

SMALLHOLDER INTEGRATION IN CHANGING FOOD MARKETS



Smallholder integration in changing food markets

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About this report

Recent increases in the levels and volatility of food prices have created significant challenges to efforts to reduce levels of food insecurity both at national and household levels. As a result, significant political attention has been given to the promotion of improvements in food staples productivity in developing countries, both to offset the rapidly increasing costs of food imports, and to stimulate increased incomes and hence food security status at the household level.

This attention has been manifested both at country level, with many developing countries placing food staples at the centre of their agriculture development programmes, and at the global level, for example in the context of the recent G20 initiatives.

A central focus of these initiatives has been to develop and advocate mechanisms that will result in increased levels of production by smallholder producers through the adoption of productivity — enhancing technology underpinned by improved research and development, facilitated access to critical inputs and production — related risk reduction measures.

Less attention has been given to the significant heterogeneity of smallholder producers, both in terms of their access to the productive assets required to be able to increase production and, perhaps more importantly, in terms of their willingness to increase production for sale.

A key message of this report is that without better understanding the determinants of smallholders' participation in agricultural markets, and formulating appropriate measures to facilitate improved participation, initiatives seeking to promote the adoption of productivity enhancing technology by smallholder producers are likely to have limited success.








Part 1 examines the characteristics of smallholder farming from a market perspective, explaining that different categories of smallholder producer face widely different sets of issues and constraints to market participation, stressing the mutual reinforcement of productivity growth and market integration, and setting this in a dynamic context of the constrained choices facing different producers. It then sets up the policy challenges facing governments in attempting to alleviate the constraints facing these producers.

Part 2 considers the determinants of smallholder participation in rapidly evolving agricultural markets, considering the categories of constraints and risks faced in increasing levels of production for sale in different market outlets and the mechanisms through which the choices made by different market participants shape smallholders' integration into markets.

Part 3 introduces examples of the types of solutions that may be required to facilitate the participation of smallholders in markets at different levels of formalization, considering arrangements such as producer organizations in aggregating smallholder production to market, and then the potential of mechanisms, or support services, such as market-based risk management instruments, market information systems and extension.

Part 4 then turns to examine how such arrangements and mechanisms might best be delivered to the smallholder sector, with prominence given to the role of the public sector, broadly defined to include government, donors and civil society.

Key messages

-  Smallholders' participation in markets is crucially important for improved food security and poverty reduction.
-  Attempts to improve smallholder productivity will have limited success if smallholder linkages to markets are not strengthened simultaneously.
-  Limited smallholder participation in markets is not necessarily a result of a lack of commercial orientation *per se*, but the result of constrained choice in a risky environment.
-  Smallholders are very heterogeneous, facing different types of constraints and opportunities, and will react differently to new market opportunities.
-  Public policy interventions are generally needed to foster smallholder market integration.
-  Policy interventions need to be prioritized and sequenced according to evidence-based diagnosis of the constraints faced by different categories of smallholders.
-  Evidence-based policy-making minimizes the risks of policy failure.

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Foreword

Small-scale agriculture is the main source of food in the developing world, producing up to 80 percent of the food consumed in many developing countries, notably in sub-Saharan Africa and Asia. With poor rural households making up two-thirds of the global population earning less than \$1.25 per day, smallholder agriculture is also an important source of income underpinning the livelihoods of vast numbers of poor people. Smallholders and small family farms are therefore central to an inclusive development process and their contribution is crucial to food security. However, that contribution is limited by low levels of productivity that constrain smallholders' ability to ensure their own livelihoods and food security and to support the food security of the rest of the population.

Smallholder agriculture is characterized by small production volumes of variable quality that reflect limited access to inputs and finance, low levels of investment and limited access to, and knowledge of, improved agricultural technologies and practices. High levels of price and production risk and uncertainty and limited access to tools to manage them deter investment in more productive new technologies that would enable smallholders to produce surpluses for sale in markets. Inadequate infrastructure, high costs of storage and transportation and non-competitive markets also militate against production of a marketable surplus. Given these constraints, it is not surprising that the supply response of many small producers to recent high food prices has been muted. Production, consumption and marketing decisions by smallholders are the outcome of constrained choices, made with imperfect information in a highly risky environment.

The importance of smallholder agriculture and the constraints which limit its productivity are widely acknowledged. G20 governments have recently called for strengthening agricultural research and innovation, paying special attention to the needs of smallholders and small family farms and creating the enabling environment to encourage public and private investment to support them.

Raising agricultural productivity and strengthening resilience are also seen as key to responding to the challenges of food price volatility. Smallholder producers need to cope with price volatility and reduce their own vulnerability, but they also need to contribute to mitigating the impacts of price volatility for the benefit of all. This implies a need for a significant supply response and enhanced integration into markets.

Raising smallholder productivity is obviously a strategic necessity, but attempts to raise productivity will have limited success if smallholder linkages to markets are not strengthened simultaneously. Similarly, strengthening market linkages will have little benefit with existing low levels of productivity. Even in the case of productivity improvement, the common emphasis on increasing research and development is too simplistic. Improving smallholder productivity is not only about moving the technology frontier outward. It is also about closing the gap between the frontier and what smallholder producers actually achieve in practice. In some cases, especially in sub-Saharan Africa, smallholder producers can be achieving as little as thirty percent of the yields that could be achieved under field conditions. Inadequate linkages to efficient and inclusive markets is often a key reason for low levels of adoption of available productivity-increasing technologies.

Reducing poverty and enhancing food security therefore require greater smallholder integration into markets and more inclusive value chains since, without these, adoption of new technologies and productivity growth will be limited. However, markets and value chains are not static. They are also changing with the growing importance of the more formal sector, partly but not only as a result of the spread of supermarkets. Higher quality standards, higher value products, traceability and contracts are all becoming part of the ever more demanding environment that smallholders need to adapt to, even in their local markets.

Smallholders and small family farms are not homogeneous and face different sets of constraints to participation in markets. Since



smallholders differ significantly in the way in which they participate in markets and in the extent to which these markets are integrated with other domestic, regional and international markets, the design of policy interventions aimed at encouraging greater levels of smallholder production for sale in markets needs to take better account of this heterogeneity. Encouraging semi-subsistence producers to participate more in local markets and supporting more commercialized producers to access sophisticated value chains raise different issues. There is therefore no “one size fits all” solution to encourage greater market participation.

Enhanced participation cannot be achieved without effective policies and strategies that create and sustain an enabling environment for integrating small producers into markets. This includes improved governance and transparency, improved infrastructure, making available relevant advice and information and provision of risk management tools and stable policies, including international trade policies. Government support is essential in all these respects but specific interventions need to be based on a thorough understanding of the constraints on smallholder productivity and market participation. Governments can also play a direct role in creating market opportunities and linking smallholders to markets through public food procurement schemes such as the Food Purchase Programme (PAA) in Brazil and there is great potential for such schemes to provide a less risky entry into markets. While governments have a key responsibility in creating an enabling environment for greater market participation, other players — smallholders themselves, their organizations and the private sector — all have important roles to play.

There has been much research into the constraints on improving smallholder productivity and this has provided the basis for better understanding of agricultural innovation systems and the design of technical and economic interventions to encourage the use of productivity-enhancing

technologies. However, the same cannot be said for smallholder market integration where the reasons for low participation of small producers in markets are still little understood and, as a result, the basis for effective policy and strategy choice is relatively weak.

This report provides an accessible but comprehensive review of smallholder market participation based on FAO research. It explores why smallholder participation in markets is limited and describes appropriate policies, strategies and institutional innovations to encourage and support greater participation.

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Part 1

Smallholder participation in markets: what are the issues?

- ▶ Defining smallholder agriculture from a market perspective
- ▶ Smallholder producers, markets and productivity
- ▶ Policy challenges to enhanced smallholder market participation





- *May 2012, Mpatheni, Swaziland - Women selling locally grown vegetables to commuters along the main road. FAO Project: GCP/SWA/016/EC - Swaziland Agricultural Development Project (SADP). The project seeks to improve smallholder production and marketing systems for enhanced food security and quality of life for rural households.*

Defining smallholder agriculture from a market perspective

Smallholder agriculture is key to food security for two pivotal reasons: as a source of food and as a source of income for large numbers of people living in poverty. Smallholder agriculture – including crop farming, livestock, husbandry, forestry and fisheries – provides the bulk of the food consumed in vast regions of the developing world. Smallholder agriculture is also the basis for the livelihoods of two-thirds of the global population currently living in poverty.

Smallholder agriculture is practised by a highly heterogeneous group of producers. The diversity of smallholders within and across locations is such that the term “smallholder” resists a universal definition. A review of the literature reveals that smallholders are often defined in relation to the sector in which they operate, that smallholders share some or all of the characteristics compiled in the figure opposite, and that clustered across various characteristics, smallholders tend to be classified in different categories depending on the kind of questions to which answers are sought by analysts and policy makers.

Just as smallholders are a heterogeneous group, the markets in which they participate are also diverse in terms of their size, geographic location, connectivity to other markets, power relations between market players, and institutional setting.

The figure lists different sets of characteristics of smallholder agriculture and of the markets that they have access to that can act as determinants of the extent to which smallholders participate as sellers and/or buyers.

This report focuses on the implications of smallholder heterogeneity with respect to their participation in markets. With this focus in mind, and drawing on Barrett (2010), smallholder heterogeneity can be considered along three dimensions:

- (i) the smallholder household's access to, and the productivity of, assets, including natural resources, labour, and capital, *vis-à-vis* their subsistence needs will determine both their ability and their willingness to increase production for sale in markets;
- (ii) the connectivity of smallholders to different markets, which can be considered in terms of remoteness (defined broadly to include geographical proximity knowledge asymmetries and power relationships, and the costs of commerce, or “transaction costs”) will modify the incentives that they face;
- (iii) the functionality of these markets: many local food markets are volatile due to the low volumes transacted, and their limited integration with regional or international markets, which limits the market's ability to modify demand and/or supply side shocks. Volatility can affect the level and riskiness of returns to the producer. Where markets are not well integrated, returns to increased output can diminish quickly as prices plummet, significantly affecting incentives for market participation and, consequently, for productivity-enhancing technology adoption.

Smallholder households therefore differ significantly in the way in which they participate in markets and in the extent to which these markets offer attractive opportunities. The design of policy interventions aimed at encouraging increased smallholder participation needs to take better account of these differences.



SMALLHOLDER CHARACTERISTICS

- Constrained choice
- Risk averse
- Consumption and production decisions not easily separable
- Subsistence agriculture
- Farming as a livelihood

- Weather related
- Pests and diseases
- Prices (input, output, food)
- Civil conflict
- Volatile public sector policies
- Malfeasance and corruption
- Macroeconomic shocks

RESOURCE BASE

- Predominant use of family labour
- Land constrained
- Water constrained
- Unskilled labour
- Poor soil fertility
- Limited public sector support

DECISION MAKING

- Low labour productivity
- High land productivity
- High productivity of capital
- Technically efficient
- Resilient agriculture
- Tacit knowledge prevails
- Little use of purchased inputs

TECHNOLOGY

RISK FACTORS

- Dominance of net food buyers
- Move in/out of poverty
- Recurrent cash flow deficit
- Poverty traps
- Few off-farm opportunities
- Low educational level

FOOD SECURITY

CONECTIVITY TO MARKETS

MARKET ORIENTATION

- High transaction costs
- Little marketable surplus
- Low storage capacity
- Low volumes of produce
- High seasonality of produce
- Low product quality control

MARKET FUNCTIONALITY

- Isolated
- Regional
- Global

SIZE

- Volume
- Seasonality
- Volatility

INTEGRATION

POWER RELATIONS

- Contractual arrangements

INSTITUTIONAL SETTING

- Infrastructure
- Legal framework

Smallholder producers, markets and productivity

Smallholder productivity improvements¹ are key in ensuring the sustainability of inclusive and broad-based agricultural transformation processes. Increased marketed production can help not only in stabilizing local market prices, providing improved incentives for investment, but also in the creation of opportunities for households to generate cash surpluses, which when spent or reinvested within the rural economy can generate significant multiplier effects.

This process evolves in the market place: productivity growth and smallholder market integration not only go together, but are also mutually reinforcing.

Different smallholders face different incentives and constraints to productivity growth and market integration. Some smallholders have the capability and the willingness to participate in markets; others do not. Processes of smallholder integration to food markets and of technical change are well documented, but the determinants of their patterns of market participation are yet to be adequately understood. This disconnect has compromised the formulation of successful policies aimed at facilitating greater smallholder market participation.

The constraints to participation of different types of smallholder are not only multi-faceted, but change as a result of market developments. While, traditionally, domestic food markets have been conceptualised and analysed as spot market transactions, an increasing number of opportunities are becoming available to smallholders for participating in, and benefiting from, processes of value chain development. Although the focus of value chain development has often been on higher value products for trade in more lucrative markets, whether export or higher income segments of domestic markets, processes of value chain development are also significant in basic food product chains. An example is the formalization of staple grain value chains in

Eastern and Southern Africa, including the harmonization of standards and the potential use of commodity exchanges and warehouse receipt systems.

Case study examples of success in the development of product-specific value chains, inclusive of smallholders, reveal that this process has often been slow, and made possible only following the sequential alleviation of key constraints, generally underpinned by appropriate public sector support. Developing an inclusive chain can be a painfully slow process, requiring patience and trust from both buyer and producer, sometimes requiring the presence of an honest broker of the relationships and guardian of business confidentiality, for example an NGO. In many cases where development has been short lived, or confined to a subset of stakeholders, appropriate support from the public sector was absent.

A dynamic perspective: pathways available to smallholders

Any policy set aligned with a longer-term strategy supportive of agricultural sector development needs to take a dynamic perspective which recognises that different categories of smallholder producer will follow, either by choice or by compulsion, different pathways during agricultural sector transformation.

Faced with the same set of policy induced market incentives, such as encouraging increased production of staple foods, some smallholders will intensify production on existing plots through the adoption of new technologies or practices; others will increase the amount of land under the production of the crop in question. Some smallholders will be constrained from benefiting from improved opportunities due to their remoteness from these markets, their access to productive assets, and specific household-level constraints such as dependency structures and educational levels.

Not all producers will therefore seek to increase production for sale in markets.

¹ Including through efficiency gains, technological change and economies of scale.



Indeed, some will benefit from increased demand for their labour from those smallholders who are increasing production, reducing the amount of time allocated to their own land and, consequently, their participation as sellers of food staples.

Smallholder participation in food markets is therefore typically characterised by constrained choice, and this choice is critically dependent upon their ability and willingness to participate in input and output markets and on the functionality of those markets that they are able to access. Smallholders are likely to increase their engagement in markets as sellers of food when well-functioning markets give them appropriate incentives, they have access to, and the ability to use assets productively, and efficient infrastructure allows them to transport their product to market at reasonable cost. However, if one component is missing they can't, or won't be willing to, participate to the same extent.

The factors that determine the extent of participation in markets vary significantly both spatially across household types and locations, and temporally as agricultural transformation takes place. The challenge for policy makers is to determine which factors to target to ensure appropriate emphasis and sequencing, namely which constraints are holding back the process of productivity-led transformation for which categories of smallholders, in order to identify where the greatest payoffs to policy interventions are.

The process of structural transformation is not always smooth. As markets evolve, timing becomes an essential element of success. Incentives change, supply, demand and prices change, and the reality of business opportunities shifts from product to product as market developments take place.

For example, a first step for semi-subsistence producers in remote locations

may be to facilitate participation in local markets. As producers become more commercially oriented, facilitating participation in processes of value chain development, which may require support to assist producers in meeting more rigorous standards, or engaging in the more complex contractual arrangements that may be required to participate effectively in more developed value chains will become the focus of support.

Smallholders' propensity to increase production for market

Ensuring broad based smallholder participation in markets may necessitate giving emphasis to the development of basic staple food chains, where small farmers are likely to be more heavily involved. However, strategies aimed at developing food staples value chains need to consider the propensity of smallholder producers to generate marketable surpluses of those that are essentially food security crops.

In Zambia, while cassava is extensively grown in some regions of the country, almost 90 percent of total production is for subsistence (non-marketed). This factor has constrained the adoption of improved varieties deemed necessary to achieve levels and consistency required for more

commercially oriented production (Poole *et al.*, 2010).

Market pull is therefore critical and evidence suggests that smallholders do respond to market demand. For example, a large number of episodes of growth have occurred in various agricultural products in the exports across the Pacific region (squash in Tonga, passion fruit in Samoa, vanilla in Papua New Guinea, kava in Tonga, Fiji and Samoa). Often, however, these episodes have not been sustained, and smallholders have been quick to pull back, suggesting that the market must also have the capacity to remain profitable and accessible in the longer term. Therefore an essential precondition for any successful agricultural enterprise is that there must be a sustained

market for the product that will assure farmers consistent and attractive financial benefits, and give farmers the confidence to make the necessary investments and changes in practice to supply these markets (FAO, 2010).

In the past, much focus on agriculture development has been on supply side issues without sufficient attention paid to how the farmer is going to market the new surplus. Basically, if a farmer cannot sell a product that is surplus to subsistence requirements, why grow it? In times of a strong and sustained market demand farmers will also more actively seek and adopt productivity-enhancing technology and management methods.

Policy challenges to enhanced smallholder market participation

Governments have a key role to play in alleviating market failures that prevent smallholders from participating in markets, but they must do so in a way that allows producers to make choices consistent with broader social, economic and environmental objectives. Policy should therefore be formulated in a way that ensures that external costs to the society do not accrue from poor, and potentially damaging, private sector investment choices in the agriculture sector. This is particularly so where agriculture plays a primary role in food security, the provision of social safety nets, and social cohesion.

Faced with an array of demands on scarce budgetary and human resources, the public sector must address a number of questions.

Where to focus support?

Policy objectives are multiple and cover both efficiency (i.e. income generation,

employment growth) and non efficiency (i.e. reducing levels of poverty and food insecurity rates) objectives. Policies can be in support of either objective depending on the context, but generally, the number of sub-sectors, chains or chain components in which greater levels of smallholder participation could be beneficial will outweigh the resources available to the public sector. Governments need to make decisions as to whether to “pick winners”, or to develop a conducive environment that benefits most. Decisions will also be required as to the level at which interventions are made (see next page).

What type of support?

Often stakeholders complain that there is “no government policy support towards their sector”. Perceptions related to government support are always important, but not all support will, or should be, in the form of direct subsidy to the product, the producer or

The key role of traditional agriculture: transformation in the Pacific

Government strategies aimed at driving greater commercialization should not result in significant shifts in production technology or farming practices away from traditional systems, and the benefits that these systems bring in terms of resilience, and the provision of environmental and cultural services.

The first responsibility of the small farmer in the Pacific Island countries is to secure food for the family. Subsistence food production in traditional farming systems together with subsistence and artisanal fishing continues to be the basis of food security in the region and provides resilience against external shocks, either economic (price spikes, global recession) or natural (cyclones, floods, droughts, pests and diseases, etc.).

McGregor *et al.*, (2009) have highlighted evidence of the importance of traditional smallholder farming systems in safeguarding food security, which includes:

- the rapid recovery of the Samoan economy following successive natural (cyclones) and biological (taro leaf blight) disasters with other traditional crops filling the void;
- the remarkable turnaround of the Fijian economy following the devastating ‘100 year’ drought of 1997/98;
- the tempering of the humanitarian disaster associated with the ethnic conflict in Solomon Islands and the civil war in Bougainville; and
- the production response of Papua New Guinea root crop growers to the sharp increase in imported grain prices following the depreciation of the national currency.

A key challenge for the region is developing pathways for commercialization of traditional farming systems, which allow increased cash-generating opportunities for rural households, without sacrificing family and community cohesion and ultimately food security.



the trader. Governments also have a facilitating role that can indirectly provide support to the sector in less visible ways. Critical decisions are therefore required on the balance between the direct and indirect provision of both public and private goods and services.

How to provide support?

Decisions as to how to provide support are interrelated with the “where” and “what” to support, and appropriate approaches are likely to be context-specific. Whilst there are models which might be followed or adapted, design of support mechanisms will generally require data collection and analysis to identify the most appropriate mechanisms for a given situation.

Public sector interventions that facilitate market participation will vary across contexts depending in large part upon the stage of agricultural transformation. Where the level of commercialization is limited, provision of the basic conditions such as on-farm and off-farm infrastructure and market information is likely to be a focus for the public sector. This role will require careful consideration in terms of the relative responsibilities for funding, construction, ownership and management of this infrastructure. Where these conditions are adequate, but input and output markets are, by virtue of low throughput and limited integration, susceptible to volatility and pose risks for participants, the public sector can play an important role in stimulating market activity through the provision of appropriate incentives and risk-sharing mechanisms. When markets are functioning adequately, the public sector needs to take care not to crowd out private sector engagement, and a reduced role focusing on, for example, market regulation, market information systems and quality assurance may become more appropriate.

In the absence of consideration of appropriate sequencing of interventions to lift critical constraints, there are significant risks that inappropriate policies will be implemented, particularly where formulated in situations of weak or inadequate information on domestic production and market activities. Governments need to recognise and adapt their changing role in supporting smallholder-based transformation. The strategic challenge is to facilitate, rather than crowd out private sector involvement, but at the same time, not to encourage public sector withdrawal at too early a stage of market development.

The appropriate blend of interventions will vary not only by place and by crop type, but over time. As the sector becomes more commercialized, with fewer producers engaged in subsistence or near subsistence production, and as government objectives with respect to the agriculture sector shift from those focused on food security and poverty reduction, to objectives more concerned with the wider set of services that the sector can provide, the appropriate level of intervention is likely to change.

Levels of policy intervention

Adding to the already difficult task of identifying which constraints require alleviation is the choice of how best to address them. The impact on agricultural production of policies at different levels of intervention will differ.

Macroeconomic and sectoral level policies, for example trade policies which maintain higher price levels in domestic markets, may work for farmers already

operating in well integrated markets and who have the capacity to react to changing price incentives. However, without also considering the response of net-consuming households and/or addressing the constraints inhibiting market participation of other categories of smallholder, the potential beneficial impacts of such policies can be limited to the more commercially oriented farmers (Barrett, 2010).

Where the integration of producers into markets is limited, interventions to reduce barriers to market participation will often have a greater payoff than price policy. Such interventions might be addressed at (i) improving connectivity to markets, for example through improved market information systems, by improving feeder roads or reducing the fees that traders need to pay to shift product between markets and (ii) facilitating the productive use of on-farm assets in the generation of higher and more consistent levels of marketable surpluses through, for example, training in alternative production methods.

Who benefits from market intervention?

In many African countries, the proportion of smallholders categorized as net sellers of maize, a main staple food crop, is estimated to be less than a third of all producers, with the majority of smallholders, while often selling some maize soon after harvest to generate cash income, needing to purchase more from the market than they sell during the full marketing year. Of those that are classified as net sellers, it is often the case that a much smaller proportion account for the bulk of sales, particularly to more integrated markets. In evaluating the impacts of alternative policy approaches, the status of different smallholder categories needs closer attention.

In Zambia, recent maize harvests have been well above average levels. This has coincided with Food Reserve Agency interventions to purchase maize at prices well above market prices and an expansion of the Farmer Input Support Programme. Yet only 36 percent of smallholders were expected to sell any maize in 2010/11, of which 26 percent were net sellers and only 3.3 percent accounted for half of all maize sales (Nkonde *et al.*, 2011). For the latter

group of producers the FRA policy has rewarded efforts to increase production to reap the gains of the higher prices, but for other groups of smallholders, particularly net buyers, the implications are less clear. In addition, private sector traders have been reluctant to invest in improving market infrastructure in an uncertain trade and market policy environment, meaning that the development of domestic markets may have been negatively affected.

A second strand of the maize support policy to increased maize production was the Farmer Input Support Programme, which provided subsidized seed and fertilizer to producers. Although the programme has contributed to increased production, larger producers have received a disproportionate share of the inputs, in part as a result of their ability to generate increased surplus for sale (Jayne *et al.*, 2011). Evidence suggests that improved targeting of the programme to poorer households could significantly reduce their food insecurity, since increased production by these farmers, even if not sold, would reduce their need to purchase maize.

Part 2

Determinants and patterns of smallholder market participation

- ▶ Market formalization — the changing nature of food markets
- ▶ Constraints to smallholder integration in more formal markets
- ▶ Understanding smallholder participation in formal markets





- February 2012, Santiago, Chile. This market participates in the programme that promotes food safety and traceability implemented by the Agrarian Innovation Foundation and the Association of Open Market Fairs of Chile. There are over 900 markets of this kind in Chile, and they are very common across all Latin America.

Market formalization — the changing nature of food markets

As economies develop, the share of the population engaged in agricultural production declines and households increasingly turn away from self-provisioning and informal or small-scale markets towards large-scale commercial supply chains to source the food and other agricultural products that they consume. At the same time, agricultural development necessarily entails productivity growth such that farmers' harvests increasingly exceed their own consumption needs, yielding a marketable surplus of growing scale. The combination of growing commercial demand and supply reaches a scale that induces the emergence of modern marketing channels that employ sophisticated management methods, such as costly grading and standards requirements or formal and often interlinked contracts that enable a commercial marketing intermediary to profitably add value to raw commodities through transport, storage and/or processing. Farmers whose comparative advantage permits them to tap the latent demand of more distant markets rendered accessible by emergent agricultural value chains typically improve their productivity and profitability, thereby further accelerating development. The emergence of modern agricultural value chains based on contracting and explicit grades and standards, and exhibiting considerable geographic reach is thus both cause and consequence of agricultural and rural development.

Formal and informal food markets are differentiated by the extent to which the norms and procedures that govern market transactions are codified (written) or tacit (oral). In general, formal and informal markets coexist in space and time with various degrees of incidence. Informal markets may evolve into formal markets, for example when sanitary requirements impose restrictions on the selling of specific food items that do not comply with new legislation, or when new market institutions such as warehouse receipts systems are implemented. Such changes, referred to as market formalization, are accelerating in developing countries, notably with the increasing penetration of

supermarkets and regional and global value chains.

Though formal markets are becoming more influential, informal markets are still highly relevant for developing countries. Efforts to quantify the importance of informal markets to their economies have been controversial due to disagreements in the definition of informal economic activities and estimation procedures. Nevertheless, the consensus amongst analysts is that most food consumed in developing countries today is still channeled through informal markets.

Boom-bust markets

In Ghana a rapid scaling up of participation in the pineapple market fostered by high profits enjoyed by early entrants in the 1990s led to a striking crash. Though some attribution was given to a shift in European consumer preferences, favouring a different variety of pineapple over that supplied by Ghana, consultations with local growers suggest the crash was at least as much caused by market saturation. In either case, smallholder growers had typically relied on informal, oral contracts that were readily breached by buyers when the market collapsed in 2003-4. This drove many pineapple growers away from the value chain, especially the most recent entrants. It is worth noting, moreover, that cooperative formation and expansion in Ghana clearly lagged market participation, as government and NGOs began promoting (and subsidizing) cooperatives in response to the apparent profitability of smallholder pineapple cultivation. Thus, well-meaning external efforts to help those farmers who had been initially bypassed by agro-exporters to "join the party" may have inadvertently induced catastrophic losses for those same late entrants to the market.



Informal markets are often perceived as inefficient, unpredictable and trading food of a lower quality than would be accepted by formal markets. However, these preconceptions need to be better understood and weighed against their multifunctional role within the economies of developing countries. Informal markets are largely stocked with staples produced by local smallholders. Staples not only take up a major share of household food expenditures, but also account for the bulk of agricultural gross domestic product, and have a pivotal role for ensuring food security. Informal markets, for example, can play a key role in food shortage mitigation following crop failure, notably in remote rural areas where the majority of the population relies on subsistence agriculture and where households participate in markets primarily as buyers of food staples.

All the same, market formalization has become a reality for the developing world. In many developing country regions, strong vertical integration along value chains for the production of some food products, and the specification of quality and food safety controls, have become the norm rather than the exception. Increasingly, contractual arrangements specify how much, when and what should be produced. Some contracts even spell out the technology that should be used, for example for the production of certified organic products.

Two core debates dominate this issue: first whether smallholders are able and willing to engage in formal market transactions, and second, and perhaps even more importantly, whether doing so is to their benefit. A brief discussion of the former is presented below, while the analytical approach presented later on in this report (Part 2.3), sheds some light on the latter concern.

Readers should not assume that market formalization is a synonym for market functionality. Contractual arrangements that specify volumes, quality and prices represent a higher degree of market formalization compared to spot market transactions. However, they can also represent a poor degree of market functionality if chain governance is biased towards one particular stakeholder who decides when, what, how much and at which price the product is to be sold. Indeed, the implications of market formalization for the inclusion and returns to different stakeholders have become key concerns of analysts, policy makers and, above all, agricultural producers.

Smallholder producers face specific difficulties in participating in formal markets, primarily related to their inability to supply consistent and adequate volumes of sufficient quality to satisfy contractual arrangements, given the many price and production related risks that they face. In the Pacific Island Countries, FAO has worked with producers and traders to increase the proportion of fruits and vegetables demanded by the tourism sector that are sourced locally. Tourism is a growing sector in many Pacific Island Countries (PICs), but hotels and restaurants tend to import the bulk of their requirements from outside the region to ensure quality and consistency. Enabling smallholder producers to link to these markets, through targeted extension programmes and investments in market related infrastructure, such as storage and bulking centres and improved market information, serves the dual purpose of increasing their incomes and saving the countries scarce foreign exchange.

Governments can facilitate the transformation of informal into formal markets, but must do so in a way that allows for the participation of larger numbers of producers who currently use informal market outlets without creating difficulties for consumers who rely on these markets, and who may be faced with more sporadic volumes and volatile prices as they become less important outlets for sellers. Policies that

provide for improved market intelligence services, enhanced transport and storage infrastructure, may be a first step in facilitating the level of aggregation required for smallholder participation in formal markets, and where they can benefit from improved access to more sophisticated mechanisms for offsetting the price related risks that they face.

Appropriate marketing systems

Modern marketing is difficult without modern production. Attempts to transplant a marketing system developed to handle the specialized output of commercial farmers into a rural community quite different in character and outlook, may only lead to difficulties.

Source: FAO, 1958

Open markets in Latin America

Open markets (ferias) are part of the urban landscape of densely populated neighborhoods of Latin America. Survey data for Chile reveals that up to 70 percent of all fruits and vegetables, and 40 percent of all fresh fish sold is channeled through street markets. Clearly, with rising obesity rates in Latin America and a high incidence of poverty, street markets have an important role for food security, as they typically sell fresh products at lower prices. Compared to more formal value chains, the volumes traded in street markets are smaller, product quality more diverse, and trading permits more relaxed. In addition, fewer intermediaries are involved, which allows smallholders to capture, at least in

theory, a larger share of the total revenue generated. Recognizing their social and economic importance, municipalities assign public spaces for street vendors (feriantes) to sell at no or very low cost. Many Latin American governments have in recent years also prioritized improving the competitiveness of these traditional marketing channels, and have focused on enhancing smallholder integration into street markets. Government support includes technical assistance and capacity building to improve food safety, support to producer organizations to scale up volumes, and the provision of comprehensive market information services.

Constraints to smallholder integration into more formal markets

Not all farmers can take advantage of market developments. Smallholder farmers' access to evolving agricultural markets – especially to value chains – is commonly constrained. Geographic barriers such as remoteness, or biophysical limits to productivity (e.g. due to water availability) may make it too costly to participate in modern marketing channels or may limit the amount of surplus production that smallholders can sell. Similarly, limited productive asset holdings – of land, livestock, labour, critical equipment – may constrain smallholders' capacity to generate a sufficient level and consistency of marketable surplus. The list of constraints is extensive, but an attempt at capturing the most relevant is detailed in the Figure on the opposite page.

Existing institutional arrangements under which farmers can enter into developing marketing channels – related to enforcement of contracts, including product grades and standards, access to credit, insurance and technical information through extension services – likewise affect the feasibility and attractiveness of entry into modern markets. For example, smallholder growers in developing countries wanting to participate in global value chains are required to comply with voluntary standards. Yet compliance is difficult because it requires considerable informational and organizational resources, which many smallholders may lack.

High recurrent costs associated with compliance have led to the view that certification by smallholders is only possible under certain circumstances. Various estimations, data, studies and results relating to the costs of compliance and certification of small-scale farmers show that a certain minimum production is necessary for a smallholder to be competitive in formal markets.

Smallholders often receive little technical support regarding certification, as traders tend to work with a limited number of larger "preferred suppliers" who are able to guarantee a large and continuous supply of produce. Sunk and running costs of compliance are nontrivial, and are worth the

expense only after a minimum volume of produce is delivered.

Notwithstanding these constraints, smallholders often take sub-optimal decisions on what and how much to produce because of their propensity to avoid risk. Farmers are at risk of adverse weather, pests and diseases, volatile prices, volatile policy environments. The incidence of risk varies from one country to another, and the capacity to deal with such risks varies across different farmer categories.

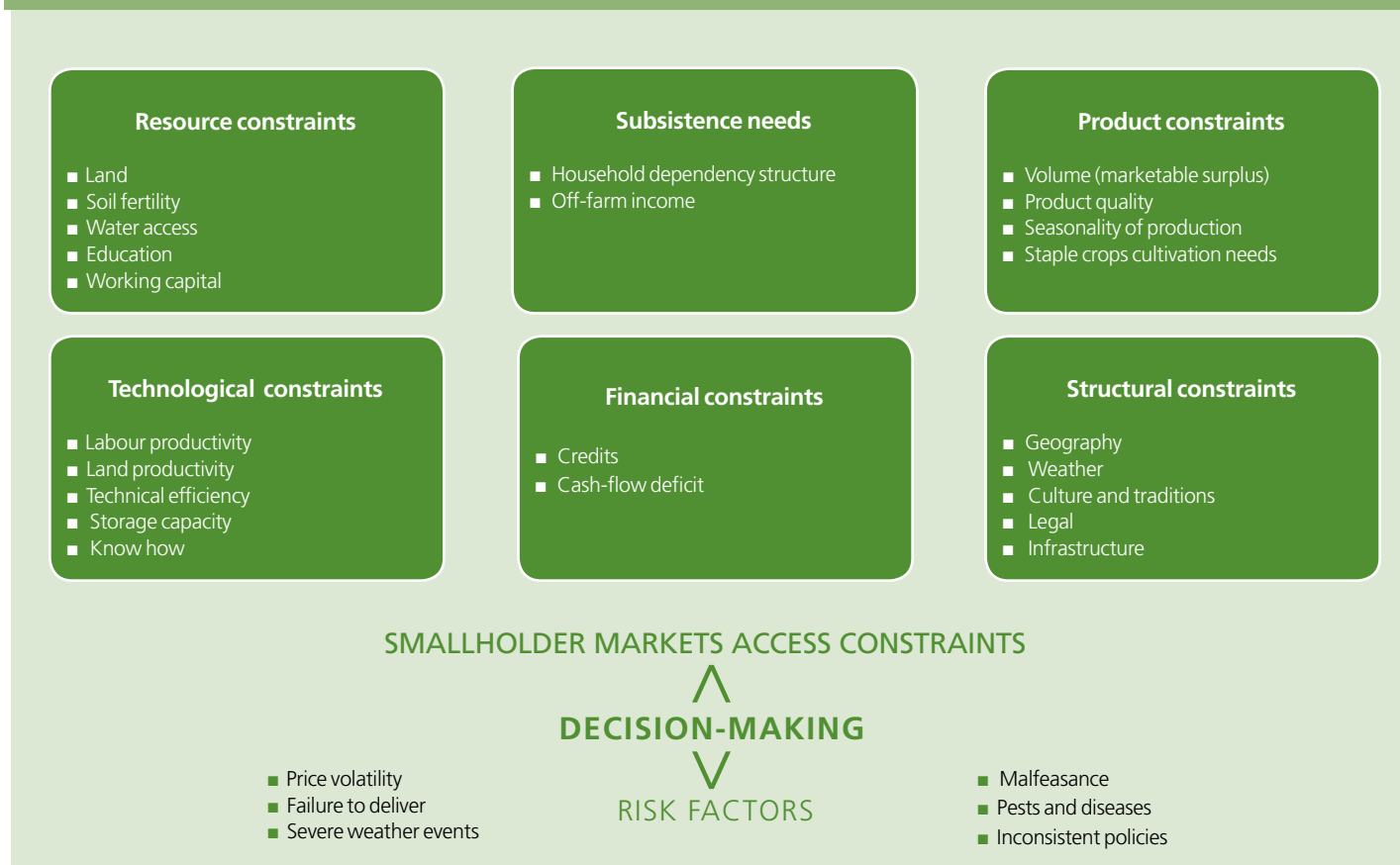
The risks facing smallholders associated with market integration are often argued to be disproportionately high. This is due to difficulties faced in accessing market information, credit and other inputs, and technical assistance, which together with inefficient and sometimes conflicting policies, laws and regulations and weak infrastructure, can create significant uncertainties in the returns that smallholders can expect from engaging in agricultural markets. However, the types and levels of risk faced differ significantly between smallholder producers depending on their level and patterns of market participation, and importantly, on the markets or value chains in which they seek to participate.

The importance that smallholders attribute to certain types of risk varies depending on whether they participate in formal or informal markets. Smallholders who sell immediately after harvesting their crop to repay consumption loans, face different types of risk than farmers seeking to meet stringent quantity and quality targets required to sustain their participation in more developed markets. Participation in local markets may be primarily subject to risks associated with price uncertainty. Engagement in contractual relationships with traders or processors in more formal or integrated value chains may help to offset price, related risks, but increase risks associated with production affecting the quality or quantity of production and therefore their ability to meet contractual requirements.

Participation in higher-value markets can also be subject to boom-bust cycles, often leaving significant numbers of producers with short-lived or negative returns on the



Constraints and risks affecting smallholder access to markets



investments necessary to participate. This is particularly the case in niche export markets. In Tonga, for example, a substantial and high return market for squash in Japan, together with technical assistance from the Government, resulted in a substantive supply response from producers. However, the market was not sustained, leaving significant amounts of unsold product and losses to the producers who had made investments in squash production.

In a more dynamic context, agricultural market developments can introduce further layers of risk. Credit provision generates

cash flow risks; the adoption of complex technology generates risks associated with production and therefore delivery; and contractual arrangements generate risk of malfeasance, although typically increasing average incomes and integration into export-oriented value chains exposes farmers to potentially greater income risks associated with fluctuations in world market prices.

The above considerations indicate the importance of recognizing that different types of risk are more or less relevant to different categories of producer.

Governments have at their disposal a battery of policy measures that could be used either to tackle constraints to market access, or the risk factors that constrain smallholders from participating in markets. The first challenge for governments is to determine which factors to target, namely, which constraint or risk is holding back smallholder market participation. The second challenge is the sequencing of policy measures during the process of market transformation. Both aspects are described in Part 3.

Understanding smallholder participation in formal markets

The nature of markets changes as they become more formal. Policy interventions in support of smallholder integration need to be sequenced and based on a systematic diagnosis of constraints and risks. Key is to understand how the patterns of market integration observed are affected by risks and constraints that tend to become more prominent as market formalization takes place.

Interpreting observed contracting patterns and welfare gains associated with participation in different market channels requires an analysis at the firm and farm level. The approach to analysing firm behaviour that is used in this report draws on a paper by Christopher Barrett, commissioned by FAO and is particularly useful for underscoring many of the inferential challenges that confront empirical researchers seeking to estimate the determinants and smallholder welfare effects of market channel participation.

Key features that emerge repeatedly in empirical study of smallholder participation in evolving agricultural value chains include: the prominence of geographic placement and farmer selection effects (described in the box), the heterogeneity of contract forms and terms, the effectiveness of farmer groups and cooperatives, and the highly varied but generally positive returns to farmers from value chain participation conditional on being offered a contract.

A recurrent factor that bears heavily on failed business ventures is the lack of market information and analysis. For example stakeholders, including the smallholders themselves, often fail to understand the impact of scaling up on individual markets. Smallholders' decisions to enter particular markets are heavily influenced by the past experience of others, entering in response to the observed profits of early entrants and historical prices. However, where initial investments take some time to bear fruit, by the time new production capacity comes online, market saturation may undermine the contract terms farmers face or increase the risk of contract breach by buyers. Such buyers

may themselves be late entrants with precarious arrangements with retail clients or may struggle to access storage or capacity to transport produce in timely fashion required to maintain product quality.

Agricultural price and yield volatility are key factors that explain why farmers and firms each commonly fail to fulfill all the terms of agreed contracts. Exogenous shocks can render one or both parties unable to complete the exchange as agreed. The possibility of shocks means that neither farmers nor firms can tell when a contract counterparty simply reneged on the contract or was rendered unable to fulfill the contract due to extenuating circumstances. In all countries, farmers claim that they bear the bulk of the risks, such as risk of non-payment due to the product not meeting agreed (but often time-varying) standards or loss of crops during shipping. However, firms also routinely complain that farmers sell to more lucrative markets (side selling) and fail to deliver product as agreed. Written contracts may mitigate some of these problems in that they clearly offer documentation that either party can use to try to enforce performance or restitution in the case of non-performance. There remains insufficient evidence, however, as to what effect, if any, the use of formal, written contracts has on either performance or *ex-post* enforcement.

Overall, the picture across commodities and countries is one of considerable contracting risk faced by both parties and a high rate of turnover from one year to the next. To date, we know little about the sustainability of modern value chain participation by smallholders, although the topic clearly demands attention.



Barrett's framework

Suppose a trader or a firm (retail or wholesale) contracts with smallholders for the provision of agricultural products. Contracting entails multiple decisions that are played out simultaneously across multiple locations and with multiple smallholders in any given location, as well as over time since all agents learn from past behaviours. Barrett proposes a four stage process:

1st Stage: Geographic sourcing choice; assessment of candidate supply. The first-stage geographic “placement” choice (where to buy from) is based on a combination of factors such as the agronomic suitability of the region to supply the crop in question at the required volumes and quality, or its location in relation to key markets. These geographic placement effects heavily influence smallholder participation. Not all farmers have ready access to modern, potentially remunerative value chains supplying distant markets. Those further from ports and cities, those with less reliable communications and transport infrastructure, and those in lower potential agronomic zones are least likely to be offered contracts. This has strong potential implications for patterns of spatial inequality, as producers in more favoured areas typically enjoy preferential access to higher-value marketing opportunities, thereby reinforcing their initial advantage. Understanding this choice enables the identification of interventions that might feasibly expand buyers’ catchment area and thereby enable greater smallholder market participation.

2nd Stage: Farmer contracting choice. This choice consists of the identification by firms of specific farmers or groups of farmers within chosen geographic locations to whom particular contract terms are offered. For horticultural products, for example, access to irrigation so as to ensure proper water management is typically key. Membership in a farmer organization or participation in an NGO extension programme can be other inexpensive, easy-to-observe signals that help the firm identify the best prospective suppliers. If selection occurred merely over observable attributes of farmers, empirical correction would be relatively straightforward. However, the fact that a good deal of selection is almost certainly based on unobservables – farmer skill, trustworthiness, contract status with neighbours, etc. – significantly complicates the identification of determinants of firm contract choice.

3rd Stage: Once presented with a contract, smallholders choose whether or not to accept the offer. This stage consists of an evaluation by the smallholder of whether to accept (*ex-ante* of product delivery) the terms of the contract. This choice generates a selection effect that complicates precise estimation of the behavioral or welfare effects of value chain participation. Why would farmers choose to accept an offered contract? First, it may resolve market failures associated with imperfect markets. Second, the firm’s logistical capacity may generate economies of scale or scope to the benefit of producers. Third, if the contract reduces farmer market risk exposure, it can encourage increased

output and/or investment in yield-stabilizing inputs like irrigation, either of which generate gains to the farmer. Fourth, firms can certify compliance with standards for which distant consumers are willing to pay a premium. There is also some possibility that farmers strategically decline when offered good contracts, preferring to wait and observe others’ experience with the contract and thereby resolve some uncertainty about the benefits of the contract.

4th Stage: Firm and farmer choices to honour contract. Having agreed to a contract, both parties have an opportunity to renege on the agreement when it comes time to deliver and pay for the commodities as agreed. If one party reneges, the other must decide whether to expend effort and resources trying to enforce the contract. This is an area where farmer groups and NGO intermediation on behalf of smallholders may generate real benefits in so far as the capacity of the group to challenge – legally or politically – the firm is almost surely greater than that of individual, especially small-scale, suppliers.

Source: Barrett, 2012

Part 3

Solutions for integrating smallholders into the markets

- ▶ Supporting inclusive market development
- ▶ Institutional arrangements: a role for cooperative action
- ▶ Support services: an evolving role
- ▶ Managing risk in market integration





■ August 2010, Dera Ghazi Khan, Pakistan - Buying and selling livestock at a local market following severe floods. Animal feed shortages, loss of livestock and poor access resulted in low market attendance and depressed cattle prices.

Supporting inclusive market development

Multiple programmes and approaches have been developed in support of promoting greater integration of smallholders into markets. The diagram opposite is illustrative of the wide variety of issues and perceived constraints that have been addressed by such approaches in seeking to develop the capacity to supply commodity markets. These include, for example, those that support capacity to increase productivity, those that seek to reduce the cost of marketing, or those that are designed to assist in improving the environment in which stakeholders conduct their transformative and transaction-related activities and thereby their capacity to respond to capacity support programmes.

Given the heterogeneity of smallholder participation in different markets illustrated in the first two chapters of this report, greater attention must be placed on mechanisms for identifying the design and sequencing of appropriate institutional solutions — such as improvements to regulatory frameworks, contract farming, farmer organizations or street markets — and provision of support services for alleviating key constraints faced by different categories of producers.

Value chain approaches provide a framework for identifying key constraints and considering appropriate solutions. A chain can be defined as “a set of interlinked activities and agents connected by flows of resources, materials and information that goes towards the production and trade of particular products”. This definition highlights:

- the chain as a sequence of activities;
- the key focus on the linkages and relationships that characterize the types of contractual arrangements and the degree of coordination along the chain;
- the impacts of stakeholders’ activities and decisions on others in the chain;
- the importance of recognizing the context in which the chain exists (economic, policy and institutional environment);
- that the chain is not isolated from the rest of the economy.

A chain provides a framework for showing how linked activities are performed, evaluating performance, identifying barriers to development (strengths and weaknesses associated with different activities and linkages), and assisting in the identification of prioritized intervention. Chain analyses have been used to analyse a range of issues, including:

- as an empirical tool for identifying binding constraints to growth and competitiveness;
- to understand and promote market access for small scale producers;
- to determine the relative merits of different types of contractual relationships between enterprises in a chain;
- to map the distribution of power and/or benefits of interventions among stakeholders;
- to identify approaches to improving value chain financing and/or risk management.

Their results have been used:

- to promote enterprise development through strategy formulation;
- to undertake situation analysis/ baseline for benchmarking or monitoring;
- for identification of actions for improved efficiency and performance of whole or components of chain;
- for improved policy formulation and implementation;
- for identification and formulation of projects and related activities.

The term “value chain approach” therefore covers an array of potential options, including:

- simple approaches to improved understanding of constraints to improved competitiveness or profitability of chain activities;
- analytical studies, for example to determine the potential effects of alternative policy interventions or institutional innovations;
- chain development related approaches such as participatory chain diagnosis and strategy formulation.



In the late 1990s, the value chain conceptual framework was adopted for the design of development approaches (Donovan and Poole, 2008). This was in response to structural changes in international food and forest product markets and the need for greater impact and sustainability of development interventions through increased private-sector involvement. Value chain approaches pursued by public sector agencies or civil society organizations have tended to focus on poverty reduction and, hence, target smallholders and rural communities as the main beneficiaries. Related interventions involve development projects, government agencies and NGOs, who typically provide subsidized technical assistance and training and, to varying degrees, inputs and credit to a select group of smallholders. The overall aim is to upgrade their resources and capacities for their positioning in value chains. In some cases, interventions have focused on improving the overall competitiveness of a given sector, through improved services,

infrastructure investments, financial incentives, and increased information sharing. In addition, the private sector, in particular lead firms that buy or process agricultural or forest products, have implemented value chain approaches to enhance sourcing of raw materials or inputs and to promote their environmental and social credentials.

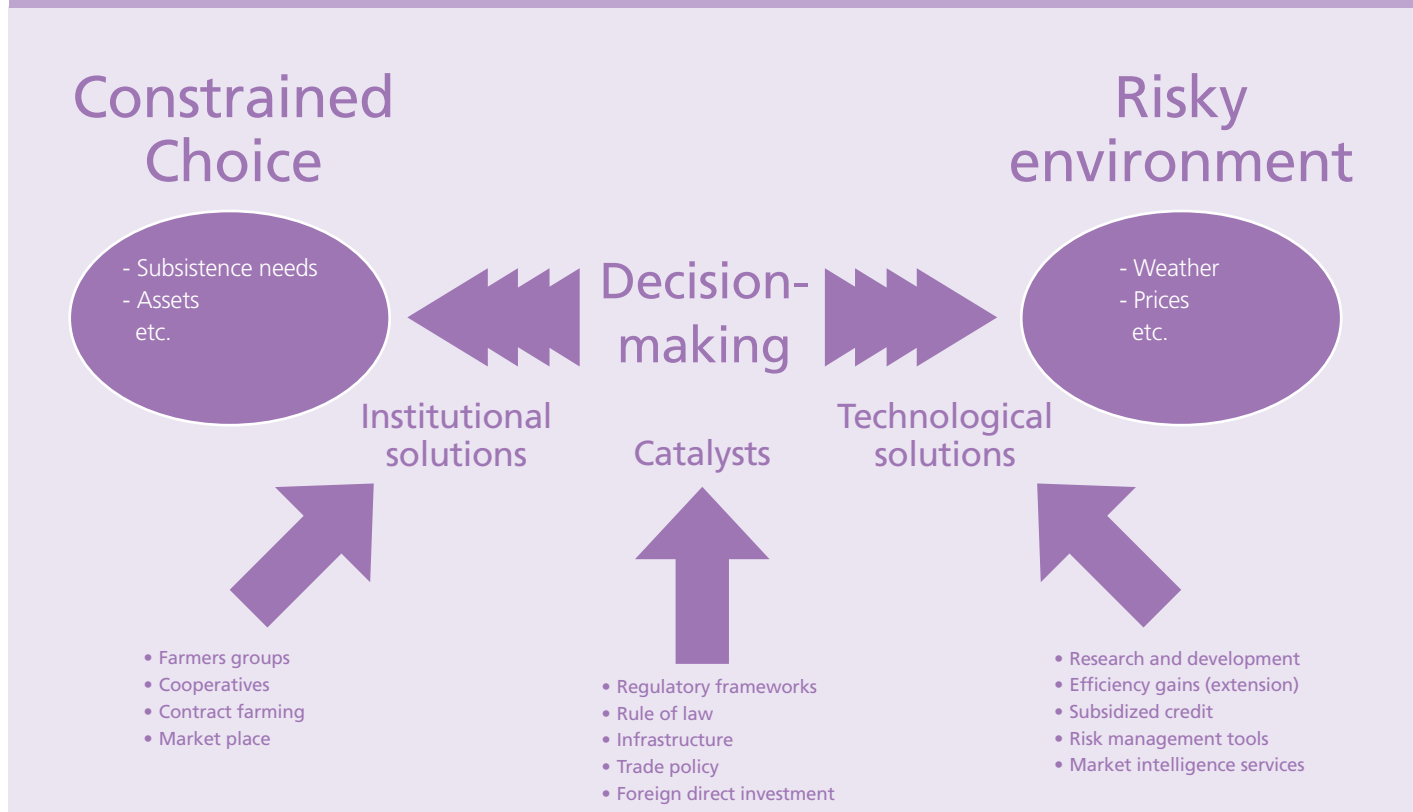
The value chain framework is important because it orientates production, intervention and innovation towards the demands of downstream buyers and processors. However, little evidence exists that value chain promotion has the desired impact on pro-poor development. To understand the poverty reduction impacts, it is necessary to identify the equity effects of intervention strategies within the household by age and gender, as well as between households and communities. Little is known about minimum levels of asset endowment required for value chain development at the household and community levels. While research has addressed asset endowments at the enterprise

level, rural households and communities remain a 'black box' in value chain analysis.

Alternative approaches to value chain development include the territorial paradigm of rural development, which has a long history in Latin America. The territorial paradigm is based on shared visions of pathways of change. This approach makes it virtually impossible to predict and plan social change in a top-down fashion. Capacity for territorial governance is critical in rural governance of resilience. System resilience refers to the capacity of actors to adjust the desired pathway whenever external shocks threaten its viability, or in certain cases, impose the need for a more fundamental change in the prevailing system and the desired pathways of change.

In the next two sections, discussion turns to two components of support to value chain development: (i) improved institutional arrangements and (ii) enhanced support services.

Factors and potential solutions that affect smallholder market integration



Institutional arrangements: A role for cooperative action

Farmer organizations can be instrumental in improving rural livelihoods and, ultimately, in enhancing food security.

Numerous examples around the world demonstrate their benefits, but unfortunately they also show that their impact is often limited in scale and scope.

Intra-group relationships, including local associations and cooperatives, are common solutions to smallholder market access where the institutional setting is weak. Through bonding relations, smallholders acquire information and gain self-confidence to analyse their own problems and to act collectively.

Despite their potential, farmer organizations are sometimes not enough in themselves to improve market connectivity. In those cases, bridging similar smallholder organizations together (intergroup relations) to form larger organizations in the form of producer unions, federations and networks may provide the solution.

Institutions broadly defined are “the rules of the game” that play a key role in determining the degree of market functionality. Institutional arrangements that facilitate greater cooperation can help to tackle market failures, in particular those

which prevent smallholders from taking advantage of market opportunities.

Institutional arrangements which facilitate cooperation of smallholders may:

- reduce transaction costs: transaction costs defined broadly as the “costs of using the price mechanism” for the acquisition of inputs or the selling of products include transportation, information gathering, negotiating, contracting, monitoring and enforcing of contracts;
- contribute to breaching market thresholds: often smallholders lack sufficient volumes of produce to cover the costs of market transactions, but may be able to organize themselves in groups to achieve market thresholds;
- facilitate smallholders access to production inputs: farmers’ groups may provide inputs that otherwise would be inaccessible to smallholders, for example due to cash flow deficits;
- provide extension services: the knowledge required for the adoption of certain production technologies may not be trivial, but could be shared among producers organized into groups;
- reduce risks and help smallholders to specialize: in seeking to stabilize their

Cooperative enterprises enhance market-oriented smallholder agriculture

Producer organizations, including agricultural cooperatives, play an important role in supporting smallholder farmers, livestock keepers, and fisher folk. They enable small-scale producers to better take advantage of opportunities offered in the market place and to make better use of the natural resources base. Some of the services they offer to their members include access to agricultural inputs, credit, training, storage facilities and agro-technology. By mediating access to these important services, cooperatives have great potential to transform

smallholder farming into a profitable enterprise. Cooperatives also give smallholder farmers a voice in decision-making processes at all levels. They also represent a powerful means of supporting marginalized groups, such as youth and women. Indeed, cooperatives are now adopting innovative approaches and tools (such as weather index insurance schemes) that have proved to be highly resilient to economic and environmental shocks (IFAD, 2012).



Need for supportive institutions

The functionality of markets where institutions are absent or abolished (unregulated) does not necessarily improve with the passing of time. With the withdrawal of state market intervention in many African countries, private sector operators have not entered to provide similar levels of service to producers meaning that the risks for smallholders have increased particularly in light of growing price instability, higher quality demands, more competition and more asymmetric information seen over the last decade (Empowering smallholder farmers in markets (ESFIM)).

incomes, smallholders often have diversified production activities. While this gives resilience to the farm economy, it has not facilitated growth. Cooperative insurance can provide solutions for tackling some of the risks incurred during specialization.

Experience has shown that donors and recipient countries should try to build on small-producer dynamics and strengthen existing initiatives, rather than introduce parallel processes and mechanisms. Donors should limit their role strictly to facilitation, by providing an enabling environment in which existing institutional innovations can evolve and grow. For example, handing over the ownership of a marketing project to an organization of small producers increases the likelihood of finding appropriate and sustainable solutions to market failures. Ultimately, collaboration between

smallholders and policy makers, the research community, civil society and the private sector opens the possibility to change not only the “rules of the game” of markets, but also of the wider rural development process.

The integrated Tamale Fruit Company

The Integrated Tamale Fruit Company (ITFC) is a Ghanaian and Dutch owned company growing and exporting certified organic mangoes. The mangoes are grown on the company's 155 hectare nucleus estate and by 1200 outgrowers. The venture has received support from a number of development agencies and NGOs in building the capacity of the outgrowers in organic mango production. The outgrowers are organized in the Organic Mango Outgrowers Association (OMOA). OMOA negotiates prices, contractual arrangements and benefits with ITFC. Outgrowers are provided with a long-term no-interest loan in the form of inputs such as equipment, seedlings and organic fertilizer. Repayments begin after five years from their sale of mangoes to ITFC. After fourteen years when the loan is repaid, growers can sell their mangoes to any buyer they choose. The ITFC provides support on technical issues such as disease and pest control, irrigation and certification and provides a guaranteed market for the mangoes produced. From the fifth year onwards, growers are expected to earn profits of around US\$ 2000 per year. This compares with an average farm income in the Tamale area of around US\$ 300 per year.

Multi-stakeholder platforms in Ecuador

The Plataformas de Concertación, or simply Plataforma, are multi-stakeholder platforms, or alliances, which bring farmers together with a range of agricultural support service providers, including INIAP, local NGOs, researchers, universities and local governments. The Plataforma is part of a comprehensive programme which involves practical intervention that pays special attention to improving the participation of low-income farmers in high-value producer chains by promoting their organization and social capital accumulation. Through the Plataforma, smallholders develop a “value chain vision” of production and commercialization that directly links them with the market.

Research has shown (see Cavatassi *et al.*, 2009), that the Plataformas programme successfully improved the welfare of beneficiary farmers. Plataformas achieves this success is through shortening and improving the efficiency of the value chain as well as through the application of better agricultural techniques, thus decreasing transaction costs with the former, and improving yields with the latter. The existence of social capital has proved to be fundamental in implementing the programme which, through its intervention, has strengthened the social tissue and has built or improved the capacity of farmers to link successfully to the market.

Support services: an evolving role

Support services define not just how well different markets function, but also the range of smallholder categories that are able to participate in those markets. While the provision of basic infrastructure and essential services such as extension and facilitation of access to credit may suffice for more informal markets, as markets evolve and become more formalized the type of support service required will change. Support services can become particularly complex for the upper end of market formalization, namely for high value added international food trade. The support services that any specific category of smallholder has access to will dictate, to a large extent, the type of market in which he or she is able and willing to participate.

In most commodity sectors, markets exist at different levels of formalization. Typically, informal markets for food staples are characterized by spot transactions in weak and often volatile markets and appropriate support services are aimed at increasing

volumes flowing to those markets by targeting productivity increases through extension, reduction of production-related risks, facilitating access to seasonal credit and market-related infrastructure, particularly storage.

Market information services are designed to better inform market participants. Providing access to market information improves understanding of markets and makes them more transparent, which helps all participants engage more effectively in the market. Market information services commonly provide information on current market prices of agricultural products and inputs at different locations, allowing market participants to choose the location offering the best price.

Warehouse receipts systems can enable producers, farmer organizations or traders to access secure and reliable storage, and can provide them with documentary title to their produce, which can be used to obtain

Preparing smallholders for organic export markets

Large, well-defined market segments where consumers are willing to pay a price premium for products produced under environmentally and/or socially sustainable conditions have developed in Europe, and they are expanding. Countries which are in a position to supply these niche markets may reap two important benefits: a) obtaining price premiums; and b) securing a share of a growing market segment. However, the extent to which the “standards as catalysts” materializes depends crucially upon smallholders’ ability to modernize their production, packing and logistics operations and demonstrate compliance. Achieving continuous and growing exports to these markets implies at least installed capacity, production

certification, and human resources trained in agribusiness. Unfortunately, due to these constraints and unsuitable conditions for their activities, most small and medium-sized growers are unable to take advantage of international trade in organic products, at least for the time being. In this sense, local market development becomes relevant, since it represents not only an alternative for this segment of farmers to earn returns for their productive efforts, but also because it constitutes an apprenticeship where they can learn what their weaknesses and strengths are, in respect to meeting international market demands.

From IICA’s “Developing local markets”



finance. This avoids being forced to sell immediately after harvest and potentially results in smoothing seasonal price variations. This system can also help to reduce storage losses, and promote efficient private trade. This may contribute to reducing volatility, while assisting smallholders to better manage risks and participate in markets. For such services to be established, legal frameworks and regulatory mechanisms need to be in place.

As markets develop, quality becomes more important than quantity, particularly at post-harvest levels. While falling under similar categories, support services must become more relevant to end user needs. For example, countries must have good delivery mechanisms to deliver the necessary information, education and advice to

stakeholders along the entire supply chain. Countries with a high participation of smallholder farmers in high-value produce markets are generally characterized by having programmes of farmer training.

Market information services will also have to become more sophisticated, for example, to include demand-related information supplied by buyers including: volume and quality standards requirements, long-term demand forecasts, such as when the volume of product required is likely to peak or fall-away, and information on changing consumer preferences, such as for organic product certification. They have also expanded to include information on the conditions that effect production and marketing, including long-term weather forecasts and road conditions.

The development of relevant and enforceable food safety laws and regulations is an essential component of a modern food control system — the marketing of produce to high-value markets requires an effective national food safety control system to facilitate compliance with appropriate food safety laws and regulations. This is essential to provide assurance of the quality and safety of commodities entering international trade, protect the health and safety of domestic and foreign consumers and ensure that imported food conforms to national requirements. Certification bodies and auditing services to provide proof of compliance and laboratories to provide analysis services are all essential to ensure that smallholder farmers can gain access to modern markets.

Basic principles of market based Instruments – example of warehouse receipt systems

Warehouse Receipt Systems (WRS) have several positive attributes: they can facilitate the link between storage and finance; stabilize intra-seasonal prices; increase producers' ability to decide when to sell; reduce the pressure on traders to rotate stocks; improve locational stock visibility and increase the efficiency of food reserve management.

The basic principles of warehouse receipt systems are as follows. After harvest, the farmer, cooperative or trader delivers maize to a licensed warehouse. If it meets certain quality parameters, it is accepted, and the warehouse operator will deliver either one warehouse receipt specifying the quantity, or two separate certificates (a certificate of title and a certificate of pledge). The warehouse will release the stored maize only to the owner of the warehouse receipt in a single-receipt system, or the owner of both documents if there is a double receipt system. The warehouse operator or an approved agent will also issue a quality certificate which has an expiration date. Beyond this date, the operator no longer takes any liability for the quality of the stored crop, but until then, is fully liable for both quality and quantity. When depositors wish to borrow against their crop, they transfer the warehouse receipt,

or the certificate of pledge, to the bank as security. In a system with just one receipt, the farmer or trader can enter into a contract with a buyer, endorse the receipt to the buyer and inform the warehouse operator. The buyer can then take delivery against the endorsed warehouse receipt. In a double receipt system, the sale is through the sale of the certificate of title. In the double receipt system, when the trader or processor needs the crop, they can redeem the certificate of pledge from the bank by repaying the original loan. The warehouse operator will then release the crop to the buyer against delivery of both certificates.

However, in many African countries, the establishment of WRS has encountered difficulties including deficiencies in storage infrastructure; weak regulatory frameworks; the limited capacity of producers to deliver quantity and quality on time; and limited involvement of financiers.

While successful examples of WRS exist for higher value export commodities, for example in Ethiopia, there has been limited take off where WRS have targeted food staples such as maize.

Adapted from Gross *et al.*, (2011)

Market intelligence to promote trade

The Regional Agricultural Trade Information Network (RATIN), hosted by the Eastern Africa Grains Council (EAGC) is a trade intelligence structure, hosted as a web portal as www.ratin.net that facilitates structured grain trading in Eastern Africa. RATIN gathers and analyses data from producers, traders, and processors and other market information sources and relays the processed information to the users. In doing so, investors risks are minimized and trade interactions among its members and users improved, while enhancing more efficient and cost effective intra-regional trade within the Eastern Africa region. Some of the market intelligence provided under RATIN within the eastern Africa region includes price discovery, production forecasts and supply, weather updates, economic outlook, trade opportunities, monthly price data analysis, regional food balance sheets, policy guidelines, grades and standards requirements, and regional trade flows. Further developments to the information system include a Warehouse volumes tracking system that will enable users to view volumes stored in various warehouses per country in real time and interactive maps with lists of all the markets, warehouses and border points that EAGC monitors.

Managing risk in market integration

In developed countries, large-scale, commercially orientated and well equipped farmers are more able to manage price and weather-related risks through market-based instruments such as futures markets or weather-based insurance. Smaller farmers may lack access to the knowledge, assets, technologies, market instruments and governance structures to adequately manage their risks. In developing countries, smallholders with little capital, and limited access to markets, often have little possibility to protect themselves against a variety of risks which characterize less developed agricultural sectors.

In developing and emerging economies, risk management by smallholders faces numerous challenges. Geographical dispersion of smallholders with limited access to knowledge and markets can lead to high operational costs for risk management programmes. Often, financial and insurance markets accessible by smallholders do not exist, or are under-developed. Women smallholders typically fare worst, as their access to assets, finance, extension or other risk management or coping instruments is generally even more limited than for other smallholders.

Many actions, such as the introduction of disease-resistant varieties, irrigation and drainage systems can reduce the risk to which farmers are exposed. Market-based insurance mechanisms also provide a way to transfer risk and assist farmers in making production decisions. Considerable effort and research is being invested in developing innovations such as weather index-based crop insurance, which seeks to address the challenges of insuring smallholders. The underlying concept is that farmers are paid whenever rainfall or temperature is so high or so low that it is likely to cause a significant fall in crop yields, or whenever droughts, frost, or precipitation cross specific thresholds. The measurement of these events is undertaken using weather station data or even satellite technology. The advantage of this approach is that insurers do not need to make field level assessments and therefore administration

costs, and thereby insurance premiums, are reduced.

Similar problems are faced in providing protection to smallholders against price risks. In addition to their often limited access to markets and knowledge, smallholders in developing countries have virtually no possibilities of participating in futures markets. Targeting smallholders for the cost-effective use of financial risk management tools such as futures contracts has proved extremely difficult. Even if aggregated across farmers, production is subject to problems of standardization and quality. Moreover, few developing countries have functioning commodity exchanges where farmers and other market participants can hedge against price fluctuations of food staples. In addition, as domestic prices are often not strongly related to world market prices, due to high transfer costs, producers are not able to utilize existing international commodities exchanges to mitigate these risks.

The tools provided to assist in the mitigation or adaptation to risk will need to differ according to the needs of these producers. The use of market-based risk management tools in rural communities has been widely promoted by international financial organizations and bilateral cooperation agencies. However, smallholders' degrees of participation in insurance and other formal risk-hedging schemes tends to be low. Access to these products by smallholders is constrained by lack of information and proper understanding of these instruments, high transaction costs relative to small volumes of trade and underdeveloped rural financial institutions that could act as intermediaries between farmers and insurance companies or international hedging markets.

Smallholders often mistrust risk management tools and are more likely to resort to informal risk management mechanisms to offset income variability, including intra-household income transfers, carrying over stocks, shifting labour from farm to off-farm, risk-sharing through community-based institutions such as cooperatives or



Interlinking insurance with credit to enhance smallholder agricultural productivity: a Multi-Agency pilot application to Ethiopia

Developing country agriculture is characterized by many smallholders producing under conditions of substantial risk, which, in conjunction with the absence of formal credit, restricts their ability to expand production through investment in improved technologies. Weather index insurance provides a possible way out of this low productivity trap. However, stand-alone weather index insurance contracts have met with indifferent demand and low uptake by the intended beneficiary populations and will not address a lack of credit availability. However, if combined with credit so as to provide a collateral substitute, may ease this supply side constraint.

The Ethiopian Project on Interlinking Insurance with Credit in Agriculture (EPIICA) seeks to address this multiple market failure by explicitly interlinking rural credit with weather index insurance. The project addresses supply-side issues by providing weather insurance directly to the country's major private bank, Dashen. The bank becomes the beneficiary on a weather insurance policy, removing the dominant source of covariate risk from their portfolio and enabling an expansion into agricultural financing that would otherwise be too risky. The project addresses demand-side constraints by marketing this interlinked product directly to cooperativized farmers as a state-contingent loan. In the good state of nature the farmers will need to pay back the loan, the premium payment on the insurance, and the interest on both, but in the bad state of nature the farmers will owe nothing. By reducing the risk of weather-driven default for borrowers, it is hoped to crowd in credit demand and enable a first-order expansion of agricultural productivity as farmers are able to use credit to transition to a higher-risk, higher-yield farming technology.

There are two types of product that will be marketed to farmers. One is a stand-alone index insurance contract, that insures an amount per hectare roughly equal to the cost of modern inputs (fertilizer and seeds), and pays when rainfall in a nearby rainfall station is below levels determined by water requirements for given

crops, periods and locations. The idea is to insure the cash advances of farmers for input purchases. The second product involves the insurance product above, but at the same time a bank loan that covers the cost of inputs, as well as the premium of the insurance. The beneficiary of the insurance policy is the bank itself, so if the weather index triggers, the bank is paid with certainty. The bank in turn lowers accordingly the repayment obligation of the farmer.

EPIICA focuses on the existing agricultural supply chain, which is composed of village level cooperatives of 200-300 farmers, organized in turn under Cooperative Unions (CUs), which are apex organizations of several individual village (Kebele) level cooperatives. The CUs will serve as signatories on the interlinked loans, ensuring that they use their considerable power to ensure that loans to this new private entity are repaid. In addition, the use of the Unions as intermediaries helps to keep costs down by exploiting existing supply chains to aggregate demand. The CUs aggregate farmer demands for inputs and loans, from village cooperative level demands, which in turn aggregate individual farmer demands, and provide the lowest level direct contact with farmers, for both loans and inputs. Also, as the CUs are entities with the legal authority to contract with banks, they are much easier for formal financial institutions to deal with than individual village cooperative or smallholder farmers. Third, they can use their extensive relationships with primary cooperative and farmers to serve as enforcers of the loan contracts, minimizing default risks.

Designing new credit and insurance contracts in a country with no private ownership of land and no history of private bank lending to agriculture is a challenge. The promise of the project, however, is that by bringing together private sector financial institutions and a novel set of contracts, it may be possible to undo the interlocking set of market failures that have bedeviled smallholder farmers in this very risk-prone environment.

Feed the Future (2012).

<http://www.feedthefuture.gov/model/index-insurance-innovation-initiative-i4>

through informal credit arrangements. Clearly, most of these strategies are only useful for shocks that do not affect all members at once, and are ineffective if the unit of risk pooling (village or region) is vulnerable to the same aggregate risk, such as price fall or drought.

Part 4

Policies supportive of smallholder market integration

- ▶ A more proactive role for the public sector
- ▶ Fostering private sector investments in market development
- ▶ The international community
- ▶ Evidence-based policy-making - next steps





- *Garissa, Kenya. Traders tracking cattle market developments with mobile phones in the Horn of Africa. Small farmers often find it difficult to market their products. One major market constraint is the uncertainty about market prices. Small farmers in rural areas often do not know the prices on the major markets, for example in Kampala. This puts them in a weaker position when negotiating prices with traders and other intermediaries (i.e. there are “information asymmetries”). A number of initiatives now use text messaging to inform individual farmers about the current market prices. These initiatives strengthen the small farmers’ position to bargain prices with intermediaries and thus reduce their vulnerability to exploitation by overcoming information asymmetries (TEKA - FAO).*

A more proactive role for the public sector

Following an extended period during which many donors and international organizations were promoting a reduced role for the public sector in supporting agricultural development, there has been a growing appreciation of the need for a more proactive role for the public sector that goes beyond creation of supportive legal and policy framework and the provision of improved infrastructure, the so-called enabling environment. This is particularly so in contexts where, following the withdrawal of the state under programmes of structural adjustment, from agricultural marketing activities that had previously targeted smallholder farmers, market development has been limited. Evidence from these episodes suggests that markets don't "naturally" improve their functionality with the passing of time and in the absence of public sector support (Thomas, 2007).

Interventions to reduce barriers to market participation

Two types of policy interventions may be considered as examples of how the public sector can support the reduction of barriers to market participation: (i) the public sector continues to pay for a service, but the private sector delivers it, examples of which might include extension and market information systems, and/or (ii) the source of low willingness to pay for a service, which could be due to a lack of awareness of the benefits of the good or service, could be addressed through demand stimulation. Examples of the latter include public sector supported schemes for the delivery of appropriate levels and types of inputs such as fertilizer, seeds, or extension, for a pre-defined period of time during which the market develops.

A shift back towards a more active role does not however imply that support should be provided through direct intervention in markets. Rather, it envisages a facilitating role whereby the public sector indirectly provides support by working with and through the private sector. This change in mind-set has allowed greater focus on the identification and design of mechanisms through which public sector support, which includes not just government, but donors, international and regional organizations and NGOs, can be used to improve the incentives, and to reduce the disincentives, facing private sector actors in a way that allows policy goals such as improved provision of services to poor groups and environmental protection, to be achieved.

With increased attention, however, comes increased scrutiny of the choices made by policy makers particularly at a time of significant constraints on already scarce public sector budgets. This scrutiny is magnified given the risks that inappropriate policy interventions could create incentives for producers to adopt environmentally and socially damaging practices. Important questions are therefore being asked in relation to why public sector support is needed, where it should be focused, and when and how it should be provided.

In determining how the public sector can assist in removing constraints to market participation, a first step is to understand the characteristics of the market failures that are creating them. Basic infrastructure and services such as research, extension, quality assurance, market intelligence, and trade facilitation will, because of their public good nature, be underprovided by private sector actors who are themselves making decisions on the basis of market signals or incentives. Whilst funding for establishing basic infrastructure and public goods is likely to remain a public sector responsibility, the role of the public sector in the management of chain specific infrastructure (e.g. storage, basic processing, quality assurance etc.) needs to be supportive rather than "hands-on".



Other goods and services, such as credit and chemical inputs which are generally provided by the private sector where markets are functioning well and with producers able and willing to pay for them, are often not provided at affordable prices due to high risks or transaction costs in many contexts in which smallholders operate. The high degree of risk inherent in the agriculture sector provides a compelling argument for public sector risk sharing by underwriting private sector investments.

In this context, a key question is the level at which the public sector should intervene to mitigate such risks, and here, access to insurance is illustrative. Insurance can be a viable option for farmers to reduce the risks associated to agricultural production, but options for insuring against price or production risks are rarely available to smallholders. In more developed countries, loss events common to the production process that result in minor harm, for example controlling the damage caused by an invasion of weeds usually fall under the responsibility of all farmers, including smallholders. Agricultural insurance steps in when the loss is more significant, for example hail storms, and is often provided by the private sector in more developed economies. At the end of the spectrum, when catastrophic events occur — for example floods with wide geographic impact — public support may be required as insurance companies are unable to provide coverage.

However, where there is limited recourse of smallholders in less developed economies to mechanisms to offset risks, a more significant role for the public sector may be needed in facilitating insurance against small and intermediate level losses.

Another set of decisions concerns the provision of services that are specifically aimed at facilitating participation of low income groups, often remote from markets. For example, the provision of credit to producers in more remote areas, where the risks and/or transaction costs of investment are too high for the private sector financial institution to make a sufficient return. Mechanisms to leverage this involvement might include matching grants to share the cost or risk at a critical stage of investment, or guarantee funds to allow development of new financial products or the extension of existing products to new groups to be rolled out by the private sector. Interventions to support the introduction of such services build on the assumption that once a market in these

services has become established, the private sector will be able to upscale.

Public procurement from smallholders in Brazil

In many Latin American countries, governments are taking a more direct approach to integrating smallholders into domestic markets by linking the demand for food purchases in social programmes to the supply of locally produced food. Brazil has been most active in implementing this type of initiative, with its Food Acquisition Programme, created as part of the Fomezero initiative, used to facilitate direct government procurement of food products from smallholders. The food is used partly for building up strategic reserves and partly in food security programmes, such as school feeding, soup kitchens and the food baskets distributed by the Government amongst the most vulnerable populations. The programme benefits approximately 200 000 farmers and distributes food to 15 million people each year. Each farmer can access this mechanism up to an annual limit of 5 000 reais (US\$ 2 500). The price, although set by the authorities, is constantly revised to reflect the prices in local markets. Another Brazilian programme is the National School Feeding Programme, which provides at least one meal a day for students in the public education system, reaching one-quarter of the Brazilian population, and with regulation requiring that at least 30 percent of the food procurement bill is spent on food purchased directly from family farmers.

The Brazilian Government has been actively promoting the public food acquisition model in other Latin American countries, in particular in Central American countries and Haiti, providing technical and financial support for establishing similar programmes while fostering improvements in domestic supply. Moreover, in collaboration with FAO and WFP, Brazil will disburse US\$2.35 million to fund local food programmes in Ethiopia,

Malawi, Mozambique, Niger, and Senegal, starting this year.

Brazil also provides incentives to the private sector to purchase from smallholders. For example, it provides fiscal incentives and exclusive rights to participate in auctions to sell biodiesel to firms that purchase a minimum of an established share of raw materials (mainly soybean oil) from small farmers through the socially responsible fuel certification.

Public food purchasing brings about important benefits to smallholders since they gain access to a guaranteed market with a predictable price. Having a stable market and hence less variable income encourages increases in on-farm investment. In the case of Brazil it also promotes sustainable production practices through special financial incentives. Moreover, it encourages improvement in product quality and food safety, as in order to participate in the programmes farmers have to comply with the required standard levels and strengthens producer associations through which purchasing is usually channeled (Chmielewska and Souza, 2010). However there are also potential risks. First, the complexity of these programmes implies a large number of staff and a high degree of organization and skills in responsible public institutions. The fiscal cost can be substantial, not only in administrative and logistics costs associated with transport and storage, but also the price margins, if the prices paid to farmers exceed market prices, which is often the case. Moreover, the sustainability of these market outlets is a critical issue, given the dependency on availability of fiscal funds and political will, and caution needs to be exercised to avoid creating dependency.

Fostering private sector investments in market development

Capital accumulation by smallholders is a key constraint that prevents them from adopting new marketing strategies or production technologies required to increase production for sale in markets. Approaches that enhance smallholder access to finance necessary for investments for increasing production have been extensively discussed in the development literature², but there has been less discussion of investments by different categories of stakeholders in market development. This report focuses on a particular type of investment, the main purpose of which is to increase the connectivity of smallholders to markets. Capital accumulation of this nature might include investments by farmers in assets such as mobile phones to enhance market transparency, by traders in bicycles to reduce transportation costs, or by processors in market developments that give smallholders access to both inputs and outlets and secure a more consistent supply base.

Market development generally requires coordinated investments by stakeholders at different stages in the value chain. For example, traders or processors by investing in warehousing facilities can cause costs (and risks) for primary producers to fall. These producers will then invest to raise their marketed surplus, in turn leading to further falls in unit costs for traders/processors. Intervention by government, for example, where tariff protection of the processed good reduces risks to traders or processors making the initial investment may be required to kick start this cycle of coordinated investment.

The previous section highlighted the public sector's key role in creating a framework that promotes the development of well-functioning competitive markets. But is this enough to ensure sustained increases in traded volumes and by virtue, reduced price volatility in those markets? The need for an

active role for the public sector that goes beyond the creation of an enabling environment for markets to develop is increasingly acknowledged. This has allowed greater focus on the identification and design of mechanisms through which public support can be used to leverage greater private sector investment aimed at increasing smallholder market participation. These include examples whereby the public sector seeks to align incentives facing private sector actors with public policy goals such as service provision to poor groups, and/or where the public sector takes on a risk sharing role to encourage greater investment by the private sector.

Governments may be restricted in their capacity to engage in partnerships with a multitude of smaller market players due to their limited budgets. But can their efforts be scaled up effectively using global value chain actors that serve a larger smallholder base? In other words, can PPPs incentivize global value chains in ways that meet public policy objectives? Key partners in global value chains have substantial bargaining power to set terms and conditions that suit their interests. In this context, it has been recommended that public actors seek advice from people with extensive private sector experience before engaging in such relationships.

Relationships between public and private sector stakeholders can take many forms: cooperatives that by law are granted marketing board status; the contracting out by the state of private companies for building transport infrastructure; multi-stakeholder fora to discuss trade standards.

Finally, foreign direct investment (FDI) in agriculture has gained prominence in recent years, and could be particularly relevant for developing countries where the level of public spending and overseas development aid in agriculture has shown a declining trend over the last decades.

The last few years have seen a surge of interest in international investment in the agricultural and food sectors of developing countries. Many developing countries in Africa and elsewhere are making strenuous efforts to attract such investments which are

² See, for example, debates on microcredit or microfinance.



Principles for Responsible Agricultural Investment

1. Existing rights to land and associated natural resources are recognized and respected
2. Investments do not jeopardize food security but rather strengthen it.
3. Processes relating to investment in agriculture are transparent, monitored, and ensure accountability by all stakeholders, within a proper business, legal, and regulatory environment.
4. All those materially affected are consulted, and agreements from consultations are recorded and enforced.
5. Investors ensure that projects respect the rule of law, reflect industry best practice, are viable economically, and result in durable shared value.
6. Investments generate desirable social and distributional impacts and do not increase vulnerability
7. Environmental impacts of a project are quantified and measures taken to encourage sustainable resource use, while minimizing the risk/magnitude of negative impacts and mitigating them.

seen as potentially providing developmental benefits such as technology transfer, employment creation, and infrastructural development. Lack of investment in agriculture and food over decades has meant continuing low productivity in many developing countries, especially in sub-Saharan Africa. FAO estimates that additional investments of US \$83 billion annually are needed if developing country agriculture is to meet food needs in 2050 (Schmidhuber *et al.*, 2009). Developing countries themselves have limited ability to fill that gap. The share of public spending on agriculture in developing countries fell to around 7 percent, and even less in Africa, and the share of official development assistance going to agriculture fell to as little as 5 percent. Commercial bank lending to agriculture is less than 10 percent in sub-Saharan Africa. Given the limitations of alternative sources, FDI in developing country agriculture could make a significant contribution to bridging the investment gap. However, FDI, at least where large-scale land acquisitions are concerned, has been controversial. Certainly, these raise complex and controversial economic, political, institutional, legal and ethical issues in relation to food security, poverty reduction, rural development, technology, and access to land and water. A key issue is the extent to which benefits from foreign investments spill over into the domestic sector in a synergistic and catalytic relationship involving existing smallholder production systems and other value chain actors such as input suppliers.

So-called 'land grabbing' is just one form of investment and one which arguably is least likely to deliver significant developmental benefits to the host country. Other forms of investment such as joint ventures, contract farming, out-grower schemes and infrastructure investments may be preferable. Such arrangements can give small producers access to markets and enable them to share value. It is interesting to note that in other contexts, vertical coordination tends to be based much more on such non-equity arrangements than on the traditional acquisition of upstream or downstream stages. The involvement of European supermarket chains in the development of East African horticultural production for export is a case in point. Looser business arrangements may be more conducive to host country interests, particularly to their smallholders. However, even here there are likely to be questions about whether investors' volume and quality needs are compatible with dispersed smallholder agriculture. Where this leads to increasing size and concentration of suppliers it can raise questions about poverty reduction potential. Nevertheless, joint ventures between foreign investors and local producers or their associations might offer more spillover benefits. Under contract farming or out-grower schemes, smallholders can be offered a guaranteed market at a fixed price, inputs, credit and technical advice, although at the cost of some freedom of choice over crops. Mixed models are also possible with investments in a large-scale core enterprise at the centre, with out-growers under contract

to supplement core production. Some governments have encouraged foreign involvement in such enterprises, as in the Tanzanian sugar sector or the 'Farm Blocks' in Zambia.

What business model is most appropriate will depend on the specific circumstances and the commodity concerned. No one business model is the best option for smallholders in all circumstances. The extent to which smallholders share value with foreign investors depends on how the business and decision-making are organized. Smallholders may be at a disadvantage in negotiating these aspects including in terms of access to information.

Care must be taken to formulate strong investment contracts that reference host country concerns and to select suitable business models; appropriate legislative and policy frameworks must be in place to ensure that developmental benefits are obtained and risks minimized. In the absence of strong domestic legislation and equitable investment contracts, international action, whether through a voluntary code of conduct or guidelines or principles, could highlight host country interests and also guide investors toward responsible investments. There appears to be broad support for an international response of this kind that would highlight the need for transparency, sustainability, involvement of local stakeholders and recognition of their interests and would emphasize concerns about domestic food security and rural development. FAO, the World Bank, UNCTAD, and IFAD suggested a minimum set of Principles for responsible agricultural investment that respects rights, livelihoods and resources along these lines. These principles, based on detailed research on the nature, extent and impacts of foreign investment and best practices in law and policy, are intended to distil the lessons learned and provide a framework to which national regulations, international investment agreements, global corporate social responsibility initiatives, and individual investment contracts might refer.

The international community

It is pertinent to ask what role the international community can play in supporting a broad-based transformation of smallholder agriculture. At global level the international community can play a role in supporting the provision of principles, guidelines or legislation applicable to a large number of signatory countries. This role can take several forms, including awareness raising, analysis and monitoring, and rule-making. The notion of family farms and their role in supplying local and global markets has received significant attention in recent years, as witnessed by the declaration by the UN General Assembly of an International Year of Family Farming in 2014.

Another example of awareness raising has been the inclusion of smallholder agriculture on the agenda of the G20 for 2012 which has brought to the attention of the global community the importance of bridging the productivity gap in smallholder agriculture in a sustainable way. It stresses that measures to increase productivity will have little impact unless participation in markets is correspondingly increased. In terms of support to analysis and monitoring, the World Agricultural Watch, where the FAO, in partnership with France and IFAD, are working towards a better understanding of agricultural transformation and smallholder issues around the world, provides another current example.

The international community also plays a key role in the formulation of global level agreements. The negotiation of a Special Safeguard Mechanisms within the WTO Agreement on Agriculture provides an example of attempts to craft new trade rules which better reflect the policy requirements of countries with significant numbers of resource poor producers.

In the context of such initiatives, this report seeks to create greater awareness of the critical importance of recognising the existence of smallholder heterogeneity in making informed policy decisions. Acceptance of smallholder heterogeneity makes explicit the recognition that interventions can have a positive impact on

some categories of smallholders, but can have negligible or even negative impacts on others. It was also shown in Part 2 that when policy analysts have focused on policies for promoting smallholder market participation, they have tended to emphasize macroeconomic (e.g. trade or exchange rate) or meso-scale (e.g. roads, farmer groups) policies, while the growing empirical evidence points strongly to microeconomic factors — especially households' private asset endowments — as key determinants of market participation, but in which significant heterogeneity exists.

Just as smallholders are heterogeneous, a myriad of ways exist in which the international community supports smallholder market integration. Their interventions, whether top-down or bottom-up, intentional or not, are inevitably effective only for specific categories of smallholders. Bottom-up interventions, for example territorial approaches that empower people and their communities to decide and act on the pathway that they believe is right for them, can disproportionately benefit those categories of smallholders with greater influence in decision making processes. Equally, top-down proposals, even where smallholder heterogeneity is acknowledged and addressed, require as a starting point either that a selected category of smallholder is identified, or that specific problems that apply to a selected category of smallholders are identified. Either way, interventions are selective.

Such observations also point to an urgent need for improved governance of food systems. Development-related processes affecting smallholder agriculture have become increasingly complex. The growing plurality of actors — with many new, more active and more diverse stakeholders and interests, and more visible divergences in power between interest groups, make inclusive processes difficult to manage effectively. Increasing uncertainty in a number of dimensions — ranging from those related to the potential impacts of climate change, to the actions of trading partners in an increasingly globalized world to the



willingness of key stakeholders with vested interests in current systems to engage in reform in an increasingly dynamic policy environment complicate the design and implementation of efficient and effective interventions in situations where asymmetries in information are the norm. In addition, new commitments made at major international fora, in particular the High Level Fora on aid effectiveness in Rome (2002), Paris (2005), Accra (2008) and Busan (2011), to promote and support regional and country-owned development processes have been complicated by a lack of capacity in both the public and private spheres, limiting countries' abilities to handle their own country processes, including the management of financial resources to develop the agriculture and food sector.

The increasing complexity of such processes is visible at different levels. For example, at the global level countries face challenges in defining the relative roles and responsibilities of institutions critical for a coordinated approach to the fairer management of the food system. At the regional level, the articulation and implementation of coordinated action in the face of growing disparities between countries is just one example of the challenges facing regional economic communities. At national level, Ministries of Agriculture often lack critical human and financial resources to face the challenge of re-defining their roles vis a vis the growing range of actors and associated shifts in the control over food and natural resource systems. At the local level, strengthened institutions are increasingly recognized as critical to the improved management and use of resources and inputs to / outputs from food systems. Cutting across these levels, the translation of international commitments into national level implementation has proved to be a particular challenge for many countries.

This increasing complexity requires governance mechanisms, the formal and informal rules and processes through which public and private actors articulate their interests and decisions are made, implemented and sustained, that better recognize the importance of key principles such as: participation, accountability, transparency, equality and fairness, efficiency and effectiveness, and the Rule of Law. The relative importance of these principles will differ across different processes and levels, yet they all apply to the processes associated with development of normative and international

instruments and agreements as well as to programme design at regional, country and community level, and, crucially, to the translation of decisions and actions between these nested levels.

Many international organizations, including NGOs, are involved in the development and application of models or good practices that implicitly or explicitly recognize the importance of smallholder heterogeneity. Examples include Think big. Go Small by Oxfam International or Making Markets Work for the Poor (M4P) funded by DFID. These initiatives work towards making markets more effective and inclusive and can foster greater levels of market integration (including value chain development).

South-South and North-South cooperation (which may or may not be tied to trade negotiations between the parties) can also be instrumental in fostering inclusion of smallholders in markets by providing targeted financial and technical assistance. Examples of South-South cooperation of this type include Brazil's assistance to Haiti and Sub-Saharan Africa to establish programmes for government procurement from local smallholder farmers and regional integration schemes that include mechanisms for creating market opportunities for smallholders, such as REAF (The Special Meeting on Family Farming) – a specialized body within Mercosur, which includes a Thematic Group on trade facilitation.

North-South trade agreements are typically accompanied by cooperation provisions which include funding for programmes in support of trade development and regional integration, some of them with special focus on smallholders. This is especially the case with EU's Association Agreements. For example, the EU has committed to provide funding (€23.5 million) for a programme to strengthen SPS and quality aspects of Central American agricultural exports, which will help smallholders benefit from the expansion in market access under the new EU-Central America Association Agreement.

World Banana Forum

The World Banana Forum is a permanent space of assembly for participants representing the global banana supply-chain to promote open dialogue on challenges facing the banana industry. This groundbreaking initiative brings together producers, their organizations, trade unions, cooperatives, exporter groups, fresh produce companies, retailers, traders, public agencies, governments, research institutions and civil society organizations. The Mission of the World Banana Forum is to inspire collaboration between stakeholders that produces pragmatic outcomes for the betterment of the banana industry; and, to achieve an industry-wide consensus of best practices regarding workplace issues, gender equity, environmental impact, sustainable production and economic issues. The hope of the World Banana Forum is that all stakeholders can share the vision of a sustainable banana value chain for present and future generations.

Evidence-based policy-making - next steps

In this report the critical importance of better understanding the determinants of smallholder producers' decisions to participate in food staples markets when formulating policy aimed at increasing levels of productivity has been explained. Drawing on FAO case study research to illustrate the challenges that policy makers face in deciding where to focus scarce public sector resources, the type of support required, and how best to provide that support, this report has drawn attention to the significant heterogeneity of smallholder market participation and to the many constraints and opportunities that smallholders face, both in relation to their household specific characteristics and to the diverse contexts in which they operate.

While various solutions exist for facilitating smallholder integration into markets, a number of which were described in Part 3, it is clear that there is no "one size fits all" and that a more nuanced approach to policy formulation, at the national and international levels, is required. In describing the complex decisions facing policy makers, this report has been careful not to prescribe specific interventions. This is primarily because such interventions need to be specific to the context in which they are made and underpinned by credible evidence. In the absence of information on many of the critical determinants of smallholder market participation decisions, investment in systems of information generation, assimilation and use is key in facilitating a more nuanced approach to policy intervention.

The use of information in arguing for policy change, in formulating policy interventions and in monitoring their effectiveness is not new. However, the manner in which the information is used, and the appropriateness and comprehensiveness of the information can significantly affect the outcome of a policy process.

The way in which information is used is critical as policy development is generally subject to competing vested interests and can also be driven by pressure to act quickly. Having access to robust evidence can be an important counterweight. There is also

increasing appreciation that policy is set in a dynamic context and that there is a need to better understand the policy environment and how this is changing both from short and long term perspectives. As political processes develop, particularly in an era of limited fiscal resources, there is also increasing emphasis on transparency and the need to communicate with different constituencies.

Recently, a set of generically termed "Evidence-based approaches" have been developed which provide guidance and advice on the kind of evidence that is relevant to a specific policy issue, how it is to be treated and how decisions are to be made using the evidence in question. These approaches seek not just to promote a shift from opinion-based to evidence-based decision making, but recognize that evidence in itself is not the only factor that influences policy — by definition policy-making is a political process — and that its use can be resource intensive. As such, there needs to be a sustained demand for evidence. A key objective of this report is to contribute to the generation of that demand.

Evidence-based policy-making requires that policy makers are receptive to evidence; that they understand the value of evidence; that evidence is seen as a necessity; and that adequate time is given to its collation and use throughout the policy process.

To better understand when and what type of data are required, it is helpful to consider the different steps in the policy cycle:

In *setting the agenda* for policy intervention, information is required to identify critical problems, their magnitude and to prioritize the problems. In assisting *policy formulation and policy choice*, information can assist in delineating and making choices between policy options. In *policy design and implementation*, evidence may be needed to help determine how to choose private sector operators to engage in public-private partnerships, how to design the contract and how to ensure effective monitoring. Recognizing that all policy is experimental, information is also required for *impact evaluation and policy evaluation*.



The policy cycle



Moving towards greater use of evidence-based policy-making can minimise the risks of policy failure. However, as it has resource implications, there is pressure to use existing evidence rather than to invest in the generation of appropriate evidence. The risk in using existing evidence is that it is unlikely to be sufficient, it can be ambiguous and of uncertain quality, it may not be valid or relevant, for example if based on research undertaken at a global level and lacking in context specificity.

In making the case for paying greater attention to the heterogeneity of smallholder participation in markets, it is hoped that this report promotes greater investment in the collection and use of appropriate evidence to allow for informed prioritization and design of policy interventions that are cognizant of the constraints and opportunities faced by different categories of smallholder operating in widely different contexts.

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Closing the gap between actual and potential yields of food staple crops is increasingly recognized as critical for meeting future global food needs and for containing food price increases. Paradoxically, the evidence suggests that supply is relatively unresponsive to higher food prices where there is greatest technical potential for raising levels of productivity: smallholder agriculture in developing countries. Efforts to increase research and development as a basis for improved levels of productivity have limited success at promoting a significant supply response to high food prices unless smallholders' participation in food markets is strengthened. However, neither smallholders nor markets are homogenous. Smallholders face widely different sets of constraints to both their ability and their willingness to increase production for sale in a broad range of

markets, many of which change in terms of their access requirements through time. As a result, policy makers are faced with significant challenges in their attempts at creating conditions that are conducive to a widespread adoption of technologies and practices required to increase production.

This report examines the reasons for, and implications of, heterogeneity in smallholder market participation. It introduces examples of solutions that may be appropriate in facilitating increased levels of market participation in rapidly changing food markets and illustrates the importance of better accounting for smallholder heterogeneity in the design of policy and support measures that will be needed in promoting increases in marketable surplus from these producers.

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