little competition in a market, but there is a credible threat of competitors entering the market that provides a discipline for current participants.

6. The final common theme is perhaps the single strongest refrain in these studies: the **importance of process in building links,** rather than imposing blueprints. For all the cases that are reviewed in these studies with their varying arrangements for linking small farmers to supply chains and markets, there is a striking absence of detailed discussion of these arrangements. More is usually said about the ways in which the arrangement has been developed and what allows it to function. Instead, these studies stress the importance of taking time to build links, to be flexible, and to build up local competences – and, correspondingly, not to impose models. Whatever arrangements are being developed, those engaged have to build trust between smallholders and others in the chain; and have to develop their competences as the arrangements develop.

This, in turn, implies that outside agencies, and especially those in the public sector, need to take care not to push for too much change too quickly, whatever the temptations of targets and the need to disburse budgets.

CHAPTER 2 ENDNOTES

1. Prices for 1957 converted to their value in 2007 dollars.
2. In some contract farming schemes the use of inputs supplied is supervised to discourage diversion. In other cases the contracting companies have recognised farmers' needs and preferences and provided inputs for food crops in addition to the contracted crops, as seen in contracting of tobacco production in Malawi in the late 2000s (Prowse, personal communication).
3. This makes sense: grain yields are typically 1 tonne per hectare, so that one hectare plot would produce enough to provision a family of 5 adult equivalents consuming 200kg of cereals a year.
4. In some contract farming schemes, processors limit the area contracted by farmers so as to ensure that commercial production does not displace production for home consumption.
5. In 2006, it was estimated that 173kg of fertiliser was applied on average to each hectare of temporary and permanent cropland. In Asia the average rate was 222kg per hectare; while in South America and the Middle East and North Africa, the rate was in the range from 131–138kg per hectare. Hernández and Torero 2011, quoting statistics from the World Resources Institute.
6. It is however striking that there appear to be few statistics on the proportion of farmers in Africa who have received a formal financial loan.
7. Gollin and Rogerson 2010 argue that high rural transport costs can limit productivity on farms in Uganda. All-weather roads in rural Ethiopia would reduce poverty by almost 7 percentage points and raise consumption by more than 16 percentage points, according to estimates by Dercon et al. (2009).
8. It may be coincidence, but the New Institutional Economics that expects high transactions costs, came to prominence shortly after more than a decade of research from the 'Ohio School' on rural credit drew attention to the costs of information as an explanation for failing credit markets (see von Pischke et al. 1983).
9. In effect, high transaction costs effectively push supply and demand curves upwards, so the market equilibrium is a higher price, or less traded, or a combination of these.
10. Studies of informal collective action tend to arrive at similar insights, stressing the importance of collectives having a tight focus on collective benefits, and using transparent means for taking decisions (see Wade 1987 on village institutions in southern India).
11. Biénabe et al. 2004; Biénabe, Berdegué and Peppelenbos 2011; Campbell 2010; Haggblade, et al. 2012; Jaffee, Henson and Díaz Ríos 2011; Maatman 2011; Mitchell and Coles 2011; Shepherd 2007; Vermeulen and Cotula 2010; Vorley, del Pozo V. and Barnett 2012; Vorley, Lundy and McGregor 2008; Vorley and Proctor 2008; Webber and Labaste 2010; Woodhill, Guijt, Wegner and Sopov 2012
12. Haggblade et al. (2012) see value-chain approaches as being an accessible counterweight tool to the analytical prowess of large corporations:

    'The business school graduates who drive corporate strategy at large agribusiness firms conduct proprietary market assessments that form the basis for internal strategic plans. Serving as a counterweight, value chain assessments provide open-source, countervailing analytical and diagnostic power on behalf of the least powerful members of global value chains, the rural poor.'

If successful cases are to be scaled up to increase reach and impact, a variety of models and processes must be considered.

3

A FRAMEWORK FOR LINKING SMALLHOLDERS TO MARKETS

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The cases reviewed, as well as the literature, suggest that linking smallholders to markets can be seen as three sets of related considerations, or dimensions, see Figure 3.1.

One concerns the business case for those engaged in the links, including smallholders, traders, processors and retailers. Several factors make this possible: that the state fulfils its basic roles of ensuring an enabling investment climate in rural areas and provides public goods that the private sector will not; that those working with smallholders and their chains focus attention on the most appropriate markets, and that they focus efforts on priorities in particular cases, be that production on farm or marketing, be those attempts to maximise returns or to reduce risks.

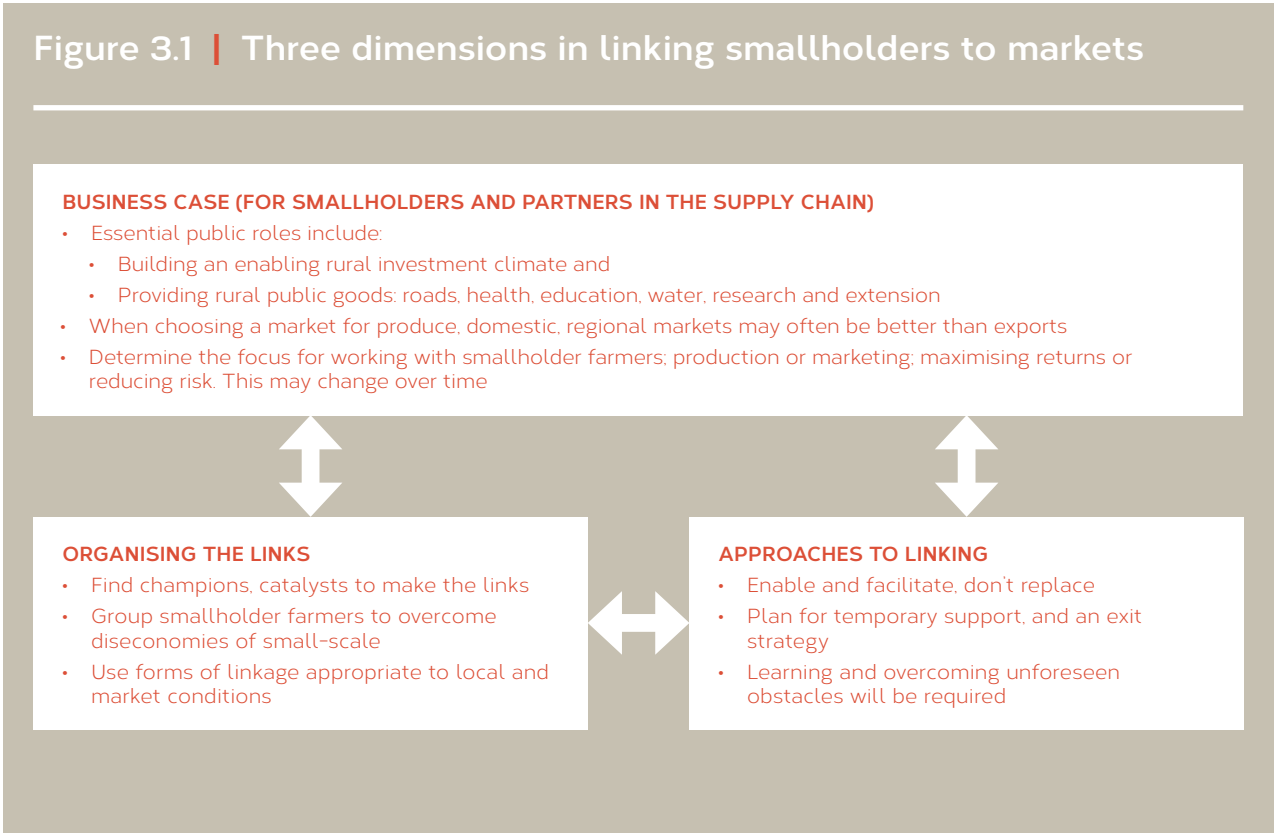
Another consideration is the approach of those helping make the links. Principles for linking are easy to state: that agencies should enable and facilitate actions by those in the chains, rather than replace them; and that support should be temporary, preferably with an exit strategy in place early on. Processes are equally clear. Learning needs to take place to overcome unforeseen obstacles.

The third dimension is about how links are organised and how effective arrangements can be formed. Considerations here include the role of champions and catalysts, the way in which smallholders are grouped, and the particular forms of linkage.

The three dimensions are systematically interrelated: strategic choices about markets interact with approaches and affect decisions made about organisation. They are also heavily embedded in circumstances, including the crops or livestock concerned, local geography, social formations and so on. Given the number of variables that potentially affect outcomes, a systems view is inevitable. It is not surprising that the analytical approach most often seen in use by agencies, that of value-chains, is essentially a systems view in which causal links run in more than one direction with feedback loops common.

In this schema the actual forms of linkage – such as spot markets, contracts, producer organisations – come last of all: this reflects reviews of experience which downplay the precise form in favour of trying to understand functions in varying circumstances.[13] This, as will be seen in the conclusions, has important implications when answering the important question of how to scale up small, but promising, initiatives.

Figure 3.1 | Three dimensions in linking smallholders to markets



3.1 BUSINESS CASE

Unless smallholders – and others in the supply chain – see returns to their capital, labour and land that justify investment and innovation, then there is no case to link small-scale farmers to markets.

> … no amount of goodwill, money or effort is sufficient to develop relationships that operate against business models. (Mitchell and Coles 2011)

So, what affects the business case for investment? Three issues stand out from the literature and cases: working within an enabling economic environment, supported by rural public goods; producing for the most appropriate market; and, focusing on the most critical elements for farmers, be they in production or marketing, in maximising returns or reducing risks.

THE PUBLIC CHALLENGE: AN ENABLING RURAL INVESTMENT CLIMATE AND PUBLIC GOODS

Farmers, traders, processors and retailers cannot prosper in markets unless the state ensures the basic conditions under which markets can function. Governments have to ensure that there is an enabling or conducive rural investment climate, and have to invest in the rural public goods that private investors will not provide. The combination of these encourages investment and innovation by private firms, not least of all, by small-scale farmers.

> Working with farmers will have little impact if the enabling environment that governments provide is inappropriate for development of market linkages. (Shepherd 2007)

RURAL INVESTMENT CLIMATE

What makes for an enabling rural investment climate? It is combination of peace and order; macro-economic stability with inflation contained and a competitive exchange rate; predictable and modest taxation, with tax reinvested in public goods; and the recognition of basic institutions, above all property rights that are respected (Poulton et al. 2008).

> The elements of a good general investment climate are well known, and many of the same factors are equally or more important in the enabling environment for agriculture: good governance, macroeconomic stability, transparent and stable trade policies, effective market institutions and respect for property rights. (FAO 2012)

The benefits of an enabling environment are seen strongly when they are absent. In the 1970s and the first half of the 1980s these conditions were grossly lacking in many countries of Africa. For farmers rampant inflation and heavy over-valuation of the domestic currency often meant that there was no incentive to produce more exports, since their value in local money was low, and often there were few consumer

Figure 3.2 | Net rate of assistance to agriculture for Africa, 1955 to 2005

SOURCE: CONSTRUCTED FROM DATA IN ANDERSON AND VALENZUELA 2008.

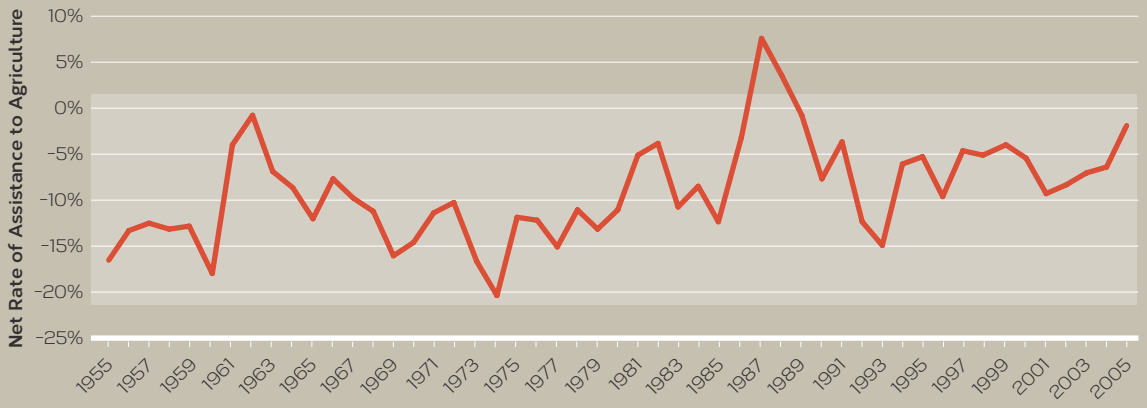


Figure 3.3 | Recovery of Rwanda's coffee exports since 1996

SOURCE: CONSTRUCTED FROM FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS (STATISTICAL SERVICE) (FAOSTAT) DATA

goods on offer to buy. Net rates of assistance to agriculture (NRA), a measure of the extent to which macroeconomic conditions and government taxes and spending favour farming, were substantially negative at this time, see Figure 3.2. These rates were often a lot worse for export crops that were typically heavily taxed, both explicitly and implicitly. For example, Ghana's cocoa had an NRA of -0.8 or worse – that is to say an 80% tax – between 1976 and 1979. With little incentive to produce, cocoa production in Ghana slumped, while farmers who could smuggle their beans out through neighbouring Côte d'Ivoire and Togo did so.

It is easy to see the importance of the investment climate. The issue in practice, however, is how good does the climate have to be to allow investment, or, put otherwise, how bad can it be before investors are deterred? This matters: developing countries rarely have the administrative capacity, or perhaps also the political ability, to get an ideal investment climate. Hence there is debate about 'good enough governance' (Grindle 2004, 2007) and the minimal conditions for progress (Moore and Schmitz 2008), largely inspired by East Asian examples, where heavy investment and rapid economic growth have been achieved despite an imperfect investment climate and governance.

China provides a lesson. The reforms that China made in 1978 in allowing farmers to work their own fields and to deliver part of their produce to markets rather than to state traders, were far from comprehensive, but these changes helped accelerate agricultural growth that not only led to reduced rural poverty, but also allowed the rapid industrialisation and urbanisation of China (Bromley and Yang 2006, China-DAC Study Group 2010, Rodrik 2003, 2004). This suggests that it is not necessary to create a perfect investment climate, but merely to remove the worst failings from the environment.

Fortunately the reforms undertaken – often painfully – in many African countries in the 1980s and 1990s have removed the worst failings, so that the obstacles to investment are much reduced from what they were. While in the 1970s agriculture was on balance taxed by 15% or more, by 2005 that had been reduced to less than 5%, see Figure 3.2.

One of the best examples comes from Ghana, where the reforms of 1983 saw hyperinflation tamed, the Cedi (heavily) devalued to a competitive level, and reform of the cocoa marketing board to reduce costs and so raise the share of the export price received by farmers. These led to a remarkable acceleration of agricultural growth. For much of the decade before 1983 agricultural growth was slow or negative; since the reforms, agriculture has grown at an average annual rate of around 5% a year, one of the fastest of any farm sector in the world. (Leturque and Wiggins 2011)

Not that it is impossible to make progress in unpromising rural investment climates, as cases of input distribution in Nigeria, Box 3.1, and Zimbabwe, Box 3.2 show. In these cases external assistance has seemingly been able to improve the supply of inputs for smallholders in otherwise unpromising conditions.

BOX 3.1 PROPCOM NIGERIA: WORKING IN AN UNPROMISING ENVIRONMENT

Nigeria's rural investment climate is poor. The few state-funded rural extension agents often don't reach poor farmers with the necessary information or inputs, and distribution channels for fertiliser are often corrupted. The government procures fertiliser and is supposed to distribute it at subsidised rates to small farmers, but it does not do this effectively. This undermines private fertiliser sales because fertiliser companies focus their sales efforts on the government buyer –effectively ignoring the rest of the market. In 2008, for instance, Nigeria's largest fertiliser blending plant sold 20% of its supply to the open market and 80% to the government.

In theory, the government subsidised fertiliser should cost farmers something like 60% less than the official market price, but in practice it ends up costing almost the same owing to informal rules and social patronage. Furthermore, distribution is unreliably timed. Market fertiliser is available only in 50kg bags, which most small farmers cannot afford. Sometimes traders open the bags and sell smaller amounts, but this can lead to ruined or adulterated fertiliser, so farmers are less willing to buy it.

Promoting Pro-Poor Opportunities in Commodity and Service Markets (PrOpCom) was a DFID-funded project that began in 2004 and was largely designed to address issues of fertiliser access for smallholders in Nigeria. PrOpCom refocused private fertiliser companies' sales efforts on selling small, affordable packages of fertiliser directly to smallholders in remote areas rather than selling strictly to government buyers. The companies were also encouraged to provide farmer training. Village Promoters, local farmers who were trained, located across Nigeria, sell small packs (1kg) of urea and Nitrogen, Phosphorus and Potassium (NPK) fertiliser to farmers in their communities. They use demonstration plots to educate farmers on the best use of fertiliser and best farming practices. The small packages mean farmers can afford them individually and don't have to buy from opened bags or coordinate with neighbours to buy larger packs together.

By the end of the project in 2011 some 4,279 tonnes of fertiliser in small packs had been purchased by just over a million farmers in 25 states across Nigeria, with almost 212,000 farmers receiving training in application techniques.

PrOpCom appears remarkably simple and effective. It corrects a failure in the government and market systems. It helped that demand was high and alternative supply channels were so convoluted that they provided little competition. Subsequently, fertiliser supply has been reformed in Nigeria.

SOURCE: SEE APPENDIX C FOR MORE DETAILS AND SOURCES

When poor business environments improve, of course, there can be new opportunities. Rwanda is a case in point. Prior to the Rwandan genocide in 1994, the coffee sector had been strongly regulated by a state company that controlled marketing, set prices that were uniform no matter what the quality, discouraged intercropping, and even prevented farmers entering or leaving coffee cultivation. Producers were taxed as the state coffee company was a cash cow to generate funds for leaders. When in 1996 peace was restored, the coffee sector was liberalised. Farmers could cultivate as they wished, sales were allowed to private traders, while a donor project encouraged better production and processing. Premium prices were paid for better beans. As a consequence Rwandan growers and traders have been seeking the higher value markets for their coffee, with rising average returns to the volume sold, see Figure 3.3. In some cases, relatively small parts of the investment climate can be improved, as was the case with the marketing of milk in Kenya, see Box 3.3.

BOX 3.2 ZIMBABWE AGRO-DEALERS: REVIVING A SECTOR IN ADVERSITY

The rural investment climate in Zimbabwe is relatively poor. A decade-long economic recession started in 2000, marked by hyperinflation and scarcity of imported goods. Agro-input supply chains collapsed. Farmers became used to donor hand-outs of inputs, but these further undermined local input markets.

The Rural Agro-dealer Restocking Programme (RARP) was a scheme developed by SNV to revive rural agro-dealers who faced hurdles such as limited finance to buy from wholesalers and depressed demand because NGOS and the government were distributing inputs for free.

Three key constraints were recognised at the outset of the scheme: rural agro-dealers did not have the finance to stock their shops; suppliers were wary of committing their cash to advance inputs to dealers without a guarantee; and, farmers did not get technical support from the agro-dealers.

RARP began August 2009 as a pilot. For wholesalers of agricultural inputs, it helped develop viable business models and train staff to deal with small businesses, providing insurance to encourage suppliers to place consignment stock in rural retail outlets. For agro-dealers, it helped train and mentor them on retail business management. The pilot also insured them against default; although, in a fascinating detail, dealers were not told, so as to avoid dealers being careless in choosing customers knowing that they would be protected from default.

In the 2010/11 season the pilot was scaled up to cover the whole country, with further support from the Danish International Development Agency (DANIDA), FAO, HELP (a German NGO), Coraid (Catholic Organisation for Relief & Development Aid, the Netherlands), the Netherlands Embassy and GRM International. At this stage, market-based input provision was seen as more sustainable than the free input hand-outs previously promoted by donors and government. Wholesalers were provided with insurance covering US$5,000 worth of inputs per shop, in total US$112,000 worth of insurance. This was sufficient to allow sales worth US$9.3M. Agro-dealers did not default on their payments for supplies.

RARP was well-planned. It also helped that experience from other programmes, such as Agribusiness Entrepreneur Network and Training programme of Cooperative for Assistance and Relief Everywhere (CARE), Zimbabwe (CARE's AGENT programme) showed agro-dealer defaults could be low given good selection and training. Where small rural shops are credit constrained, particularly where there is a strong demand for their supplies, it ought to be replicable.

SOURCE: SEE APPENDIX C FOR MORE DETAILS AND SOURCES

In **summary**, the rural investment needs to be sufficiently encouraging to allow investment and innovation; but it does not need to be perfect – piecemeal reform can trigger significant investment.

RURAL PUBLIC GOODS

Turning to the other basic requirement from the state, government needs to invest in rural public goods: those that private firms will not provide since they cannot recover in revenues the costs of their investment. These include physical infrastructure – rural roads, electricity, perhaps large-scale irrigation and drainage where applicable:

> Reliable roads, power and water supplies are vital for perishable products, agroprocessing and export of high-value produce (Shepherd 2007);

BOX 3.3 IMPROVING THE ENVIRONMENT FOR MARKETING MILK IN KENYA

Highland Kenya has good conditions for keeping dairy cows, while Nairobi and other cities have large markets for dairy products.

Marketing of milk takes place in two distinct channels: one, the formal, that chills, pasteurises and packs fresh milk, as well as producing butter, cream, and yogurt for the middle class; the other, informal, that moves raw milk from farms to low income consumers – who understand that milk needs to be boiled. Roughly 80% of milk takes the informal route, sold at prices around half of the formal, processed milk.

Before 2004 the informal channel was illegal, outlawed by the Dairy Act. A concerted effort to promote dialogue between stakeholders, government and political leaders led to reform of the Act to allow small vendors of milk to be licensed, subject to improving the hygiene of milk handling.

The operating costs of small-scale milk vendors have fallen, cutting the cost of milk to low income consumers.

It seems the changes have accelerated the production of milk in Kenya: before 2004 production was hovering around 2.6M tonnes a year, since 2010 that has increased to more than 4M tonnes a year.

SOURCES: SEE APPENDIX C

Investment in people through education, clean water and sanitation, and health are equally important: illiterate and innumerate farmers who are frequently sick[14] cannot farm as well as they might. A supply of public knowledge through agricultural research and extension is also needed, since some important technical information, even if not all, is a public rather than private good.

Spending on rural public goods pays off, as the evidence from agricultural development in Asia shows (Fan et al. 2000, Fan et al. 2007). While spending on public goods usually pays off, public spending on goods that would be provided by firms in the market (private goods) generally does not (Fan and Rao 2003). In Latin America, de Ferranti et al. (2005) lament that between 1985 and 2000, for nine countries in the region, more than 54% of public spending in rural areas was on private goods and transfers. They calculated that an extra 1% in the share of rural spending on public goods led to a 0.23% increase in farm output, compared to only a 0.06% return to increased total spending with no change in composition. Clearly, there are great gains to be had from switching funding from private to public goods in rural Latin America.

For smallholders linking to markets, transport can be a critical factor. High transport costs reduce prices paid to farmers for their output at the farm gate, while raising the cost of external inputs such as fertiliser when delivered locally. For Rwanda's coffee farmers, transport costs from farm-gate to the port of Mombasa are estimated to take 80% of the producer price, with costs of transporting from farm to Kigali at 40% of the farmer price (Diop et al. 2005). The impacts on rural incomes and poverty reduction are probably high. If rural transport costs were halved, this would push up farm prices by 20%, thereby

reducing the incidence of poverty by 6%, according to models. Furthermore, the poor would benefit more from lower prices than the richer rural households. (Diop et al. 2005)

> Public goods, such as transport or communications infrastructure, are critical to the development of all value chains. ... One of the most significant interventions to limit the friction of distance between remote, rural producers and the market is to improve transport infrastructure. The savings in transportation costs achieved by these interventions accrue directly to producer households. (Mitchell and Coles 2011)

How easy is it to reduce transport costs? Costs escalate rapidly as transport moves from tarred to unmade roads and then to headloading, as seen in the case of moving bags of produce from villages in eastern Sierra Leone to the capital and port of Freetown in the mid-2000s, see Figure 3.4. Improving transport close to farms and villages may have high pay-offs in some cases.

It is not just operating costs that push up the price of transport: cartels and roadblocks also add their costs to the bill:

> Transport cartels are still common across Africa, and the incentives to invest in modern trucks and logistics services are weak. Roadblocks, as well as being a nuisance, add considerably to the costs and time to transport, undermining the efficiency of transport operations. Estimates suggest that reform that delivers more competition could reduce the cost of transporting staples in West Africa by 50 percent within 10 years. A different study finds that a 50 percent reduction in transport costs in Mozambique would increase real agricultural GDP by seven percent and also increase agricultural GDP in Malawi by three percent. (World Bank 2012)

In **summary**, government spending on public goods in rural areas is not only necessary for farmers and other private entrepreneurs to conduct their business, but also the rewards more than pay for the costs.

WHAT MARKETS FOR SMALLHOLDER PRODUCE?

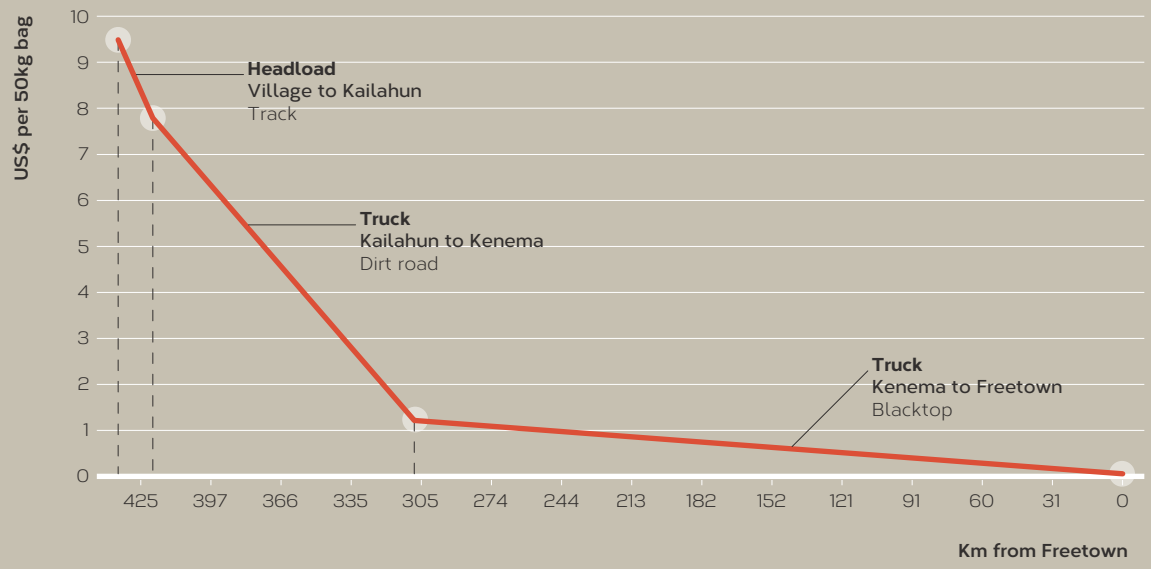
Understanding markets for produce is central to decisions to invest and innovate. The size and growth of the market, the qualities of produce demanded and potential risks, are key considerations. A strong message about markets emerges from the cases and literature: take care with export markets, especially for high value and novel products; and, correspondingly, do not overlook the growing domestic and regional markets within Africa.

EXPORTING NON-TRADITIONAL PRODUCTS: OPPORTUNITIES AND DANGERS

Export markets are attractive. They can offer much larger demand than can be found domestically or in neighbouring countries, and prices may be much higher than those in domestic markets, partly since consumers in distant markets may be prepared to pay premiums for characteristics such as organic or

Figure 3.4 | Costs of transport from villages in eastern Sierra Leone to Freetown, 2006

SOURCE: JACKSON, SANDI AND WIGGINS 2007



fair-traded produce that have little value in home markets. In Africa, for the last 150 years some small-scale farmers have taken advantage of exporting as a vent for surplus production that could never be sold locally, given that until recently the continent was little urbanised and most consumers had limited budgets.

Although Africa has lost share in some traditional exports, such as cocoa, associated with the disappointing growth of agriculture seen in the 1970s and 1980s, new opportunities have emerged. Air freight rates have been falling[15] making it possible to fly perishables such as fish, flowers, fruit and vegetables to European markets. Farming for these high-value products has grown very rapidly in the last two decades.

So, why sound a note of caution over export markets? Terms of access and risk are the issues. On the former, export markets can be highly demanding in quality and consistency, and increasingly in traceability and certification of production conditions and origins.

Certification can be highly costly for smallholders: meeting Global GAP (Good Agricultural Practice) requirements for procedures and documentation that allows export to leading European supermarket chains can cost a farm US$580 (Ashraf et al. 2008, for Kenya) – an enormous overhead for a small farm. When Global GAP (then European Retailer Partnership Good Agricultural Practices, 'Eurep GAP') became the standard for leading European supermarkets in 2007, many smallholders in Kenya and Senegal ceased to supply them. Horticulture exports from these countries now come mainly from large farms and not smallholdings. (Ashraf et al. 2008, Maertens and Swinnen 2009) Some donors and non-governmental agencies may have encouraged small farmers to try to satisfy these requirements without taking into consideration the high and recurring costs, or else by offering a subsidy on the initial costs that hardly help with recurrent requirements (Humphrey 2009, and Jaffee et al. 2011).

Not all smallholders have been excluded by these demands. For some family farmers, making GAP standards mandatory was not such a big step: they had already instituted some of the improvements necessary to meet the criteria. Some exporters with reliable suppliers were prepared to share some of the costs of the new procedures (Humphrey 2009). VegPro in Kenya, for example, has been prepared to help smallholder suppliers with meeting the standards, documenting them, and putting in place regular systems of audit to meet the criteria.

Global GAP is one form of certification; other types can be seen in the organic and Fair Trade marks, the latter explicitly focused on smaller and poorer farmers. The cases of honey from Ethiopia, rice from Benin, some vegetables from Kenya and pineapples from Ghana include Fair Trade certification, with the costs apparently being paid for by NGOs in the first two cases, and exporting companies in the latter two. These can offer access to premium markets, although the number of producers who can take advantage before these markets become saturated is limited.

BOX 3.4 SUDDEN LOSS OF EXPORT MARKETS, GHANA PINEAPPLES TO EU, 2000S

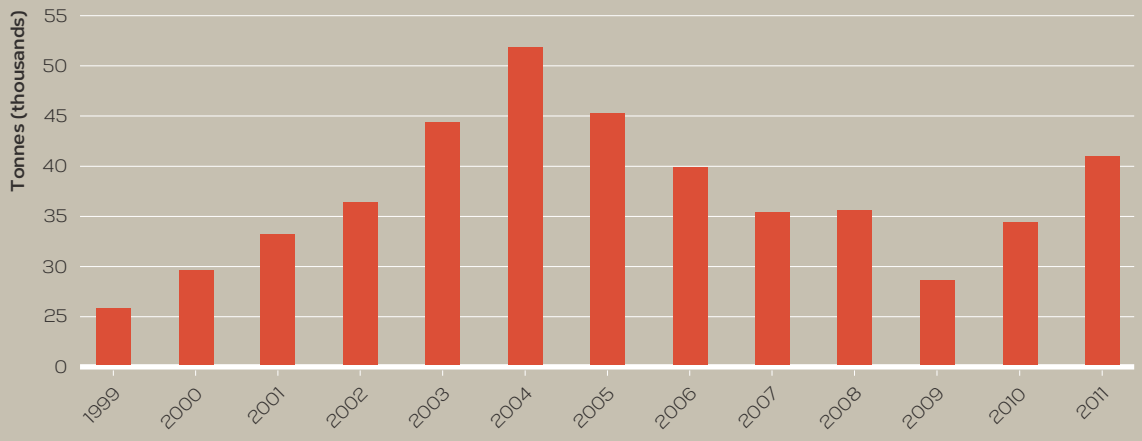
During the 1990s Ghana developed exports of fresh pineapple from smallholdings to Europe. At the time, the main potential competition came from neighbours such as Côte d'Ivoire. Given the turmoil in that country, however, Ghanaian exporters felt little pressure.

From 2003 onwards, however, an unexpected change undermined Ghana's position. Del Monte developed a pineapple variety in Costa Rica called MD2 suitable for long-range shipping, presenting an attractive fruit on delivery in distant Europe.

Ghana's Smooth Cayenne variety might have competed, but producers and exporters failed to get the quality and consistency in shipped pineapple to match the MD2. Markets were thus lost, see Figure 3.5. After a few years, Ghana reacted by switching production to MD2, but in so doing the industry restructured as production shifted heavily to plantations owned by large companies.

Figure 3.5 | Ghana pineapple exports to the European Union, 1999 to 2011

EUROSTAT DATA, EXPORTS TO THE EU 27, STANDARD INTERNATIONAL TRADE CLASSIFICATION (SITC) CODE 05795.



Some smallholders still grow on contract, most notably for Blue Skies, a processor and exporter, – see Appendix C – but conditions are stringent with export quality pineapple having to satisfy Global GAP requirements so that relatively few small-scale growers can take advantage..

SOURCES: BARRETT ET AL. 2012, FOLD 2008, WHITFIELD 2010

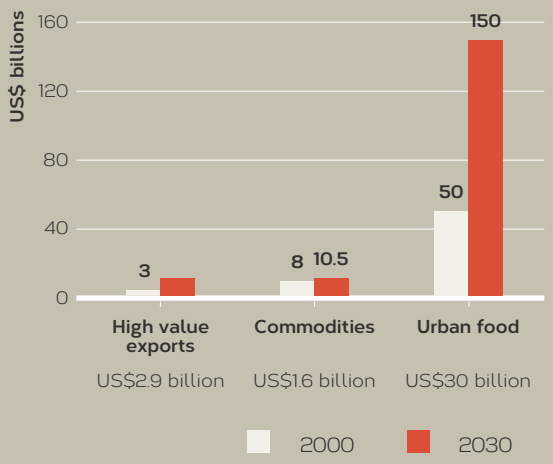
Risk is the other concern with export markets: they can be less dependable than domestic markets. Standards, as seen, can abruptly exclude some small farmers. Competition, moreover, exists for premium export markets. Innovations by barely perceived competitors can suddenly change prospects for exporters, as Ghana discovered to its cost in the mid-2000s, see Box 3.4.

GROWING DOMESTIC AND REGIONAL MARKETS

If non-traditional exports are an option for just a few smallholders owing to the limited size of these markets, domestic and regional food markets are larger and growing rapidly with urbanisation and rising incomes (World Bank 2012). In Africa it is expected that agricultural exports may be worth US$20 billion in 2030, up from US$11 billion in 2000; while domestic and regional agricultural markets will expand from US$50 to 150 billion, see Figure 3.6. (CAADP 2009)

Figure 3.6 | Projected increases in demand for African agricultural produce, 2000 and 2030

SOURCE: CAADP 2009, FROM NEPAD SECRETARIAT, 2005, 'AGRIBUSINESS, SUPPLY CHAIN, AND QUALITY CONTROL INITIATIVE', CAADP IMPLEMENTATION CONCEPT NOTE, MIDRAND, SOUTH AFRICA

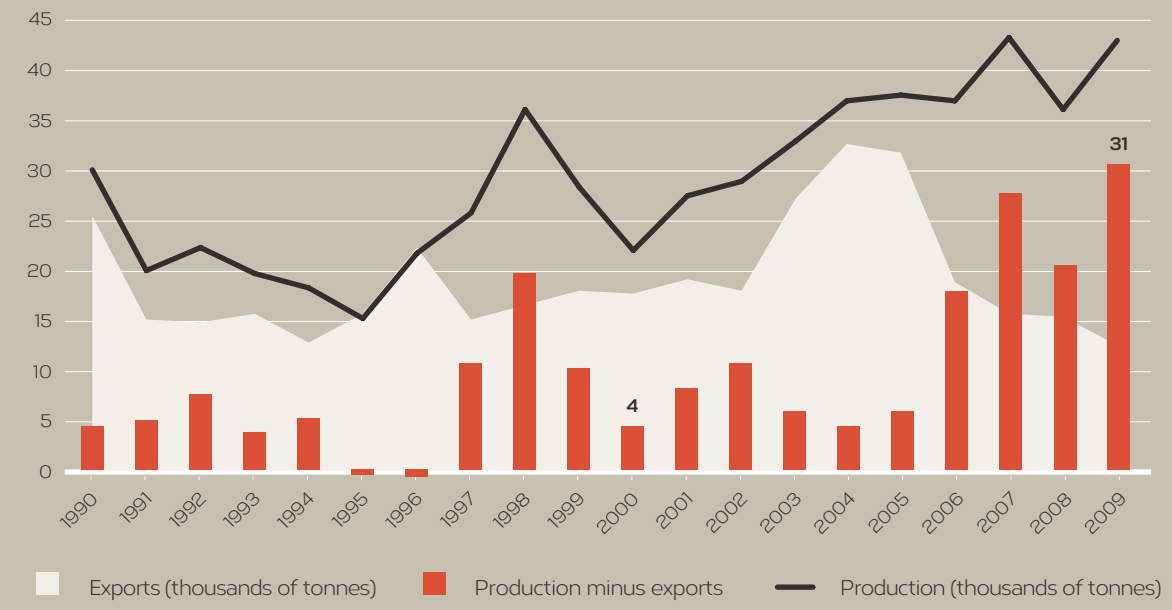


Kenya green beans are a case in point. During the 1990s and early 2000s, export production increased with contracted smallholdings supplying a good share of the exports, but when Global GAP came into effect in 2007, many smallholders found themselves unable to export. This was not, however, the end of the story. Nairobi has a booming demand for fresh vegetables, so today the overwhelming amount of green beans and other vegetables grown on smallholdings in central Kenya are destined for the capital city, see Figure 3.7. While it is estimated that fewer than 12,000 smallholders may grow for export, as many as 500,000 may be producing for the domestic market. (Jaffee et al. 2011)

The increasing attractions of domestic and regional markets can be seen with the Blue Skies processing plant in Ghana: of the 45 tonnes of fruit being procured a week, only one third of that is sent for export, the rest, mainly juice, is destined for the local markets.

Figure 3.7 | Green beans exports from Kenya

SOURCE: CONSTRUCTED USING FAOSTAT DATA



Import substitution is another option. In two cases, that of Eagle Lager in Uganda and Guinness in Ghana, domestic sorghum production is being contracted to substitute in part for malt that would otherwise be imported. Shoprite in Zambia is trying to establish local procurement of fruit and vegetables to remove the need to import produce that meets the supermarket chain's standards. One of the largest examples of import substitution comes from Uganda where one of the biggest oil processors in the country has as many as 54,000 smallholders growing sunflower for crushing. Given Uganda's landlocked position and the relatively high cost of importing vegetable oils from the world market, there should be ample scope for good returns to domestically grown oilseeds.

Markets are of course growing and changing. Time may bring new opportunities, but it may also bring the threat of competition from lower-cost producers. For this reason, a roundtable of specialists and practitioners in smallholders and value-chains stressed the importance of regular analysis of markets, taking advantage of proven methods[16] for detailed analysis of markets and the segments within them (Campbell 2010). Analyses need to be undertaken jointly with stakeholders in the chain so the results are owned, understood and taken seriously. Benchmarking against competitors may be useful.

A FOCUS FOR ACTION: PRODUCTION OR MARKETING, MAXIMISING OR REDUCING RISKS

To state what may seem obvious, those working with small farmers need to focus on what for them are the critical issues. This needs stating and developing, since initial diagnoses and assumptions about problems and opportunities may not be right.

One way to consider the options is to see them as arrayed along two axes: one for production and marketing; the other for maximising and reducing risks. Table 3.1 presents choices along these two dimensions to produce the four quadrants of actions shown.

The top-left quadrant is about improving production on farm: raising yields, increasing productivity and reducing unit costs. The top-right sector concerns combating risks in production arising from weather, pests and disease. It comprises diversification of production and adopting varieties and methods that are resilient to physical challenges of pests and diseases – both of which, where risk averse, may involve sacrificing the maximum yield; protecting crops using chemical or biological defences, and insuring crops against loss. This last is rarely an option for smallholders today in Africa, but there are pilot schemes offering insurance against indices of weather, so it may become more of an option in the future.

Marketing occupies the lower half of the table. The bottom-left cell includes strategies to sell for higher prices: through better informed negotiation, or by using more direct channels; or by raising quality, improving consistency, and certifying production that may allow access to premium markets. The lower-right quadrant depicts ways to reduce risks in marketing from variations in prices or changes in product specifications that may close off market opportunities. Responses to these may lie in diversifying production, or seeking additional and alternative markets so that exposure to any one product and market is reduced. Contracting where prices and specifications are agreed before production is another way to reduce risk. Increasingly there may be opportunities to hedge against price risks on the commodity exchanges that are gradually emerging across the continent, where futures contracts and even options may be on offer.

The point here is to be aware that the most effective actions may lie in any of the four quadrants, or some combination of them. The points of emphasis, moreover, may shift through time as external conditions move, or as programmes move sequentially from dealing with the most pressing issues to the next most pressing

Table 3.1 | Different emphases when working with smallholders

SOURCE: TABLE 1 FROM BARRETT 2008

	MAXIMISE RETURNS	REDUCE RISK
PRODUCTION	*Produce more*	*Reduce risks from weather, pests, disease*
	Improve productivity, reduce unit costs	Use versatile and resilient varieties and methods
		Crop protection, veterinary treatments
		Crop and livestock insurance
MARKETING	*Sell for higher price* – through better information for negotiation with traders, using more direct channels that cut out intermediaries, etc.	*Reduce risks from fluctuating prices, changing market demands*
		Diversify production
	Higher quality, more consistency, certification with norms that can access premium markets	Seek alternative markets
		Contracting
		Hedge on commodity exchanges [future option]

BOX 3.5 SUPPLYING KAMPALA RESTAURANTS WITH POTATOES FROM KABALE DISTRICT, UGANDA

The story of the Nyabyumaba farmers group from Kabale District in Uganda shows how support needs to follow sequences. The group was formed in 1998 with support from Africare, initially working on production of seed potatoes, where dealing with pests and disease was the priority. However, it soon became clear that the market for seed potatoes was limited.

Hence, in 2003, links were made to the Nando's restaurant chain in Kampala which was short of local potatoes and was preparing to import frozen potato chips. A contract was signed between Nando's and the farmer group for supply of potatoes, that stated a price, potato variety and quality, volume and frequency of supply. To meet the specifications the group then went back to researchers to help them produce consistently large potatoes. Plant spacing and use of fertiliser were the answers. Then they looked to address the issue of regular supply throughout the year, that led to irrigation and planting in swamps to produce a crop in the dry season. It also led to collective agreement amongst the individual growers on planting schedules.

When International Centre for Tropical Agriculture (CIAT) support for the programme ended in 2007, the arrangement was hit by lower demand from Nando's and rising transport costs from Kabale to Kampala. This has led to the group abandoning seasonal production to cut their costs and they are looking for diversified markets.

The lesson here is that challenges change through time, as do the demands of markets, to which farmers have to adapt. At times that may mean the issue is production, at other times it is about marketing; while the emphasis between producing quality potatoes and keeping costs low may change as well.

SOURCES: ALIGUMA ET AL. 2007, FAO AND SOUTHERN AFRICA CONFEDERATION OF AGRICULTURAL UNIONS (SACAU) 2011

– see Box 3.5 for an example from Uganda. Value-chain analyses can be helpful in identifying critical points for intervention, especially when they have the participation of key stakeholders.

The danger for those working with smallholders is to assume that the priorities lie in just one area, usually that for which the outside agency has competence. For those working in value-chains, moreover, the natural tendency is to see the issues as lying in marketing – and then imagining that this requires action from producers. From a team working with dairy cooperatives in Kenya comes the following admonishment:

> In well-functioning value chains, dairy farmers are happy to focus on what they are best at – farming – to maximize their earnings. Instability in markets compels farmers to engage in more downstream activities to achieve better control of the chain. For the farmers this often comes with complexities that are often beyond their financial and technical capacities. (Maina et al. 2010)

So, perhaps a point to add, is that wherever in the scheme the priority may lie, some thought needs to be given to who may be the most appropriate actor to address the problem or opportunity.

SUMMARISING: KEY LESSONS FROM THE INVESTMENT CASE

There has to be a return to farmers for improving their links to markets, whether these are for produce, inputs or some service, such as finance. In contemporary Africa there are increasing reasons for engaging with markets since there are increasing opportunities to sell produce for a remunerative price, while the range of technologies embodied in external inputs on offer is also growing. The two are related: the higher the prices for output, the wider the range of technologies that become profitable.

Three things need attention to realise this potential:

- Government has to fulfil the roles that only government can: setting an investment climate that enables and encourages investment and innovation, and providing those public goods that allow farms and other private firms to work well. The investment climate does not have to be perfect, only that the worst flaws are removed. Many of the public goods, and the most costly, needed to support farming are not agricultural; the budgets for public investment lie with ministries other than agriculture. Agricultural research and extension matter for farmers, but equally so too do passable rural roads, schools, clean water and health services;
- Smallholders need to be steered towards those markets that are appropriate for them in the standards that are demanded and the risks they entail. Domestic and regional markets are usually less demanding and more reliable than export markets. They are also larger and growing more quickly. For most smallholders these are the output markets they need to serve. Some can access high-value, air-freighted channels for niche produce, but they will be a small minority. It is a mistake to imagine that most farmers can do this. The bulk of attention by governments, donors and NGOs should therefore be directed to the domestic and regional markets. This applies all the more strongly since the high-value export chains have been, and can be, developed by private firms with very little help from government – other than, of course, providing and maintaining an enabling environment;
- Those working with smallholders need to recognise that problems and opportunities may lie in production or marketing, in maximising returns, or in avoiding losses. These targets, moreover, will change through time. It is a big a mistake to imagine that the opportunities always lie in marketing as it has been in the past for agriculturalists to assume that farmers' priorities lie in production alone. Even when the priorities lie in the supply chains off the farm, that does not necessarily mean that farmers should be engaged in dealing with these.

3.2 APPROACH TO LINKING

One of the strongest lessons seen in the cases and literature is the importance of the approach taken to linking, especially by public agencies of government and NGOs, often with donor support. Processes are stressed repeatedly, models less so. Two aspects stand out for those agencies that help farmers link to markets: facilitating activity by others, rather than replacing that activity, and promoting learning. Each encounters dilemmas in practice.

FACILITATING AND ENABLING

Links will only be sustained if operated by farms, collective and private enterprises – and not by a programme or the agency that runs a programme. Hence, the actions of farms, firms and collectives need to be stimulated and facilitated:

> ... a facilitation approach seeks to shift the way firms behave and relate to each other to bring about change in a market system such that the system itself delivers the goods and services necessary for upgrading. (Campbell 2010)

The ideals are clear. Facilitation is about building the capacity of those in the supply chains to solve their problems. It means enabling, then withdrawing. Correspondingly, it is not doing things that can lead to dependency. It is about not replacing links in the chain with the actions of the facilitator, and certainly not intermediating in deals. It means not providing subsidies that have to continue beyond the time for learning.

These ideals are easily stated, but harder to put into practice. Intervention starts from links that are either absent or working poorly. Action has to begin somewhere and often a new actor is needed to act as a catalyst. Existing actors in the chain, and especially smallholders, may need temporary support to allow them to learn or to take on new initiatives without undue risk. Such support may take the form of training, advice and technical information, facilitating meetings between farmers and buyers who have not done business before, provision of capital grants to allow initial investments in production, storage, processing or transport, or underwriting novel schemes with the intervener guaranteeing to buy back unsold inventory, to cover (some) bad debt, to support prices should they prove lower than expected, and so on.

Such support needs, however, to be temporary, to be strictly limited to things that will catalyse changes and allow the private and collective actors in the chain to continue on their own. That may be well understood by all parties at the outset, but dangers arise in practice for both those in the supply chains and for intervening agencies.

For the former, dependency is the temptation. Support from outside can create expectations. If support goes beyond facilitation and starts to take action directly to create links or solve problems, those supported run the risk of losing sight of their own agency:

> 'Organizational development focused primarily on identifying and solving problems had a disempowering effect, reinforcing smallholders' view of themselves as overwhelmed by problems and requiring the help of outsiders to overcome them.' *Facilitating Behavior Change and Transforming Relationships*, SDC Asia, 2008 cited in Campbell (2010)

The danger of dependency is exacerbated by the temptation for well-funded and well-meaning interveners to argue for further support, since they fear that to withdraw at a given point would risk all efforts made to date being lost.

For agencies intervening, further temptations lie in using their expertise, capacity and finances to act directly and solve problems, since this will allow them to fulfil plans and targets, and above all, to avoid failures – a knotty issue which will be discussed in the next section on learning.

How can these dilemmas be confronted in practice? Having clear exit strategies early on may help, although that rather presumes that interventions can be well defined in advance, as can be the moment that they will end: as will be shown, that may be unrealistic.

The cases reviewed do not often show a clear exit strategy in place. In one third of the cases, the initiatives were taken by private firms in which start-up costs had to be part of the business model. In the other two-thirds, where there was a (public) intervening agency, few had clear exit strategies. A typical dilemma is illustrated by the OAF, see Box 3.6. This initiative strives to keep costs low, aiming to reach the point where it can be a self-sustaining programme. Staff report that it has become 80% self-funded, an honourable achievement in a short time, but how will the remaining 20% of support from outside be entirely replaced? The programme is still developing and learning, so to demand a precise answer may be unfair. However, the question remains as a nagging doubt about its sustainability.

There's another pitfall for the unwary. Ill-considered programming can lead to a double problem: that of offering too much support early on, then abruptly withdrawing this in line with the programmed exit. Business development services funded by donors are a case in point:

> Programs designed to support local "business development services" have tended to initially oversubsidize these services and then prematurely withdraw the support (in line with short project cycles), all too often leaving behind a distorted market for technical, advisory, and auditing services and relatively few examples of viable service providers able to withstand any significant production or market shock. (Jaffee et al. 2011)

BOX 3.6 ONE ACRE FUND: GETTING MAIZE AND BEAN SEED AND FERTILISER TO MARGINALISED FARMERS

OAF is a non-governmental initiative that began in Western Kenya in 2006, in areas with very heavy pressure on land, so that most farmers have small plots, and where food production is often less than household needs, given the low yields that many farmers obtain.

The Fund provides farmers, those with one hectare or less of land, many of them women, with a simple package of inputs for maize and beans: hybrid seed and nitrogen fertiliser, on credit, plus technical advice. There is also a guarantee to buy-back the crop surpluses of farmers who cannot otherwise find a buyer. Inputs are advanced in kind, then costs deducted when crops are sold or delivered to the Fund.

The system operates through field officers recruited from amongst the farmers, who work with groups of 200 – 250 farmers, formed around existing women's groups. The groups assume liability for the inputs loaned. Field officers are then supervised, supported and provided with inputs by a management hierarchy that leads upwards to a district manager. The organisation appears economical, with relatively few managers compared to the farmers served. Consequently, the Fund may be covering 80% or more of its costs.

OAF has subsequently expanded the system to Rwanda and most recently to Burundi.

There are reports of maize yields tripling from 0.5 tonne to 1.5 tonnes an acre. Coverage is impressive: by 2012, 130,000 farmers were reached in the three countries.

SEE APPENDIX C FOR MORE DETAIL AND SOURCE

Recognising the issues may help. Even concepts and labels may be useful, as for example in the West Africa programme of building agri-business clusters funded by IFDC where participants with a long-term stake in the outcomes were termed 'problem-owners', thereby making their interests distinct from those of the programme (Maatman et al. 2011).

The issues, however, may not be clear unless the underlying substance is also clear. Certification provides an example: is it the paperwork and especially the initial documentation that matters? Or is it about the underlying procedures that allow audit and certification, procedures that need to be maintained? Compared to the demands of the latter, getting the original certification may be the easy part:

> The biggest challenge for a process standard is to maintain the integrity of the standard through defined procedures, record-keeping, internal audit and third-party certification. The certification element is only one element, and not necessarily the most important. (Humphrey 2009)

When Global GAP came to apply in Kenyan horticultural exports, donors were mainly concerned about start-up costs for smallholders. Humphrey (2009) considers that they were less aware of the demanding disciplines and associated heavy recurrent costs.

However, perhaps the greater challenge to facilitation lies with learning and the consequent dilemma this poses for those planning action.

LEARNING AND OVERCOMING OBSTACLES

Again, it is easy to state the issue. Progress will rarely be made by intervening with a ready-made solution: effective links will more likely be built by careful adaptation to circumstances and the (growing) capacities of the key players, reinforced by learning and adjustment. It is almost inevitable that programmes will encounter unforeseen and unforeseeable obstacles. Recognising them, then learning how to overcome such hurdles, implies additional and usually unplanned efforts: there thus has to be flexibility in operating systems in time, staff and budgets to allow for such learning and responding.

Most of the cases reviewed demonstrate operations being changed in response to learning, usually having stumbled across some problem. Earlier sequences of actions were mentioned, with the example of Kabale potato growers in Uganda, where the emphasis of their efforts began with production on farm, turned to marketing, but then had to return to the fields to meet the demands then discovered in the market.

Dunavant cotton in Zambia tried several ways to distribute inputs to its growers and to recover the costs, while avoiding side-selling by growers, before arriving at the current model of farmer-distributors. This has solved most of the problem by using local farmers who both know how trustworthy their neighbours are, and who are encouraged by varying commissions to make sure that the value of inputs advanced is recouped by sales to Dunavant when the cotton is harvested.

Several contract farming schemes, including that of Eagle Lager in Uganda, have seen changes in the numbers of growers as both parties, processor and growers, have learned whether the arrangement works for them.

OAF report that almost every element of their current model is the result of revising an initial idea:

> We have gotten everything wrong at some point– our agronomy, our repayment procedures, our HR (human resources) practices, our farmer enrolment strategies. (Youn, founder of One Acre Fund)

Linking Local Learners (LLL) promotes learning explicitly by encouraging peer learning, by having their different associates – brokers, transport operators, traders – write up their experiences to be shared with others in the network, see Box 3.7.

BOX 3.7 LINKING LOCAL LEARNERS: PEER LEARNING FROM EXPERIENCE

One of the most radical attempts to improve staples marketing seen so far, LLL is an initiative pioneered by Pride Africa, an NGO based in Nairobi. The ambition here is high: it attempts nothing less than to change the usual model of operations for traders, from trying to create margins that benefit them, to selling on commission.

LLL establishes local brokers living in villages and rural markets linked to district, regional and national hubs. The hubs provide, via web sites and texts, the broker with information and contacts for marketing. The broker then sets up deals between buyers in distant markets and local farmer groups. Brokers work with farmers to make sure that consignments are assembled to schedule, quantity and quality; then packed and transported to buyer.

The brokers never take control of produce: instead they work for a commission paid on the value of the sales. Thus, they have an incentive to get the best deal for the farmers, since the higher the farmer price, the greater their commission. Transparency is stressed: the brokers show farmer groups how their price relates to the buyer offer, and how much the broker takes.

The system includes secure transactions, through which farmers can be paid the moment they deliver their bags. Bags are tagged and coded so that shipments can be traced from farm to warehouse, so that problems can be detected and resolved

Village brokers also act as distributors to national manufacturers and wholesalers: agricultural inputs, water tanks and filters, sprayers, tea, flour, animal feed. For national companies finding local distributors is valuable. For the brokers, it adds to their earnings.

During 2011 twelve trader networks across Kenya, Uganda and Tanzania conducted some eighty deals benefitting over one thousand small farmers. Farmers got an average of around 15–20% more money into their pockets than had they sold through other existing channels. Costs per deal have been kept down to only 20% of total value, so that farmers have obtained 80% of the distant buyers' price.

A feature of LLL is the intensity of learning, promoted through peer to peer exchange of experience, through web accounts of experiences. These include some frank and convincing accounts of the difficulties of doing business in rural East Africa, and how those involved have coped with the dangers and setbacks that arise in practice.

SEE APPENDIX C FOR DETAILS AND SOURCES

Some efforts, moreover, will be frustrated, they will fail. The rate of failure of new businesses, particularly small ones, is high the world over and especially in rural Africa (Liedholm 2007). Interveners need to be prepared, then, to abandon some endeavours. In business this is painful; but less painful than piling up losses by running failing businesses. However, in public agencies, both governmental and non-governmental, it may be possible to persist pointlessly, especially when admission of failure is seen, as is often the case in hierarchical organisations, as tantamount to an admission of professional incompetence.

Less is known about outright failures, since as noted in the introduction, such cases tend not to be written up. The main example from the cases can be seen in contracting schemes, where the considerable fluctuations in the numbers of growers signed up indicates that for some farmers, the contract did not work.

DISCUSSION: IMPLICATIONS FROM APPROACHES

It is easy to state the case for facilitation, enabling and learning. The implications for programming the work of an organisation that facilitates, enables and learns can, however, be challenging.[17]

Enabling and facilitation are processes that are not readily programmed in advance: it is hard to be sure just what the needs will be in a year's time. So, plans have to be flexible. Building capacity takes time, so does overcoming unforeseen obstacles. Those engaged in such processes are unanimous that one or two year's actions will rarely be enough: five to ten years may be more realistic. In practice, flexible plans and allowing time for additional efforts means having contingency funds.

If learning is to take place, then programmes have to monitor progress with information that meets the needs of programme participants – as opposed to the demands for data on indicators by headquarters. Programme staff have to have the freedom to admit that elements of the programme may not be working – or indeed, that some initiatives have failed – and hence to change their operations accordingly.

These criteria may not, however, fit easily with the needs of many organisations for precise programming, budgeting and monitoring; with close control of plans by year, half-year and even by quarter, with corresponding targets for progress in the short run. For some agencies, those with strong role[18] organisation cultures, these programmes may simply be unthinkable: their demands conflict too much with organisational culture.

Those intervening agencies that can accommodate the kind of flexible planning and implementation indicated may be able to cope by having a diverse portfolio of initiatives, proceeding at different speeds, with these jointly programmed so that staff time and resources can be switched from one initiative to another as and when needed. A diverse portfolio also allows some failing endeavours to be dropped, in the reasonable expectation that other initiatives will bear fruit and justify the overall portfolio.

Some of the cases,[19] however, suggest another factor that can overcome the difficulties of programming processes whose outcomes cannot be predicted in detail: leadership. Long recognised in development literature (see, for example, Korten 1980), committed leaders who sustain their active interest in initiatives can square the programming circle. Good leaders can recognise the tensions between control in the short run and adaptation in the longer run, and thereby bridge the gap between the overall goal and the everyday realities of hard work and problems, sustaining the morale of all involved in the process. Practically they can ensure that field managers have the flexibility, resources and political support to develop field programmes.

So, what does this imply for those wanting to promote linkages? Three things stand out:

- Allow time for these initiatives, recognise there may be setbacks, even outright failures, and make learning a prime objective – that means allocating funds for monitoring, evaluating, documenting and disseminating;
- If a funding agency cannot work directly and meet the operating demands set out above –many donors who have to follow general civil service rules will find this difficult – then look to work through partners who have organisational cultures that allow them to work more flexibly. Fund a portfolio of initiatives, preferably run by different agencies, to even out disbursement and to make it likely that there will be enough success to justify the overall investment – and to allow the funder to drop implementers that do not deliver; and,
- Assess agencies for funding on the criteria of whether they have the capacity to operate flexibly – and preferably the experience that shows they do so, and by leadership – even if this latter is not easy to judge.

3.3 ORGANISING LINKS: CHAMPIONS, FORUMS, GROUPS AND LINKS

This section deals with the architecture of the links to markets observed. It examines key elements of the structures seen: the roles of catalysts or 'champions' of supply chains, of forums that bring together stakeholders, and of groups of farmers. It then looks at the most common form of link seen: contracting. A last section reviews experiences of links to farmers growing staple, rather than high value foods: where the low value of produce raises the question of whether investment in improved links is worthwhile.

CATALYSTS AND SUPPLY CHAIN CHAMPIONS

Who takes the initiative to form the links? In several of the cases reviewed, a large and formal firm – a processor, exporter, or retail chain – takes the initiative to set up the links. Rarely does this come from a smaller operator, still less from farmers themselves. The incentive in these cases is largely commercial gain; more specifically, the large firm wants a supply for a profitable outlet. Some of these cases are for export: vegetables from Kenya and pineapples from Ghana, for example, where high prices in European markets are the incentive. Equally there are opportunities for import substitution, especially for higher-value produce such as vegetable oils. In these cases, imported oils can be expensive owing to high transport costs so that attractive prices can be paid for domestically-produced substitutes.

Companies turn to smallholders when there is no other convenient supply or when it seems that smallholders may be able to supply at lower cost than possible alternative supplies from larger farms. In some cases, there

may be few large farms so that the choice is sourcing from smallholders or importing. Given the costs of dealing with many farms, smallholders will only be engaged when they have a competitive advantage over other options, either because they can deliver at lower cost, or occasionally because smallholders can deliver better quality than larger operations, as applies with crops that require hand-picking.

The other prominent catalysts are non-governmental organisations who aim to improve links as part of their mission to reduce poverty. Most of those in the cases surveyed are NGOs that specialise in making commercial links, such as SNV and Technoserve. They typically partner private firms that are expected to continue linking to smallholders after the NGO has contributed with training, facilitating analysis, contacts and conversations amongst firms, farmers and other stakeholders.

Government agencies are only occasionally the champions of change, most notably in longstanding public enterprises such as the Kenya Tea Development Authority (KTDA). They are not, however, absent from these initiatives, and are usually part of stakeholder dialogues and forums for particular product value-chains; but they are rarely the ones making the first moves.

An unusual initiative, in that the champions of links would be neither a firm, NGO nor government agency is the LLL, see Box 3.7. In this case, it is local agents working on commission who champion links between firms in cities seeking supplies and groups of farmers who might grow the produce.

It probably matters less which agency takes the lead on forming links, than that there is an agency prepared to invest time and resources to making the link work. This begs the question of whether the business opportunity will be sufficient to motivate firms to take on this role; a question to be addressed in the conclusions.

GENERATING CONSENSUS AND INTEREST: STAKEHOLDER FORUMS

Forums that bring together government, firms, civil society and farmers to consider the issues affecting a particular value-chain and to decide on actions to improve functioning are seen in several of the cases. They can be seen as playing a prominent role in changes to legislation for Kenyan dairying, and in formulating national strategies for the development of cotton in Burkina Faso, coffee in Rwanda, sunflower in Uganda and rice in Zambia.

Forums can potentially allow diagnosis of problems to allow a sharp focus on critical bottlenecks and ways to relieve them. They can mobilise energies to overcome problems that require joint action, where individual agents and agencies do not act since they have no confidence that others will act. In some cases they can generate sufficient interest from key actors for regulations and rules that impede the development of the sector to be changed.

In the cases where they are reported to have made a difference, the common feature is that there has been a prominent opportunity that is readily apparent: either a chance to replace imports by domestic production, as seen for Uganda sunflower, or the need to stimulate a key export, as applies for coffee in Rwanda.

GROUPING SMALLHOLDERS

Rarely can large-scale firms in supply chains – processors, wholesalers, retail chains, input wholesalers, banks, etc. – deal directly with individual small-scale farmers. The costs are usually too high, not just in administering many small deals, but also, and often more important when it comes to deferred deals such as contracts and credit, in ensuring that farmers who are party to deals are competent and trustworthy. Hence, there has to be some point in the chain where the farmers are aggregated, either directly, as in a farmer group, association or cooperative; or indirectly, through the intermediation of local input dealers or appointed distributors, lead farmers, bank agents, and so on.

In most of the cases reviewed, smallholders have been grouped together. Some evidence suggests that these groups tend to reflect the received wisdom of successful groups (as set out in section 2.3), namely: most of the groups are local and small, they usually bring together no more than few dozen members from the same location; and, they usually have a specific and limited agenda, often formed to sell produce, or to receive inputs or services – and nothing more. In several cases, the groups have been formed around existing groups, such as the women's groups that form the core of those receiving the seed and fertiliser distributed by OAF in Kenya. Using existing groups increases the chance of group cohesion, but it may not always be socially inclusive – a theme to which discussion will return in the next section.

There were just a few exceptions to use of farmer groups. In one case, that of Spar in South Africa, where produce was sourced from individual farmers, but given that these tended to be larger than average small farms, that may be an exception that confirms the general proposition. The other exceptions were two cases where local intermediaries served to bulk up produce from farmers and to distribute inputs to them. Dunavant Cotton, for example, decided to link to contracted farmers through distributors based in villages, selected from amongst the local farmers, see Box 3.8.

CONTRACTING: THE DOMINANT LINK

Contracting is the dominant form of link in the cases reviewed. Contracts, however, include a wide range of arrangements in terms of how many strands the agreements have, and how much is staked by both parties. About half of these involve the simplest form of contracting: an agreement over sale of produce with nothing else included. The other half involve interlinked contracts with inputs being advanced and linked to sales contracts. These often involve technical assistance as well – partly to ensure that inputs are used effectively, partly to encourage farmers to honour their sales obligation and not to sell on the side.

BOX 3.8 DUNAVANT COTTON'S LOCAL DISTRIBUTORS, DEALING WITH SIDE-SELLING

In 1994 Zambia abandoned its existing model for cotton, where a public company, the Lint Company of Zambia (LINTCO), had a monopoly of cotton buying, processing and selling. In its place two private companies, Clark and Lonrho, the latter subsequently bought out by Dunavant, entered the market. Both employed their own extension agents to advance inputs to growers, with costs deducted from payments for delivered cotton.

By the late 1990s, however, additional ginners entered the market, so that processing capacity exceeded cotton production. As the ginners scrambled for supplies, it led to chronic problems of side-selling and defaults on inputs advanced by the two largest firms.

When Dunavant took over Lonrho's operations in 2000, it did away with the Lonrho model of 800 extension agents, a major overhead. Instead, Dunavant recruited distributors who conveyed inputs to farmers on credit, typically around 65 of them for each distributor, in return for cotton. Paid on commission rather than a salary, the distributors received a commission that varied with the credit recovery rate, rising to as much as 21% if there were no defaults at all.

The distributors were required to be local residents and to be cotton farmers themselves. They were trained not only on production, but also on credit management.

The model worked: within 3 years, Dunavant was recovering 93% of its advanced credit. The distributors had the incentive to prevent side-selling, but equally being locals they presumably had more knowledge of who was credit-worthy, and in any case could monitor crops and harvests amongst the local farmers.

SEE APPENDIX C FOR DETAILS AND SOURCES.

In most cases, the smallholders contracted report a range of benefits from the arrangement, including: higher prices for produce that they could not otherwise get, since in some cases the contract gave access to an export market as applied, for example, to honey from Ethiopia; improved productivity since the contract gave them access to inputs and know-how that otherwise would have been difficult or costly to obtain; and the reassurance of having an assured and reliable market for surpluses – that in some cases was preferable to possibly higher prices in the open market, as applied, for example, to farmers selling sorghum to a brewery in Uganda.

Side-selling by contracted farmers is a perennial problem with contracts, one that applied in several cases here, where the contract involved a crop that could be sold in another channel. In at least one case, that of sunflower growers in Uganda, it seems the processor had accepted that a large fraction of the agreed volume – as much as 40% – might eventually be sold to another buyer. Three responses to side-selling were reported.

VegPro in Kenya realised that setting prices for the year without reference to the going rate in the spot market was leading to two problems: when market prices occasionally rose over the fixed price on offer in the contract, farmers would sell on the side; and when the market price dipped, contracted

growers were likely to buy in produce from their neighbours to increase volume. Since VegPro's growers were Global GAP certified while the neighbours almost certainly were not, then this could have led to de-listing by European buyers: a serious risk. VegPro thus switched from annual fixed prices to weekly prices, set in relation to the going market rate. They also employed field supervisors to exercise more control over their contracted growers.

Another response, seen for soya contracts in Togo, was to use moral persuasion through peer groups into which farmers had been organised, appealing to group solidarity and norms of reciprocity to ensure that produce grown with inputs delivered would be sold back.

A third variant, as used by Dunavant cotton in Zambia, was using local knowledge, by appointing local distributors of inputs, picked from out of the local farming community, see Box 3.8, to try to ensure that farmers were of good character.

One of the main reasons smallholders agree to participate in contract farming is the promise of a steady and increased income from the sale of their crops. Not all contracting was predictable and reliable however, see Box 3.9.

Contracting clearly can work well. It can even work when some of the well-known conditions for success, such as the processors having a local monopoly that makes side-selling impossible, do not apply. It is clear that no one model of contracting will be appropriate, that contracting needs adaptation to the crop, the business model and local farmer circumstances, and that adaptation often comes through learning.

OVERCOMING LIMITED ACCESS TO INPUTS AND FINANCE

As reported in section 2.2, some see the limited use of fertiliser and other inputs on food crops in Africa as potentially a poverty trap for smallholders. Many of the cases reviewed include distribution of inputs as part of a contract, but they are usually for export and cash crops where side-selling can be limited.

So these do not necessarily address the problem of the difficulties that small farmers have in obtaining inputs for food crops. Four experiences, however, do: AGRA's programme in northern Ghana; PrOpCom's fertiliser distribution system in Nigeria; SNV's agro-dealers in Zimbabwe; and the OAF in Kenya.

The approaches of AGRA in northern Ghana and SNV in Zimbabwe are similar: they aim to strengthen the performance of local input dealers by providing inventory credit and insurance against losses. They also train input wholesalers and rural dealers on business management and instruct dealers on the use of inputs so they can give informed advice to their farmer customers.

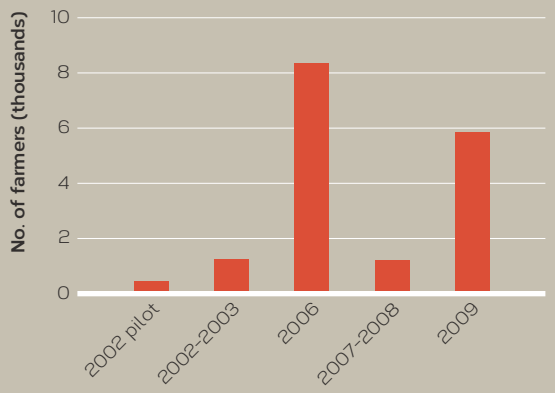
3.9 UNPREDICTABLE CONTRACTS FOR SORGHUM GROWERS IN UGANDA

In Uganda, Nile Breweries contracted supplies of sorghum through an independent company, Afro Kai Ltd (AKL). In the early years of the initiative, farmers were reluctant to adopt the seeds that produced the Epuripur variety needed for brewing. AKL thus began a more aggressive strategy to increase volume by expanding the number of farmers recruited, including some relatively large-scale farmers. This succeeded only too well: by 2006 there was over-supply, with more than double the Nile Breweries' requirements being delivered that year. Contracts were, however, honoured; but some growers were told by AKL that they would not buy sorghum the next year, although they softened the blow by supplying farmers with maize and rice seed.

The company then addressed the problem of potential over-supply by selective distribution of seeds, picking out specific communities for long-term relations, and by more timely communication with farmers. In 2007/08, the number of farmers in the scheme dropped to 1,071; but the company's brewing capacity expanded subsequently so that by 2009, 5,800 farmers were involved – see Figure 3.9.

Figure 3.9 | Farmers contracted to grow Epuripur sorghum for Nile Breweries in Uganda

SOURCE: COMPILED FROM DATA IN JAFFEE ET AL. 2011.



The **AGRA programme in northern Ghana** aims to provide access to technology, inputs, finance and marketing. In the breadth of services this resembles the old parastatals, but unlike those, only one of these services, extension, is provided by the Ministry of Agriculture. The rest are commercially operated. The Savannah Farmers Marketing Company (SFMC) buys crops from farmers. Loans, guaranteed by AGRA, come from banks to finance inputs that in turn are delivered through local dealers – 200 of whom have been trained and given grants to increase their outreach. AGRA also pays for ploughing for the smallholders who cannot afford this.

So far, the system is working. The question still to be answered, however, is how sustainable the systems will be when AGRA withdraws support after the three years of operation programmed. It also remains to be seen how this system will cope with the inevitable year of bad weather when harvests are poor.[20]

SNV in Zimbabwe piloted their scheme in 2009/10, investing US$12,500 in insurance to leverage stocking of inputs locally worth nearly US$545,000. Following this success, the scheme has been increased, to the level of US$112,000 of insurance backing up sales of more than US$9.3M, with almost 700 rural dealers engaged. The unusual detail in this case is that the dealers were not told that insurance was in place, to avoid moral hazard of wilful default on their credit from the wholesalers.

This experience is still relatively new, although it is similar to schemes that operated in rural Zimbabwe before the economic recession began in the late 1990s. It presumably depends on smallholders having the cash to buy inputs. They have certainly been prepared to use inputs. During the most difficult times, donors distributed inputs for free. Later, they gave poor and vulnerable smallholders vouchers to buy inputs at seed fairs and from rural dealers. It remains to be seen, however, whether this has stimulated demand by farmers and supply capacity by local dealers, for input use to be sustained.

In Nigeria, PrOpCom has worked since 2002 to improve the supply of fertiliser to smallholders, in a context where much of the fertiliser is subsidised and consequently tends to get appropriated by larger farmers. The response has been to use Village Promoters to sell small packs (1kg) of fertiliser (urea and NPK) to farmers in their surrounding communities. Demonstration plots run by the promoters educate farmers on use of fertiliser and good farming practices. Promoters take a commission on sales sufficient to reward them for their time. Following pilots, full implementation began in early 2011 across 400 locations: by late 2011 over 4,000 tonnes of fertiliser had been sold in small packs to more than 1 million farmers, with more than 210,000 trained in fertiliser application.

As with Zimbabwe, the programme assumes that there is an unmet demand for fertiliser, and that farmers have the cash to buy – with sales in small packs to meet demand from smallholders with limited cash and land to plant.

One Acre Fund in western Kenya, Rwanda and most recently in Burundi, follows a different path. It procures and distributes inputs, mainly seed and fertiliser for maize and beans, through its own organisation where field officers recruited locally form the point of contact to large groups of farmers, many of them women. Payment for inputs is taken at end of season in the form of maize and beans sold back to One Acre. The Fund is considering the sale of simple crop insurance to address the problem of occasional crop failure.

The programme uses a very tight and lean hierarchy to keep costs down; the idea being if the system can be made economical enough, it can be run without subsidy from the Fund. One Acre is perhaps, of

all the programmes, the one most closely focused on very small-scale farmers with small plots and very few assets: precisely the group for which a poverty trap could arise.

These experiences are still relatively novel. In all four cases, they have apparently overcome potential supply constraints by establishing working channels for access to seed, fertiliser and other inputs. In at least two cases, simple, weather-based insurance is being piloted. Limited working capital is addressed by a form of contract for One Acre, and by bank loans for AGRA. Which of these experiences will stand the test of time and prove sustainable remains to be seen.

SUMMARY: ORGANISING LINKS

The cases reviewed here suggest that some things usually need to be in place to improve links to market.

- There needs to be some actor or agency that takes the initiative to make better links. Two such agents stand out, private firms that have the incentive of profit from an exceptional opportunity and public agencies, more often non-governmental than part of government.
- Given that changes being made may involve some change in policy, regulations (or the way they are interpreted and applied), then forums that bring together stakeholders have often been important to allow the creation of mutual understanding of issues, to forge a consensus on action, and to allocate responsibilities.
- In most cases, smallholders need grouping to interact more effectively with others in the supply chain. Given that this has been achieved, there are reasons for optimism about such collective action, provided that the aims and means of such groups are kept – at least in the early stages – simple and straightforward.

Contracting is often seen, and can work well, although there are a wide range of arrangements seen. These are anything but static models: contracts can change – and indeed should, if there is to be sensible adaptation to emerging facts. Farmers, moreover, enter and leave such schemes more than might be imagined from the sense of a contract as a document, a stated model.

Many of the cases deal with higher value crop and livestock products, whether for export or for the domestic market. Food staples, and the problems that producers of these face in getting effective access to finance and inputs, tend to be left out. Yet there are cases where programmes address these issues, with some success – at least in the short term. Beyond that the question of sustaining the initiatives seen remains to be answered.

3.4 BEYOND THE FRAMEWORK: SOCIAL INCLUSION AND GENDER

The framework considers the elements that make for effective links from smallholders to markets. It does not directly address the question of whether the way that smallholders are linked to markets is equitable. So, what insights into social equity emerge from these cases?

SOCIAL INCLUSION

The cases reviewed all include small-scale family farms, but not necessarily marginal farms. When private firms link to smallholders, it is difficult for small farms to participate in the scheme unless the farm is large enough to allow some land to be switched to production for the market – one tenth of a hectare, however, is often enough. Households also need labour, and perhaps equipment and capital, to devote to the market enterprise. Hence, it is not surprising that in those cases where scheme participants can be compared to the rest of the local rural population, they often have (a little) more land, labour, capital and often education as well.

For example, a seed company in Zimbabwe believed that only farmers with more than one hectare were likely to find participating profitable, so they only drew up contracts with farmers who had at least this much land. Consistent local suppliers of vegetables to SPAR stores in South Africa had on average 13.6 hectares of land, compared to 2.5 hectares for occasional suppliers, and 1.3 hectares for suppliers who left the scheme. More than 40% of the consistent suppliers, furthermore, owned a tractor.

Eagle Lager in Uganda sources sorghum from smallholders, but not all those running the operation are convinced this is viable. The manager of Eagle Lager's partner that handles the link to small-scale sorghum growers stated in a presentation: 'Sustainable long-term operations [are] at risk since production is in the hands of smallholder growers'. There may be a divergence here between the senior management of the international corporation which owns Eagle Lager, who see the arrangement as a good example of corporate social responsibility, and the field managers of the partner who are very probably rewarded for ensuring reliable supplies and given little if any credit for social responsibility.[21]

It is not just the demands of processors and large firms in supply chains that tend to result in marginal farmers being left out. When groups of farmers form, marginal farmers may be excluded deliberately on the grounds of their limited capacity, especially when there is joint liability for loans or for delivering output. For example, the smallest farms – especially those short of labour – were not included in the Soja Nyo (SN) project in Togo since they were not trusted or seen as loyal to the group and its aim of supplying soya to the company.

There are exceptions, however. OAF deliberately tries to work with some of the smaller and more marginal farms: farms where the priority is to produce staples for home consumption. The Fund provides a package and operating method that should allow very poor farms to participate. Most of the farmers enrolled reportedly have between two and five acres (0.8 – 2 hectares), so they are clearly small-scale, but because of a lack of monitoring data, it is not certain what fraction of the most marginal farms participate in the districts where they operate.

That marginal farms may rarely participate does not necessarily mean that they do not benefit from these schemes, albeit indirectly. In several cases, additional jobs have been created both on the farms of commercialised smallholders who have intensified their operations, as well as in processing. Typically horticulture is extremely demanding of field labour, for planting, weeding and harvest. Dairying requires labour: in Kenya it is estimated that every 2,000 litres of additional milk generates an extra job on farms.

Processing plants can be labour intensive as well. The pineapple juice and packing plant of Blue Skies in southern Ghana employs 1,500 workers; in northern Mozambique small-scale cashew shelling plants provide jobs in small rural centres where there are few other opportunities; and 1,500 mainly female workers process shea butter in a factory in Burkina Faso.

GENDER

In Sub-Saharan Africa it is estimated that roughly half the work on farms comes from women (FAO 2011). Rates of inclusion of women vary considerably from case to case. In some, such as OAF, the Uganda potato grower groups, some Rwanda coffee cooperatives and the shea butter nut processors of Burkina Faso, women form the majority. In other cases, and often in some of the more commercial schemes, they are in a small minority as producers.

This does not necessarily imply that women do not benefit: to the extent that they live in households with increased incomes from better market linkages, they may well benefit. Much depends in these cases on how equitably incomes are shared within the household.

Women may benefit indirectly, most notably in jobs. For example, green beans in Kenya and tea harvesting can create jobs for women. Off the farm, soya farming in Togo has led to some women boosting their income by cooking and selling soya-based products in their communities. In Benin, a rice scheme has allowed some women to specialise in parboiling rice for local sale. Although these jobs are often unskilled and probably poorly paid, there are exceptions: in the Nununa Foundation of shea nut producers in Burkina Faso, some women have been trained to take on skilled jobs in processing.

Against these probable and possible benefits, there are concerns that women are often under-represented or absent from the governance of local collectives, and that commercial schemes may allow men to take

control over the more valuable assets of the households and the incomes they generate, while women find themselves obliged to do extra work in the fields and in processing. Little has been done to check whether these fears are justified: most reports contain little analysis of how the schemes affect gender relations. Evaluations of these schemes are scant in any case, and not surprisingly even scantier when it comes to addressing the often quite complicated and difficult-to-monitor changes within the household in access to incomes, work obligations and decision-making that would be needed to assess gender impacts.

In summary, the schemes reviewed here are for the most part, not aimed at improving equity, either social in general or of gender in particular. They do aim to reduce poverty by working with smallholders, most of whom are poor and vulnerable, even if the smallholders directly engaged are not amongst the most poor and vulnerable. The latter group is often excluded. As, often, are women as farmers.

This does not, however, mean that they do not benefit. Nor can we be sure that they are not more disadvantaged by the schemes. The evidence is simply not available. More information is needed on social processes at village and household level, as well as more rigorous assessments of general equilibrium effects as indirect effects work their way through rural economies.

CHAPTER 3 ENDNOTES

13. Formal treatments of forms of linkage in the literature take the other approach: they describe the forms seen, assess their functions, then try to explain why certain forms fit particular circumstances. Although such studies come at the issue from another angle, they reach similar appreciations: no universal form of link exists, much depends on the crop, frequency of transactions, specific assets, prevailing levels of trust, etc. Hence it is no surprise many different forms can be effective in particular circumstances.
14. The burden of illness tends to fall on children disproportionately and hence on the mothers who care for them: rural health is thus a matter of gender equity as well as personal welfare.
15. As a share of the value of air-freighted imports, transport costs fell from around 12% to 8% of value between 1974 and 2004 (World Bank 2008).
16. These are not necessarily sophisticated:

    'Tools such as Porter's Five Forces, the Boston Consulting Group matrix and SWOT analysis have been the staple of management consulting firms for many years. Combined with standard qualitative data collection methods such as focus group discussions, key informant interviews and participatory mapping techniques, such tools are useful for analyzing data to allow value chain stake-holders to make informed decisions.' (Campbell 2010).
17. This section has been written with public agencies in mind. The same issues, however, arise for any private firm as well. A large corporation, for example, faces the same challenges when setting up a unit to source supplies from smallholders.
18. Role culture in the sense of bureaucracy, one of the four archetypes of organisational culture proposed by Handy (1993). Task or matrix culture, on the other hand, would be ideally suited to the demands of this kind of work.
19. Judging leadership from secondary accounts is difficult. That said, in at least three of the cases – Blue Skies, Linking Local Learners, and the One Acre Fund – there are mentions of leaders who have taken risks to translate their visions into reality. There are probably more examples in the cases, including those who have led in a less visible (and extrovert) fashion.

    As a general point, leadership is not always documented in the literature, since judgments of effective leadership tend to be subjective: especially when those reviewing and evaluating draw largely on a current snapshot of the operation since the value of leadership is not easily appreciated at one point in time. Over the longer run, the value of good leaders becomes increasingly apparent, however subjective the criteria may be, since there will be more objective indicators of programme success that can reasonably be attributed at least in part to leadership.
20. There are, however, schemes being started in northern Ghana to provide index-based weather insurance for small-scale farmers, where farmers received a pay-out when rainfall is below stated thresholds measured at local weather stations. Research shows that farmers value insurance highly. (Karlan et al. 2012)
21. The same has been seen in Central America where a US multinational declared its intention to source from small farmers, but saw little cooperation from local managers who were not prepared to change their sources if that might have compromised the reliability or quality of supply.

Donors are well placed to encourage learning from initiatives – by reviewing experiences and disseminating the lessons.

4

CONCLUSIONS AND DISCUSSION

4.1 KEY POINTS

In most low income countries of Africa, development needs to include the majority of farmers who are smallholders. Currently many smallholders farm at low productivity, in yields per hectare or returns to labour, yet often the technology already exists to greatly increase productivity. This technology often goes unused because inputs are too costly and returns for surplus produce are too low and this arises because smallholders lack effective links to markets for produce, inputs and credit. Markets in rural areas all too often do not work well for small-scale farmers: costs of information given uncertainties mean that too little is supplied, at too high a cost. Overcoming these limitations is one of the main challenges in rural Africa.

An objection here is that most farmers in Africa make use of markets, the links exist, and therefore there is no need for public action. The problem, however, is that many of the links are incomplete, ineffective or inequitable. These failings may not entirely stop development, but they introduce a friction with costs in foregone growth, development and poverty reduction. Hence, the concern to remove the friction of poor links to markets, convinced that this will stimulate more investment by farmers and those who want to work with them, more innovation and higher productivity – leading to faster agricultural growth with benefits for the wider economy, for rural people engaged with farming, and thus, by derivation, for many people who are poor and vulnerable.

The importance of improved links is widely recognised in practice. Across the continent many agencies, projects, groups and individuals are trying to improve the links. Reviews of these experiences report similar conclusions.

In this report, common conclusions have been organised in a framework that sees forming more effective links as involving three considerations about the business case, the approach to linking and how to organise links.

Links will only work if there is a return on investment for smallholder farmers and for their partners in the supply chains. That depends, above all, on governments fulfilling basic roles for the economy: the creation of an enabling investment climate; and the provision of rural public goods and transport in particular. If that sounds demanding, it should not: conditions do not have to be perfect, the key is to remove the worst failings, such as the high implicit taxation of agriculture that prevailed in the 1970s and that slowed agricultural growth at that time. The corollary applies as well: once these conditions are met, (some) progress is likely by private initiative alone.

The business case will be stronger if those working with smallholders recognise that often the most promising markets, by size, requirements for produce and reliability, are the rapidly growing domestic and regional markets of Africa, especially for higher-value complements to staple foods. High value export markets, especially for niches such as organic and fair-traded produce, may be attractive options for some

smallholders, but not for the large majority. Those working with smallholders need also to recognise that priorities for farmers may be in production or marketing, in maximising gains or reducing risk – priorities which will probably change with time.

Approaches to linking need to enable and facilitate, not to substitute for the initiatives of farmers, traders and processors, while offering temporary essential support for new ventures. Intervention needs to be seen as a learning process that will encounter obstacles to be overcome. There are challenges here for agencies working with smallholders in operating flexibly, over the relatively long term, and with the possibility of initiatives failing. Good leadership can help marry these needs to the demands of most formal organisations for planning and control.

The third aspect is about how links are organised. Catalysts and champions have to be found to take initiatives; farmers usually need to be grouped to cut down on transactions costs. Forums in value-chains can help to focus attention on bottlenecks, to generate consensus on action, and to reform policies and regulations where needed.

The actual arrangements or models by which smallholders do link to markets are various, even if often the cases documented involve some form of contracting. However, rather than focusing on the models, the key appears to be process: of bringing together the three elements of the framework effectively.

THE LIMITS TO MARKETS: SOCIAL INCLUSION

The experiences reviewed here are, for the most part, not necessarily as socially inclusive as might be desired. They reach smallholders many of whom are poor and vulnerable, to be sure; but most do not reach the very poor and highly vulnerable.

Could they do so? It is difficult to argue with the logic of the private initiatives: that small farmers will not benefit from market links unless they have enough land, labour, capital and skills to make use of the links, and perhaps also to take some additional risk of market engagement. The priorities for the very poor and highly vulnerable probably lie in other fields: in stimulating the demand for labour, in building their assets, in improving their health and education and in providing social protection, especially for those unable to work.

It is probably then a mistake to see market linkages as necessarily involving multiple wins. As one review puts it:

> Overall ... learning suggests we should not continue to expect multiple wins – on poverty reduction, food security, security of supply, ecosystem services and rural development – from the single-minded approach of including farmers and their organisations in value chains and 'empowering' them in markets as beneficiaries of external initiatives. To get the future right for the majority of small-scale producers

> who cannot readily participate in modern value chains, or for the many youth with aspirations out of farming, we must recognise other layers of the picture. (Vorley et al. 2012)

This is not to say that some of the initiatives reviewed could not be combined with the additional measures to reach the poorest: such as helping them rent or buy additional land, providing them with initial capital grants, giving them insurance against risks that would otherwise deter their engagement, etc. Some of them might then also benefit from market links, but that would require increased effort, time and budgets. Market links will not provide a cheap, short cut to social inclusion.

SCALING UP

How can the best of the initiatives observed be scaled up or replicated more widely? There is a danger in this question: that of expecting that the answer lies in a particular and specific arrangement – a particular form of contracting, or an ideal agricultural cooperative, for example. Looking to scale up particular forms, to quote Martin Evans[22], can be a will o' the wisp: there will never be a single method, firm, agency that does it: development is a matter of incremental change. It is the processes and approaches, not forms, that lead to effective links.

So, what has to be done to improve links on a wider scale? To begin, some of the more important matters, such as an enabling investment climate, apply at the national scale and do not require further scaling. Provision of rural public goods can clearly be specific to locations, but the policy arena is again national: that is where decisions on overall priorities and budgets are made.[23]

What then does need scaling – in the sense of replication and adaptation – are processes of enabling, facilitation and learning; supported by a necessary architecture that includes catalysts, forums to consider specific problems and that sees farmer groups formed. The agenda for public action then might be reduced to the following considerations.

One, catalysts can be private actors or public agencies. Private actors need incentives: those seen are usually those of an exceptional business opportunity – in exporting or in replacing costly imports by less costly domestic production. Firms will probably only invest when they judge that they have sufficient competitive advantage to take advantage of the opportunity for long enough to recoup their extra investment in arranging supplies from smallholders. How then, are they to be prevented from using their market power to take undue advantage of smallholders? The best answer to this awkward question comes from Webber and Labaste (2010): make sure that markets are contestable even if not currently contested, so that the threat of competition exercises a discipline.

The other catalysts are public agencies, typically non-governmental organisations. They will make the effort on the basis of their mission, provided of course that they can be funded. As will be set out in the

next section, there are good reasons to invest in their efforts, above all in looking to make more effective links for food crops.

Forums for value-chains are another factor in some of the effective experiences. Provided they are set up so that they have the backing of key players and they are prepared to consider the evidence and engage with other actors, then they look to be worth encouraging.

As important as anything else in looking for replication of success is to encourage innovation, learning and dissemination of experiences. To date, the investment in learning and dissemination has not matched the extent of practical initiatives in the field.

This needs to be accompanied by a more general effort to monitor changes taking place in rural Africa. While change in rural Africa may not be as fast as it could be, to imagine that little change is taking place misleads. On the contrary, improvements are taking place, as would seem the case in parts of Eastern and Southern Africa, to judge from recent reports that most farmers have a wide choice of traders looking for maize, even in remote villages (Jayne et al. 2011); and that Kenyan farmers increasingly find that inputs and services are available much closer to their farms than they were a decade ago (Chamberlin and Jayne 2009), and especially so for farmers in the more remote areas.

THE COST OF INITIATIVE: PUBLIC SUBSIDIES

For higher-value produce there may be little need for public action, beyond governments – and those who work with them – fulfilling their basic public roles. Yet for staple crops, there seem to be no private initiatives that address the lack of access to inputs for food crops faced by many smallholders. If there are, they do not show up in the literature, including semi-formal publications, or in discussions with those actively working in the field. The four programmes that do so, see section 3.3, depend on public support.

Is there then a case for a public subsidy to the kind of programmes reviewed? There may be. The social gains may be larger than the private ones, as Dorward (2009) has pointed out in relation to fertiliser subsidies in Malawi. A public intervention may lead to additional production that, in a landlocked market where prices within the band marked by import and export parity prices depend on local harvests, pushes down prices to the benefit of poor households that are net buyers of staple foods. This applies quite widely in inland Africa, where high transport costs mean that the price bands can be large, so that domestic harvests have a major influence on domestic prices.

If that is accepted, then the question is less one of subsidy or not, but rather of how small a subsidy may be sufficient to ensure that poor farmers get access to inputs. Some public subsidy schemes look expensive, such as the Zambian fertiliser subsidies, since there are considerable leakages to those who can well afford

the inputs. OAF's approach, on the other hand, looks economical. The subsidy here does not seem to cover the costs of the inputs, so much as the headquarters functions of the programme, including planning, monitoring and evaluation. Studies are needed to compare costs, but it is a working assumption that a relatively small NGO has more incentives to control costs than do, for example, government ministries or AGRA with its considerable resources from foundations and donors.

4.2 RECOMMENDATIONS

Even if not all questions can be answered, there are clear recommendations that stem from this review that apply to governments, donors, non-governmental organisations and large-scale agricultural business.

FOR GOVERNMENTS

Focusing first and foremost on the two basic public roles of setting an enabling investment climate and providing rural public goods has paid off handsomely for countries in Asia, and for some countries in Africa. The advice does not require perfection that would be difficult for most low income countries to achieve; but rather, to make sure that any gross failings and deficiencies are remedied.

Recognise that in providing rural public goods, most of the budget will not be going through the ministry of agriculture, but through ministries of transport, education, health and water.

Set up forums for value-chains with the participation of key players. Make sure that they have the political support and active engagement of ministers. Be prepared to react to findings, above all in being prepared to change policies and regulations.

Consider establishing challenge funds that can support initiatives to make more effective links. These may be in the form of open and competitive sources of finance, or else administered through ministry units that scout for opportunities and allocate funds accordingly.

Monitor the results of these initiatives, learn from them and publish the results.

FOR DONORS

Support governments in fulfilling their basic roles, both in technical assistance on the investment climate, and in funding investment in rural public goods in low income countries where public resources are currently insufficient.

Beware of projects to promote the engagement of smallholders with high-value, export markets. While some will make sense, beware that these may cause actions that potentially benefit many more smallholders to be lost to view. Reading Vorley et al. 2012 would be a useful antidote.

Take processes in market engagement seriously. Fast, certain, failure-free, programmable results cannot be expected. If this cannot be handled by the organisational structures and systems – and indeed culture – of the agency, then look to fund agencies that can act flexibly and take risks. Funding NGOs directly, or setting up challenge funds is one way to do this. Investing in a portfolio of efforts gives the best chance that there will be sufficient success to justify the outlay.

Encourage learning. Look to fund reviews of experience, documentation and dissemination of lessons. Link practitioners, look for innovative ways to communicate.

FOR NON-GOVERNMENTAL ORGANISATIONS

Monitor, learn, document and publish.

Deal with the possibilities of failure. Having a portfolio of activities is one answer. Beware of depending too much on particular projects and models: keep options open, stay flexible.

Participate in stakeholder forums.

FOR LARGE-SCALE AGRICULTURAL INVESTORS

Smallholders can be suppliers to processors, exporters and retailers, but finding effective ways to do this may take time and encounter setbacks.

It may not be necessary to acquire land and go into farming, with the corresponding investment costs and risks; even if there are exceptions, such as nucleus estates, to guarantee throughput to processing plants and to act as demonstrations for out-growers.

CHAPTER 4 ENDNOTES

22. Comments from Martin Evans, Chair of Farm Africa and highly experienced agri-business specialist, 25 February 2013.
23. Discussions about rural roads, agricultural research and rural education do not normally begin in terms of this or that region: they are first and foremost about the priority and budgets allocated to these sector activities, after which come considerations of the geographical programming.

APPENDIX A: WORKSHOPS HELD

In collaboration with the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), and the Future Agricultures Consortium (FAC), A4I and ODI hosted three workshops in Southern, Eastern, and Western Africa in mid-2012 to present and gauge response to the emerging findings of the Leaping & Learning study, and to learn from practitioners working in the field on connecting smallholder farmers to markets.

The workshops included case study presentations from practitioners working in the field, and 'smallholder cafe' sessions, where workshop participants in small groups discussed two questions, before feeding back on their discussion to the larger group. The questions discussed in the 'smallholder café' sessions were: *What works linking smallholders to markets?* and *What needs to be done to promote links from smallholders to markets?*

Attendees came largely from non-governmental organisations providing technical assistance to farmers, such as SNV and ACDI-VOCA. Also present were academics, public sector and donor government representatives.

Summaries of some key points from the workshops follow. More detail on each workshop is available for download on the ODI website, and blogs describing them are available on the A4I website – see below for links.

SOUTHERN AFRICA REGIONAL WORKSHOP

Dr Lindiwe Majele Sibanda, CEO and Head of Diplomatic Mission of FANRPAN opened the day with a presentation on Linking Farmers to Markets in Southern Africa.

A case study was presented by **Dyborn Chibonga**, CEO of the National Smallholder Farmers' Association of Malawi (NASFAM), presenting NASFAM's work in rejuvenating Malawi's groundnut exports. A value-chain approach, from seeds, planting and harvest, to buying, warehousing, lab testing, grading and processing before sales to export, local or retail markets was used, including an intervention in Aflatoxin management.

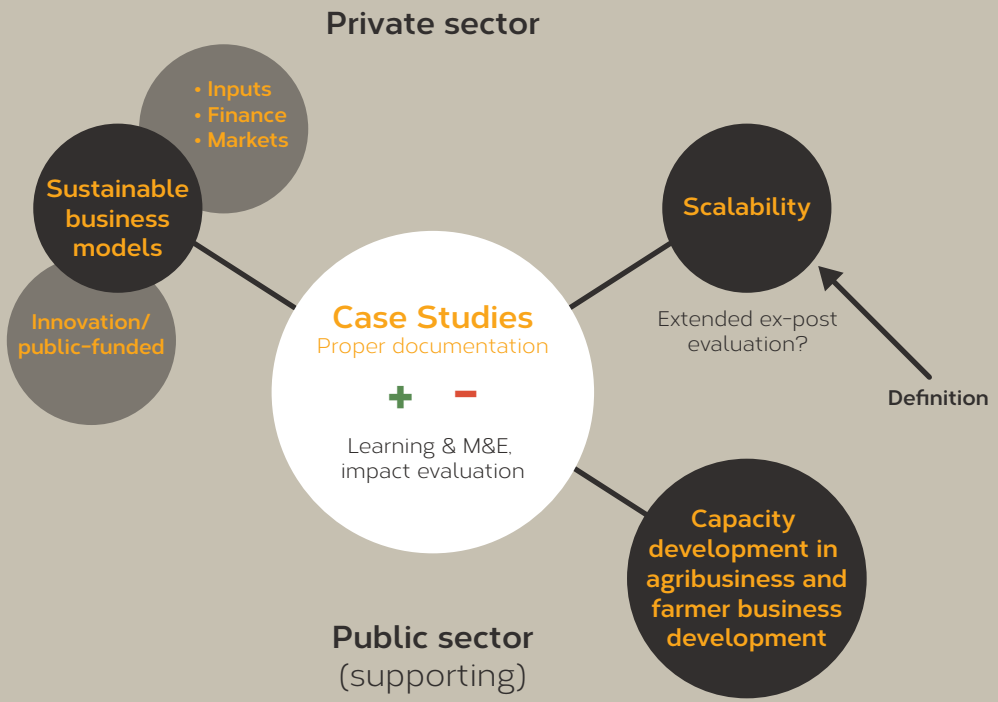
WORKSHOP	WORKSHOP REPORT (ODI)	BLOG ON THE WORKSHOP (A4I)
Southern Africa Held in Johannesburg on July 9th, 2012, with participants from Malawi, Mozambique, South Africa, Swaziland, Zambia and Zimbabwe.	http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/events-presentations/1310.pdf	http://ag4impact.wordpress.com/2012/07/10/asking-the-experts-connecting-smallholders-to-markets-in-southern-africa/
Eastern Africa Held in Nairobi on July 11th, 2012, with participants from Burundi, Ethiopia, Kenya, Rwanda and Uganda.	http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/events-presentations/1311.pdf	http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/events-presentations/1311.pdf
Western Africa Held in Accra on July 13th, 2012, with participants from in Ghana, Mali and Nigeria.	http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/events-presentations/1309.pdf	http://ag4impact.wordpress.com/2012/07/14/making-it-happen-connecting-smallholders-to-markets-in-western-africa/

Sithembile Maunze, Senior Economic Development Advisor of SNV presented a case study on SNV's work with rural agro-dealers in Zimbabwe – the Rural Agro-dealers Restocking Programme (RARP) – this is also discussed in case 26 in Annex C. She also discussed the Zimbabwe Agricultural Development Trust (ZADT), a vehicle to provide soft capital for the benefit of smallholder farmers in agricultural value-chains

Some key points that came up in the smallholder café discussions included:

- Agricultural programmes might not reach everybody, particularly the poorest; for them there should be social programmes in place.
- Building trust among partners is key.

One of the café tables came up with this schema



- There is a real benefit in having retailers, private sector, farmers and so forth together in the room for discussion.
- Simple things, like financial literacy, are needed; there is an underinvestment on the Human Resources side.Governments need to invest in rural roads and provide the basics.
- Production has to be demand-driven and assessed for profitability.
- Donors need to sustain efforts; the 3-year model is a big constraint – it could take 5 to 10 years for programmes to become sustainable, but the patience of donors is shorter.
- Developing horticulture is different to developing grains. It is also interesting to link horticulture and livestock as cropping systems.
- Once farmer associations form, it is easier for industry to penetrate.
- The role of NGOs like SNV is that of a stepping stone. This changes farmers' contract arrangements after a while, so it's like a stage that moves them on to being independent.
- There a need to coordinate and map out what's going on in the field to avoid duplication. There is also a need to learn from monitoring and reporting what is going on.
- Business models have to be sustainable but this may take a long time, particularly where overcoming systemic problems.
- We need frameworks by which we can identify best practice when we see it; case studies are central. Properly documented case studies are weak. There needs to be more monitoring and evaluation (MandE) and impact evaluation 2 or 3 years later.

EASTERN AFRICA REGIONAL WORKSHOP

Dr Wilson Songa, Agriculture Secretary, Ministry of Agriculture, Government of Kenya opened the day with a presentation. He emphasised small-scale farming as a business as well as a way of life, and went on to talk about transformations in marketing systems and elements for ensuring success in linking smallholder farmers to markets.

A case study was presented by **Stephanie Hanson** from One Acre Fund describing One Acre's four-part service model: distribution of farm inputs within 2 kilometres of where farmers live, financing, extension and market facilitation.

Florence Kariuki of Equity bank presented a case on how Equity Bank links to smallholder famers in agribusiness value-chain financing. Equity bank targets small-scale producers chiefly supporting them in the purchase of farm inputs, such as seeds, fertilisers and chemicals.

Some key points that came up in the smallholder café discussions among participants included:

- One problem to overcome is that of transport; physical infrastructure is necessary - especially the last 30km from village to markets which costs so much.
- In Kenya there are 6 or 8 ministries involved in agriculture already. Nutrition is very important but if the agricultural issues are so spread out, how can the health issues marry up?
- Farmers should diversify; this is a good strategy to increase food security, but specialisation too brings benefits; there is a paradox of diversity: food productivity needs to be raised to allow specialist crops for market.
- Adopt a value-chain approach; a clear understanding of all the actors is needed. Create strategic partnerships along the value-chain; build synergies, add value.

- Exit strategies must be addressed from the beginning – in terms of time, budgets and sustainability.
- If the public extension isn't there, farmers should have the option to pay for private extension.
- ICT in agriculture can be very effective. For instance, with livestock: the Maasai in Tanzania now have mobile phones to monitor sales of livestock, so they are changing, building houses, owning property, motorbikes and so forth because they don't sell at a loss. If tele-centres could be available for other crops, farmers could monitor prices for other crops and livestock.
- After projects have run their course, how do you ensure that extension service providers are able to learn the emerging technologies and are able to support farmers on the ground so it becomes a sustainable framework?
- Brokers have developed a very bad name 'he makes you broke' – but they have a very important function. Laws are weak and don't recognise brokers properly – they need to be engaged.
- How do you address the issues of seasonality in terms of supplies, because that is a challenge across most of the value-chains.
- Value addition: for example for a perishable fruit like mangoes, post-harvest losses are very high, had experiences like supporting a cooperative society to be able to install a processing unit through a credit guarantee, and now they are processing pulp which they are selling to Del Monte, they have a contract, and at the same time they are selling fresh mangoes, to address the issues of post-harvest losses.

WESTERN AFRICA REGIONAL WORKSHOP

Dr K.Y. Amoako, Founder and President of African Center for Economic Transformation (ACET) opened the day with a speech. He asked a series of WHY questions: Why can't we feed ourselves? Why do farmers receive such a small fraction of the final value of their produce? Why hasn't Africa being able to use its tremendous agriculture potential as a stepping stone for economic transformation? And beyond the WHY, a series of HOW questions: How do we promote the production of crops? How do we create the enabling conditions for smallholders to benefit from the opportunities created by commercial agriculture? And how does government play a role in this process?

A case study was presented by **Lassina Konaté** from SNV World. He gave an in-depth presentation about SNV World's work with cotton chains in francophone African countries.

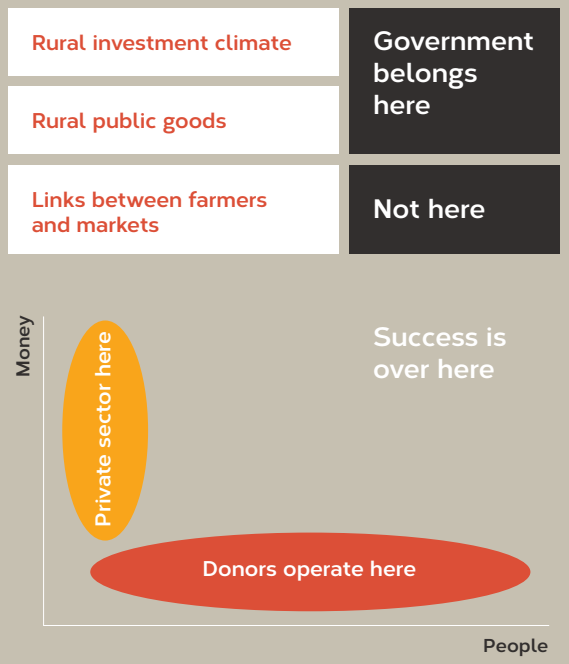
Awusi Mahama Natoma of SNV Ghana then presented a case study about effective shea value-chain development in Ghana.

Some key points that came up in the smallholder café discussions among participants included:

- Donors must stop undermining sustainable development by giving things away for free. Planning for long-term sustainability is critical. One way is to ask farmers to contribute to a social fund linked to incentives. Farmers provide some funds separate to what they pay as membership, so they learn to pay for services.
- We need to come up with a good exit strategy: e.g. Technoserve have an exit strategy that worked in the sorghum market with Guinness. Technoserve proved the agricultural market worked, and after four years, Guinness believed the model was robust enough.
- Agro-dealers need to serve the farmer community so farmers don't have to travel.

- Build demand among farmers for inputs – also include financing credit. Psychology of always buying the cheapest thing needs countering. There is a lack of awareness regarding payback for investing. It is important that farmers become aware that extra investment in good quality inputs will produce benefits.
- To avoid side-selling this you have a buyer monitoring system and a hub that all the farmers bring the crop to.
- Whatever we do we should be gender sensitive, because in all of the fields where we're working there is a gender imbalance. Also need to consider other demographic realities e.g. growing rural youth population.
- Donor project periods and delivery expectations need to move from 1 or 2 year projects to 3 to 5 year projects: though it's more like 5 to 10 years to prove if something works or not. In the aeroplane analogy: the runway is 3 to 4 years, and then takeoff is 4 to 5 years, therefore the whole project = 8 to 9 years
- Finance is crucial: need to engage with the banks to show that perceived risk is much higher than actual risk.

Two schemas the café tables came up with



APPENDIX B: INDICES OF INVESTMENT CLIMATE AND PUBLIC GOODS BY COUNTRY

How can the rural investment climate and supply of rural public goods be compared across countries?

Rural investment climate: critical dimensions include rural security, degree of net assistance to agriculture, inflation, policy instability and predictability, risk of expropriation and political co-option. Two measures were taken:

- For the national investment climate, the **World Economic Forum's Global Competitiveness Index** for which annual estimates are made for 33 African countries since 2004 was used, one of the most wide-ranging of measures of business environment, starting with the macro-economy (Christy et al. 2009).

- For specific incentives that apply to farming, we used the **net rate of assistance to agriculture** indices that Kym Anderson and colleagues have devised. This covers 21 countries in Africa and assesses the degree of protection afforded by trade policy and exchange rates, as well as public spending on the sector. For a long time nominal rates of protection have been a strong factor affecting the vigour of agriculture in Africa where typically in the past the NRA has been massively negative for some countries, with farmers taxed well over 50% in effect – and worse for some export crops.

- [*Alternative measures might be the inflation rate and the degree of exchange rate overvaluation measured by the real exchange rate compared to the nominal, but there is no point is this when we have the GCI to call on.*]

For rural public goods, two measures have been taken as indicative:

- **Road length divided by population**. This has the advantage that road length in urban areas will be limited, so that this index is much influenced by the roads built in rural areas. Road length and population are taken from World Development Indicators. These statistics are available for almost all African countries; and,

- **Public spending on agricultural research**, expressed as a fraction of the agricultural gross domestic product. Estimates for this come from the ASTI database at IFPRI, for around 32 African countries.

These should be strong indicators: Asian studies indicate that spending on rural roads and agricultural research correlate with agricultural growth (Fan et al. 2010).

The four sets of measurements can be found for 14 countries, including most of the largest and most important in Africa south of the Sahara. Gaps are to be found where expected: DR Congo heads the list. There are another dozen countries for which three indicators are present, so that imperfect indices can still be computed.

See Table A1 for the scores.

The scores for the four indicators for the 14 countries were normalised so for each index we have a measure of departure from the mean in standard deviations. This then allows indices to be summed. By summing the two measures of rural investment climate (RIC) and the two for RPG, each country then has a score on these two dimensions.

This then allows each country to be plotted in a two-dimensional space, with the axes placed at the mean scores (see overleaf).

This produces a four quadrant diagram that can be summarised thus, with examples in the quadrants:

	POOR RIC	**GOOD RIC**
Good Rural Public Goods	Zimbabwe	Botswana
Poor Rural Public Goods	Nigeria	Mozambique

Note, however, that the countries as plotted form other possible clusters, as follows:

- Four countries have a good climate and exceptional public goods (extreme NE points): Botswana, Mauritius, Namibia and South Africa;

Figure A1 | Scatter plot of country scores for rural investment climate and rural public goods

NOTE: THE DARKER DIAMONDS ARE THE ORIGINAL 14 COUNTRIES WITH ALL SCORES; THE LIGHTER CIRCLES ARE THE LESS PERFECT INDICES FOR ANOTHER 12 COUNTRIES.

- A group of seven have a poor climate, but above average public goods: Burkina Faso, Burundi, Chad, Côte d'Ivoire, Mauretania, Zambia, Zimbabwe;
- Two countries have a good climate but in public goods they are close to the average: Kenya and Rwanda; while
- Most the rest are not that far from the origin, and indeed, Senegal has scores almost exactly at the means.

The countries and the quadrants to which they belong are mapped below:

This framework will be used to try and get a spread of cases across countries that reflect the four possible outcomes in the quadrants. Clearly there are some countries omitted, but most of these countries are not those for which case studies have been written.

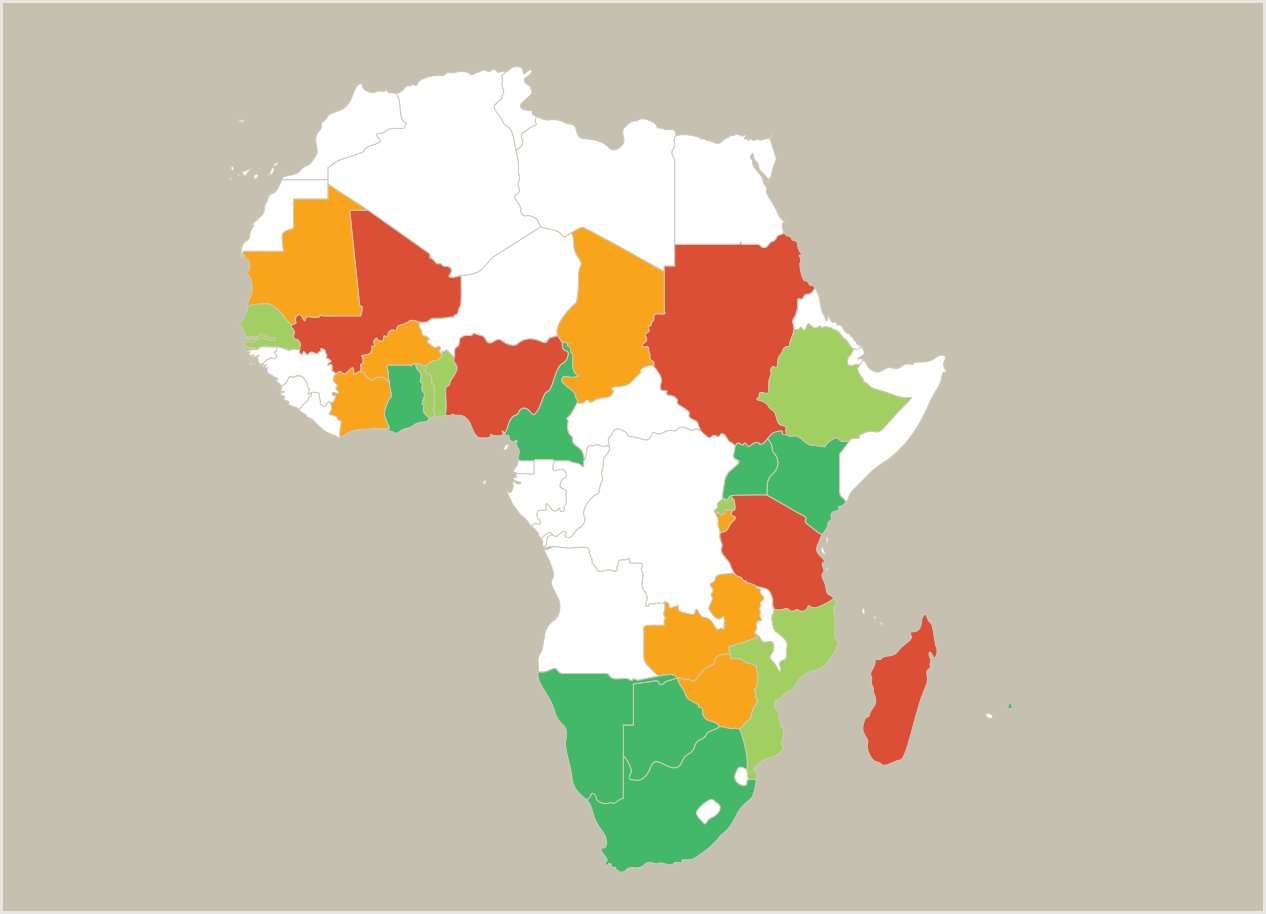


Table A1 | Country scores on indices

	GCI	NRA 2000/05	AG RES SPEND	ROAD DENSITY	PAVED ROAD DENSITY	COUNT	GCI	NRA 2000/05	AG RES SPEND	ROAD DENSITY	RIC INDEX	RPG INDEX
Benin	3.78	-0.36%	0.55	2,483	236	5	0.67	0.35	-0.33	-0.27	1.02	-0.61
Burkina Faso	3.25	0.02%	0.47	6,481	270	5	-1.3	0.38	-0.47	1.68	-0.92	1.2
Côte d'Ivoire	3.37	-25.25%	0.6	4,479	384	5	-0.85	-1.9	-0.24	0.7	-2.76	0.46
Ethiopia	3.76	-9.85%	0.37	501	65	5	0.62	-0.51	-0.65	-1.24	0.11	-1.89
Ghana	3.65	-1.35%	0.69	3,299	603	5	0.19	0.26	-0.08	0.12	0.45	0.04
Kenya	3.82	9.27%	1.26	1,769	244	5	0.84	1.22	0.93	-0.62	2.06	0.31
Madagascar	3.36	0.82%	0.27	2,776	322	5	-0.88	0.45	-0.83	-0.13	-0.43	-0.96
Mali	3.39	0.12%	0.72	1,462	289	5	-0.79	0.39	-0.03	-0.77	-0.4	-0.8
Mozambique	3.31	14.91%	0.51	1,461	288	5	-1.08	1.73	-0.41	-0.77	0.65	-1.18
Nigeria	3.45	-5.43%	0.36	1,377	207	5	-0.57	-0.11	-0.67	-0.81	-0.69	-1.48
Senegal	3.7	-7.51%	0.9	1,324	400	5	0.37	-0.3	0.29	-0.84	0.07	-0.55
South Africa	4.34	2.10%	2.53	7,682	1,444	5	2.8	0.57	3.2	2.26	3.37	5.46
Tanzania	3.56	-12.44%	0.35	2,293	173	5	-0.13	-0.74	-0.69	-0.37	-0.88	-1.06
Uganda	3.56	0.37%	1.17	2,475	569	5	-0.15	0.41	0.78	-0.28	0.27	0.5
Zambia	3.67	-28.47%	0.3	5,795	1,275	5	0.27	-2.19	-0.79	1.34	-1.92	0.56

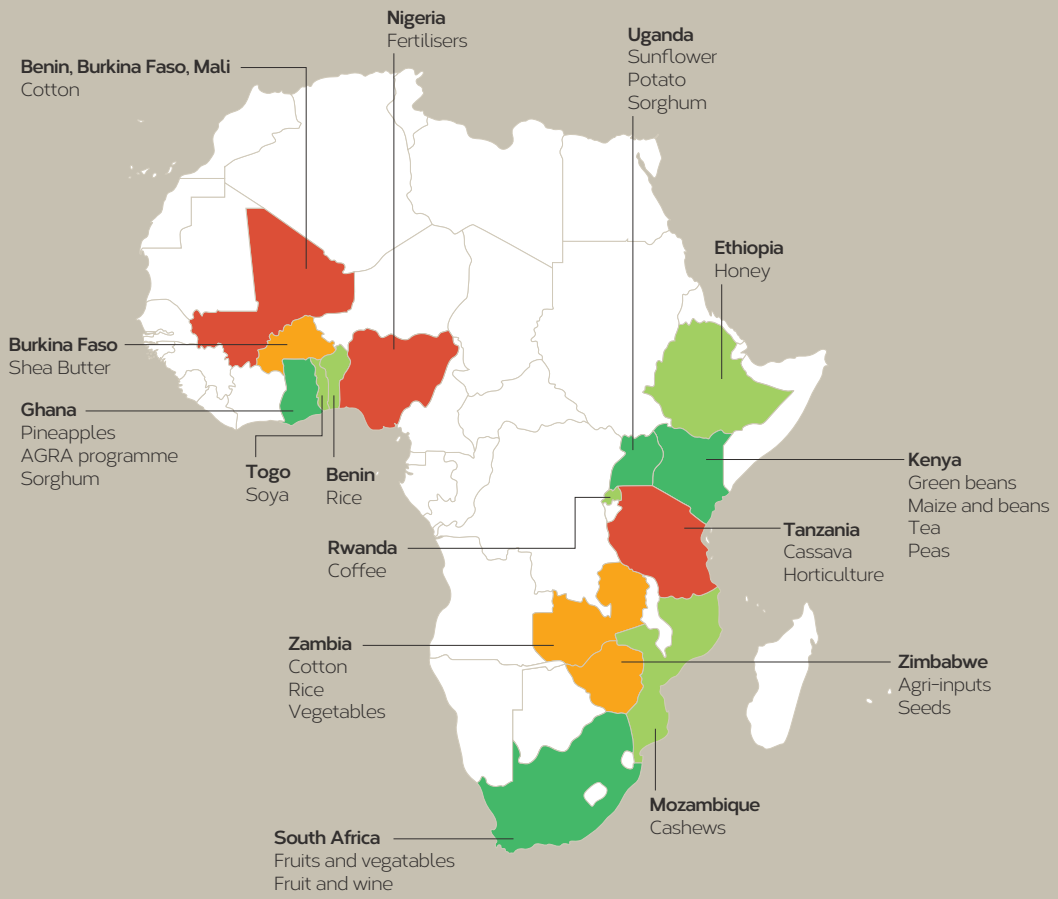
	GCI	NRA 2000/05	AG RES SPEND	ROAD DENSITY	PAVED ROAD DENSITY	COUNT	GCI	NRA 2000/05	AG RES SPEND	ROAD DENSITY	RIC INDEX	RPG INDEX
Mean	3.6	-4.20%	0.74	3,044	451							
Standard deviation (SD)	0.27	11.06%	0.56	2,051	382							
Median	3.56	-0.36%	0.55	2,475	289		-0.13	0.35	-0.33	-0.28	0.07	-0.55
Correlation								0.04		0.42		0.46
Botswana	4.05		5.21	13,243	4511	4	1.69		7.96	4.97	1.69	12.94
Burundi	2.95		1.26	1,835	161	4	-2.44		0.93	-0.59	-2.44	0.34
Cameroon	3.61	-0.14%		2,259	287	4	0.03	0.37		-0.38	0.4	-0.38
Chad	2.87	-0.06%		3,877	31	4	-2.74	0.37		0.41	-2.37	0.41
Gambia, The	3.84		0.62	2,253	435	4	0.92		-0.2	-0.39	0.92	-0.59
Mauritania	3.2		1.43	3,120	909	4	-1.5		1.24	0.04	-1.5	1.28
Mauritius	4.31		3.94	1,624	1600	4	2.7		5.72	-0.69	2.7	5.02
Namibia	4		2.1	26,029	3582	4	1.51		2.43	11.2	1.51	13.63
Rwanda	4.19		0.58	1,397	265	4	2.22		-0.27	-0.8	2.22	-1.08
Sudan		-11.93%	0.27	308	112	4		-0.7	-0.84	-1.33	-0.7	-2.17
Togo		-0.57%	0.41	1,771	497	4		0.33	-0.58	-0.62	0.33	-1.2
Zimbabwe	3.33	-38.73%		7,754	1473	4	-1.02	-3.12		2.3	-4.14	2.3

APPENDIX C: CASE STUDIES

The figure below illustrates the countries cases were taken from and the commodities involved.

Full text for the 31 case studies researched for this report can be downloaded directly from the ODI website, at the following link: **www.odi.org.uk/leapandlearn**

Figure A2 | Map of Africa locating the cases



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