

SUPPORTING SMALLHOLDER FARMERS IN AFRICA: A FRAMEWORK FOR AN ENABLING ENVIRONMENT



AFRICAN SMALLHOLDER FARMERS GROUP

International NGOs working together with Africa's smallholder farmers

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AFRICAN SMALLHOLDER FARMERS GROUP

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The ASFG is a network of UK-based international organisations that share a common commitment to working with and learning from smallholder farmers in Africa. See www.asfg.org.uk for details of members. This framework is based on a literature review done by Hester Le Roux and was prepared with the assistance of ASFG member organisations who participated in ASFG Farmers as Entrepreneurs group meetings. CAFOD, Christian Aid, Self Help Africa and Practical Action staff members have led the process with contributions from GardenAfrica. The content of this report does not necessarily reflect the public positions of all ASFG member organisations.

EXECUTIVE SUMMARY

After years of under-investment agriculture is back in the spotlight, with much of the focus on increasing output from smallholder farmers. There are around 500 million smallholder farmers in the world, and they produce up to 80% of the food consumed in Africa and Asia. They are net buyers of food and very vulnerable to food price increases and spikes. As a group, they are among the poorest and most marginalised in the world. They are also stewards of increasingly scarce natural resources and on the frontline of dealing with the impacts of climate change. Smallholders therefore play a critical role in addressing the challenges of food security, poverty and climate change.

Africa's smallholder farmers face many challenges preventing them from scaling up their participation in markets, including insecure rights to land and natural resources, lack of access to quality inputs and financial services, inadequate support from research and extension services, and high transaction costs caused by poor rural infrastructure. Smallholders have little say in policy decisions that impact on their lives, or in the design of research agendas. In addition, domestic and international markets for agricultural produce are changing rapidly and dramatically, with smaller producers finding it increasingly hard to participate in these markets. Challenges are even greater for women farmers, who constitute the majority of farmers in Africa.

International efforts to support smallholder farmers tend to follow a conventional approach to boosting agricultural productivity, with much of the emphasis on commercialising agriculture using modern inputs and encouraging integration of smallholders into agricultural value chains, particularly those producing for export markets. However, evidence suggests that only a small group of wealthier and better-connected smallholders are currently likely to be able to benefit from opportunities created in this way. For the majority of small-scale farmers, and particularly those that are more marginalised, including women farmers, different forms of support are needed to facilitate their greater participation in markets as a means of increasing food security at the national and household level.

Scaling up smallholder participation in markets

Members of the African Small Farmers Group (ASFG) have extensive experience of supporting smallholders in scaling up their participation in markets, and engage in advocacy for policy change to increase the support farmers receive from national governments and the international development community.

The Group has commissioned a literature review to take stock of the policies, laws, regulations and practices that can support Africa's smallholder farmers in becoming more entrepreneurial. These have been arranged into a framework that includes:

- a. ***foundations***, which potentially benefit the entire rural population, including smallholder farmers;
- b. ***pillars***, which specifically support smallholder farmers; and

- c. ***cross-cutting issues***, which have wider relevance beyond the rural economy.

Based on evidence from the literature review and supported by case studies, the framework suggests a range of possible indicator questions to assess whether governments have in place the right enabling environment to facilitate smallholders' greater participation in markets. The framework is comprehensive, but not exhaustive and is aimed at influencing processes at a national, regional and global level that endeavor to create a more enabling environment for smallholders to participate equitably and sustainably in markets.

The framework

a. Foundations

The policy framework's foundations represent necessary but not sufficient conditions to improve smallholder farmers' access to markets. The three foundations that this framework rests on are:

- rural infrastructure, including rural feeder roads, modern energy services, irrigation and large-scale drainage, and storage and warehousing;
- rural public services that support human development, such as health, education, and water and sanitation; and
- the rural investment climate or enabling environment for business, including small-scale businesses.

a1. Rural infrastructure

Investment in rural public goods such as infrastructure and public services are essential to bring about agricultural growth and poverty reduction, as is a policy environment helpful to small and medium-sized business. Africa continues to suffer from a significant infrastructure gap, particularly in paved and rural feeder road coverage and irrigation infrastructure. Governments should be encouraged to increase their spending on rural infrastructure to the 10 per cent of GDP level committed to through CAADP, and donors should align their support behind this objective. The following indicator questions are suggested:

- What percentage of the national budget is allocated to agriculture? Are funds earmarked specifically for interventions that benefit smallholders?
- What is the level of investment in appropriate and sustainable rural infrastructure – including rural feeder roads, modern energy services (including off-grid provision), irrigation and drainage, and storage and warehousing?
- Are any measures in place to provide incentives to and support Ministries of Agriculture and Finance to take into account the needs of smallholder farmers in their budget planning and allocation?

- Are any incentives in place for private enterprises to provide alternative infrastructure services; to develop demand-driven prototypes and models that promote sustainability and access, and creative financial models to accelerate provision of sustainable infrastructure services?

a2. Rural public services

Public service provision in much of Africa is generally poor and in some cases non-existent. Evidence suggests that public service expenditure, especially on health and education, can influence input productivity and efficiency in agriculture.

- What is the level of expenditure on rural public services, including health, education, and water and sanitation?
- Are women, and politically, socially and economically excluded, and geographically remote smallholder farmer communities effectively targeted in the provision of these public services?

a3. Rural Investment climate

A supportive overall business environment provides the basis on which entrepreneurship can flourish and encourages investment, including in the agriculture sector which could create both value chain and off-farm work opportunities for smallholder farmers. It could also increase the availability of essential private sector-provided farm inputs. Small businesses also benefit from a strong enabling environment, creating the scope for further job creation and increasing the linkages from farming to the rest of the rural economy. indicator questions in this area are relevant to the broader economy, and they include:

- Are property rights recognized and protected?
- Are taxes affecting agricultural investors, including smallholder farmers, relatively low and spread over a wide base?
- Are inflation, interest and exchange rates stable and at manageable levels?
- Is an effective system of contract enforcement in place, and is it accessible and affordable to all investors, including smallholder farmers?
- What are perceptions of sovereign risk? Are farming communities at risk of conflict which could result in destruction of lives and livelihoods and/or forced migration?

b. Pillars

Pillars encompass factors that impact directly and specifically on smallholder farmers in Africa. This section aims to identify those areas where the current consensus approach makes inadequate provision for the conditions that are needed to create a supportive enabling environment specifically for smaller producers.

b1. Access to land and water

The natural resources on which agriculture is based, particularly land and water, are becoming degraded and there is growing competition for their use. Smallholders with weak rights to land and water are facing increasing threats to their access. The effects of climate change exacerbate the situation, and these are expected to intensify over time.

a. Land

Lack of secure tenure and land use rights is one of the key factors influencing African smallholder farmers' productivity and scope for participating in markets. Women's rights are particularly weak. Secure tenure does not necessarily require individual ownership of land or control over resources. Land tenure policy frameworks should accommodate and build on customary norms and practices. Protecting farmers' rights of access and use require urgent attention in the face of large-scale land acquisitions in many African countries. Proposed indicator questions include:

- To what extent is land titled and registered? How easy is it to register land?
- Do land policy frameworks accommodate and build on customary norms and practices?
- Are policies in place to ensure the sustainable management of common property resources?
- To what extent do land laws guarantee secure tenure for women and other vulnerable groups living in poverty?
- Are special provisions in place to close the gender gap in land access? For example, is there a legal requirement for national and local institutions to include women in land management and allocation decisions and in dispute resolution mechanisms?
- Do smallholder farmers, in particular women farmers and those living in poverty, have access to justice and affordable legal services to resolve land disputes?
- Are key international guidelines and frameworks being utilised for responsible governance and investment in land and natural resources and to safeguard the interests of the poorest and most vulnerable?

b. Water

Reliable and affordable access to water is a constant challenge for many African smallholder farmers. Governments should invest in irrigation, but for many smallholders, particularly those in remote areas, good on-farm water management is even more important. This could include rainwater harvesting, water conservation and efficient use in dryland areas. More research is needed into drought-tolerant species. Farmers face growing threats to their water access, including from 'water grabs'. Governments can intervene through the

recognition and protection of water rights and regulating for good governance of privately-managed water resources.

- Does the government prioritise investment in infrastructure to improve smallholder farmers' access to water, including supporting the development of on-farm water management and water harvesting technologies?
- Does the government implement fair water use policies?
- Are water rights recognised and protected? Is special provision made to protect the rights of the most vulnerable and excluded?
- Where water rights are controlled by the private sector, are regulations in place to ensure good governance of the water source and consultation with communities and farmers who rely on it for their livelihoods? Does the government monitor water-sharing commitments in contracts signed with corporate land investors?
- Are implications for water users adequately considered in granting land access to large-scale foreign and domestic investors? Does the pricing of such deals take full account of impacts on water availability and existing users' rights of access?

b2. Inputs and credit

Agricultural inputs are typically provided by private enterprises but input markets are characterised by many failures. State intervention is required to correct these failures, though it is a challenge to design interventions in a way that effectively delivers improved access to inputs and credit markets for smaller producers, in particular to women farmers. Subsidies can help to overcome the issue of cost, although there are strong arguments for redirecting these towards environmentally and financially sustainable, resource-enhancing and affordable farming approaches that work well for smallholder farmers with limited assets and incomes. Suggested indicator questions are:

- Is the state taking appropriate action to ensure provision of inputs for sustainable production to smallholder farmers? (this could include, but should not be limited to, smart subsidies)
- Are effective parastatal marketing board services or other relevant institutions providing access to input markets?
- Are any measures in place specifically to facilitate women farmers' access to inputs?
- Are the voices of smallholder farmers, especially marginalised women farmers, heard and acted upon in decision making on access to inputs and credit?
- Are competition laws in place to prevent the creation of monopolies in input markets?

a. Seeds

African farmers make much less use of improved seed varieties, which contributes to low yields, especially in areas becoming drier or more flood-prone as a result of climate change. A lot of emphasis is being placed on addressing this problem through greater use of biotechnology, but supporters of more sustainable approaches and many small-scale farmers argue that local seed systems are socially, financially and environmentally more sustainable than international seed systems and that it would be more cost-effective and feasible to focus on strengthening these. In addition, the introduction of laws to protect the property rights of companies to the modern plant varieties they have bred raise the costs of these seeds, and also prevent farmers from saving seeds they have purchased from these companies.

- Do national seed laws recognise and protect farmers' rights and access to seeds of their own choosing, including both modern and local varieties?
- Are the rights of farmers to freely breed, conserve and exchange traditional seed varieties enshrined in law?
- Are affordable seeds of good quality, adapted to the changing climate, available for purchase?
- Does government support the design of seed programmes and policies that promote and/or strengthen entrepreneurship in both formal and informal seed systems, including through support for seed banks?

b. Fertiliser

Soils in Africa are often fragile and degraded, and need urgent replenishment, but there are strong differences in opinion on the best way to manage soil fertility. Many African governments and donors focus their efforts on increased use of chemical fertiliser, which can dramatically improve yields. But promoters of more agroecological farming methods question the sustainability of an excessive reliance on chemical inputs, pointing to the negative effects of incorrect and long-term chemical fertiliser use. Evidence shows that impressive yield increases can be achieved using a range of environmentally sustainable methods. An integrated soil fertility management approach recognises the importance of both chemical and organic inputs. Proposed indicator questions in this area are:

- Are incentives available to encourage wider distribution of affordable fertilisers and quality advisory services on their correct application?
- Does the government allocate sufficient funding for research and extension services specifically aimed at supporting integrated soil fertility management?
- Are incentives available to private enterprises and other entities providing integrated soil management services to smallholder farmers?

- Are smart subsidies or other incentives available to support farmers during the adoption of agro-ecological practices and techniques to enhance soil nutrition?

c. Credit

Smallholders have little access to credit and other financial services, which limits their capacity to invest in productivity-enhancing assets and receive higher prices for their output. Agricultural value chains offer one route to increased access to credit, but so far they seem to benefit primarily better-off farmers and those belonging to efficient farmer groups. Governments and donors should provide incentives to encourage private sector innovation in tailoring financial services and products to smallholders' needs. There could also be a role for state-run agricultural finance institutions.

- Does the state provide or support institutions that provide affordable and flexible financial products which are well-suited to the needs of smallholder farmers, such as agricultural development banks?
- Are incentives in place to encourage innovation from the private sector in meeting the credit and other financial needs of smallholder farmers? (for example to promote buyer contracts as secure collateral to access credit/insurance)
- Does the state provide or promote financial literacy training among smallholders, and capacity building/skills development in the financial sector to facilitate better service provision to smallholder farmers?
- Does the government support or participate in any loan guarantee funds that target smallholder farmers?

b3. Markets

Support for smallholder farmers should not focus only on helping them increase production; access to markets that deliver fair returns is as important. Farmers need to have an entrepreneurial market-oriented mindset, thinking from the outset about what they will sell, to whom, and when; but they also need more support from both the public and private sector to access buyers and optimise their returns. Domestic markets hold greater promise for smallholders due to fierce competition in export markets and the high cost of certification and meeting standards. Governments can take steps to boost local demand and provide incentives to buyers, both in the public and private sectors, to source from smaller producers. The majority of farmers will not benefit from being integrated into corporate supply chains such as contract farming without concerted action to protect their interests and ensure fair value sharing, and support for farmer groups. International trade policies continue to damage smallholders' market opportunities by distorting local prices. Proposed indicator questions are:

- Does government direct its support for improving smallholder farmers' market access towards domestic markets, rather than to focus primarily on export markets? For example:

- Are any measures in place to boost local demand and strengthen the market for local smallholders' output?
- Are any preferential public procurement policies in place, which prioritise smallholder producers?
- Are buyers encouraged and given incentives to source from smallholder farmers? Is explicit provision made in such incentive packages for targeting women farmers and other vulnerable groups?
- Does government provide any specific support to smallholder farmers to strengthen their bargaining position in dealing with agribusiness and other corporates, for example through public extension services that include modules on contracts and rights, or facilitating the development of and access to private sector providers of similar services?
- Are smallholders supported in group certification and adherence to international market standards?
- Does the government use all the legal and negotiating tools available (ie anti-dumping measures, import tariffs, trade negotiations) to reduce the impact of international trade rules or agricultural policies (such as the continued use of export and production subsidies in exporting countries that lead to dumping) that reduce returns to smallholder farmers through distorting local prices.

b4. Research and extension services

Evidence confirms that investments in agricultural research for development have a significant effect on growth in the agricultural sector. Investment levels in Africa are far below what is needed to help farmers effectively respond to the challenges of increasing production sustainably and building resilience in the face of climate change. Funding for such research would need to come primarily from public funding. Farmers need to have a greater say in setting research agendas. A strong extension system is critical to moving research between the laboratory and the field, but extension coverage in Africa is very low, requiring renewed investment from the state, including in providing incentives for private providers. Extension services can no longer have a simply technical agenda. In the service provision model the focus is shifting to pluralistic and demand-led approaches. Appropriate research and extension can also help narrow the gender gap in agriculture. Suggested indicators include:

a. Research

- What percentage of overall agricultural investment is directed towards research and development?
- Are incentives in place to attract and facilitate private sector investment in research to help bridge any funding gap? Are clear guidelines in place to ensure such research takes account of the needs of smallholder farmers, not just large-scale commercial producers?

- What support and incentives are in place to encourage research into sustainable agriculture including agro-ecological production technologies, integrated fertility and pest management approaches and participatory breeding of climate adapted seeds?
- What platforms are available for smallholder farmers to provide input into research agendas?

b. Extension services

- What is the extension coverage? Where public provision is inadequate, are incentives in place to encourage alternative models of extension service delivery through incentives?
- What measures are taken to ensure extension curriculums are up to date and meet the needs of smallholder farmers – for example, that they incorporate modules on new innovations in climate sensitive agricultural practices, market participation, and gender equity?

b5. Collective action

Collective action allows farmers to utilise economies of scale to lower their costs and improve their competitiveness, as well as strengthening their marketing capacity and helping them manage risks. Groups are better placed to lobby policy makers and influence research and development assistance agendas. Cooperatives and other producer organisations have a poor track record but this relates more to failures in the mechanisms of collective action in different contexts, rather than the principle. Collective action is particularly beneficial to women farmers. Governments should recognise farmer groups, including more informal ones, and should encourage and facilitate collective action, including through offering tax incentives to producer organisations. Proposed indicator questions on collective action are:

- Is legislation in place to facilitate collaboration? What incentives are used to encourage collective action (eg tax incentives)?
- Are there clear rules on management, ownership and governance of producer organisations?
- Does the legal framework recognise and protect organised farmer groups that are not legal cooperatives? Does the policy framework promote farmer groups other than formal cooperatives?
- Does legislation/regulation make explicit provision for including poor/marginalised farmers, for example by making inclusiveness and member empowerment a prerequisite for registration and access to support? Is female representation in governance structures specifically supported, eg through quotas?
- Is there a legal requirement to assess the social and political impacts of economic reforms on smallholder farmers?

- Is there a legal requirement to consult with smallholder farmers on policies that will affect them? Are special measures in place to ensure women are adequately represented in consultations?

c. Cross-cutting issues

In this conceptual framework consisting of *Foundations* that support the entire rural economy and *Pillars* that support smallholder farmers specifically, a number of issues run through the entire structure as overarching or cross-cutting supports, of great relevance to discussions dealing with every other area included in the framework. The issues cutting across this policy framework are:

- a. Gender equity,
- b. Climate change, and
- c. Food security

No policy indicator questions are suggested specifically for these cross-cutting issues (a brief summary of the main issues can be found in the report). Any policies and regulations aimed at promoting smallholder market participation need to take account of gender equity, climate change and food security.

INTRODUCTION

1. Agriculture is back in the spotlight after decades of neglect, driven in part by mounting concern about food security in the wake of three successive food price crises between 2007 and 2011. Climate change is expected to have a bigger effect on food supply than any other factor, and agriculture in developing countries will be affected more than any other sector by climate change (Conway 2012). Agriculture is also intricately linked to the global problem of persistent hunger and malnutrition, which affects an estimated 870 million people (FAO 2012a); and it is critical to sustainable natural resource management, of land and water in particular.

2. Another driver is agriculture's role in development and poverty reduction: although agriculture contributes only 4% to global GDP (Lybbert & Sumner 2010 in Conway 2012), evidence suggests that agricultural growth consistently has a greater impact on poverty than non-agricultural growth, due to its strong linkages back to the rural economy in particular (Irz et al 2001). In Rwanda and Kenya, the poverty-reducing impact of agricultural growth has recently been found to be as much as three to four times greater than growth generated in other sectors (IFPRI 2012).

3. Smallholder farmers are central to this renewed emphasis on agricultural growth. There are an estimated 500 million smallholder farms in the world; in Asia and sub-Saharan Africa smallholder farmers produce up to 80% of the food consumed and support up to two billion people (IFAD 2010). Of the two-thirds of sub-Saharan Africa's population that resides in the rural areas, the majority can be considered as smallholder farmers (Dixon et al 2004). As a group, smallholder farmers are among the most disadvantaged and vulnerable in the developing world: half of the world's undernourished people, three-quarters of Africa's malnourished children, and the majority of people living in absolute poverty can be found on small farms (IFPRI 2007). Smallholders have a key role to play not only in achieving food security, but also in generating poverty-reducing agricultural growth. They are also stewards of increasingly scarce natural resources and on the frontline of dealing with the impacts of climate change.

4. Although there are many ways to define smallholder farmers, the FAO's criterion of plot size is widely used, with 'smallholder farmers' being farmers who farm plots of 2 hectares or less. While this definition covers mainly crop growers producing both cereal and horticultural crops, for purposes of this report the term will also be taken to include small-scale, family-run livestock farms as well as pastoralists, fisher folk and forest dwellers.

5. Within this group there is significant variation, with smallholders falling into three broad groups¹:

- Farmers who own other assets in addition to their land, such as livestock or machinery; and who have sufficient access to inputs, services and knowledge to enable them to be active in markets to a greater or lesser extent. They are typically better connected, both physically and socially/commercially, and are often involved

in producing for export, niche/high value added markets or integrated rural value chains.

- Farmers with only a little land to farm (one hectare or less) and few other assets; who lack access to high-quality inputs, credit, services and equipment; who may be cut off from markets due to geographic isolation, poor infrastructure, lack of information or a combination of these; whose rights to land and other resources may be weak; and who have not, as yet, managed to access markets in a way which can increase their productivity and lift them out of poverty.
- Finally, those subsistence farmers who are unable to survive on farm income alone, but who rely substantially, or even entirely, on off-farm work, remittances and/or social subsidies. This group includes the poorest and most vulnerable farmers, including a high number of women-headed households; and a growing number of farmers who no longer own any land at all.

6. These three categories of farmers require different forms of support to optimise their engagement with markets. Evidence presented in this report suggests many of the opportunities and benefits relating to new markets and increased agricultural investment currently observed in Africa reach only the wealthier and better-connected smallholder farmers, i.e. those in the first group, representing a small minority of the overall smallholder population.

7. However, members of the African Smallholder Farmers Group (ASFG) have extensive experience of successfully supporting smallholder farmers in Africa in becoming more entrepreneurial, particularly those poorer farmers who were previously excluded from markets, including women farmers (the second group). Multiple case studies confirm that, given the right support, these farmers are able to increase their productivity and competitiveness and participate in traditional, restructured or new markets (see, for example, the case studies discussed in ASFG 2010). The challenge is to facilitate this process on a larger scale.

8. The renewed focus within the international development community on agriculture is evident in initiatives such as the World Bank's *Doing Business in Agriculture* (DBA) project, which aims to develop a set of indicators that would help incentivise governments to make the necessary reforms to promote increased investment in agriculture. This follows on the Bank's recently completed *Agribusiness Indicators* project, which developed an approach for assessing the ease of doing agribusiness in seven pilot countries in Africa over 3 years.

Box 1: Who is the framework for?

This framework is aimed at those who own or have user rights to land, even a small area. Many of the policy areas highlighted in the framework will be less relevant to subsistence farmers with very little or no land and other assets. The poorest of the rural poor require a separate set of measures to protect their interests, including:

Box 1: Who is the framework for? (contd.)

- incentivising off-farm job creation, in agribusiness and elsewhere;
- fair labour practices and protection of workers' rights;
- social protection and productive safety nets; and
- voice and representation in policy decisions.

Nevertheless, strengthening the “Foundations” underpinning agricultural investment (rural infrastructure, rural public goods and the investment climate, as set out in Chapter 3) will certainly improve the prospects of subsistence farmers and the very poorest as well.

On the question of how many farmers will benefit from investment in agricultural development, Wiggins (2011) reviews research conducted in 12 Latin American countries, which found that out of nearly 19.5 million households surveyed, no more than one-third had a reasonable prospect of leaving poverty as full-time farming households; the remaining two-thirds needed options to complement their income from farming (Berdegue and Fuentealba 2011, cited in Wiggins 2011). This implies that a multiplier of 2.1 would be required from family labour of farms to jobs for others; and if this is not achieved the result would be either large-scale migration away from farms or a large pool of rural unemployed, living in dire poverty.

9. However, early indications are that the DBA might encourage inclusive agribusiness investment which could potentially benefit mainly those smallholder farmers with enough assets and access to participate in new markets. There are fears among members of the ASFG that the DBA will not make adequate provision for – or could even actively damage the interests of – those smaller producers who may require a different set of policy measures to enable them to overcome the obstacles currently preventing their integration into markets.

10. The purpose of this framework is to identify what those policy measures could be. It suggests a range of indicators focused on the policies, practices, laws and regulations that can help create an enabling business environment for farmers and specifically support those smallholder farmers that are not yet market-ready but who have the potential to be active market participants. The intention is for this framework to be used as a basis for advocacy on policy reform aimed at increasing the number of poorer farmers that benefit from investment in agricultural development. The framework does not purport to suggest solutions for the poorest farmers, who will benefit more from a different set of policy interventions as set out in Box 1.

11. Development of the framework was based on a literature review that focused on obstacles standing in the way of smallholder farmers' market access, and recommendations on how to overcome them. Findings from the literature are enhanced with case studies drawn from the collective in-country experience of ASFG members. Indicators are wide-ranging but this is by no means an exhaustive list.

Box 2: Obstacles to smallholder farmers' market access

A range of factors conspire to prevent smallholder farmers in Africa from scaling up their participation in markets. Many farmers do not have secure rights to the land, forests, fishing waters or other resources they depend on for their livelihood. Women farmers' rights are particularly insecure. This discourages investment in productivity-enhancing assets and increases farmers' vulnerability. Competition for land and water is increasing due to global food security concerns, demand for biofuels and climate change impacts. This poses a threat to those farmers whose rights to resources are insecure. Climate change is increasing the frequency and severity of the extreme weather events such as droughts and floods that can have a devastating impact on smallholder output.

Many smallholders farm on poor, fragile or degraded soils, and lack access to affordable and appropriate inputs including quality seeds, fertiliser and pest control measures which leaves them with very low yields. A lack of accessible storage and warehousing facilities means farmers often have to travel long distances to markets, while poor infrastructure in many rural areas result in very high transport costs. As a result of decades of under-investment in agriculture, smallholders do not have adequate access to research or extension services, and often lack information about prices which, combined with their weak bargaining position, often result in them not achieving optimal prices for their output. Smallholder farmers are typically poorly served by finance providers, with little access to credit or savings and insurance instruments. Small-scale producers tend to have little say in decisions that affect them and no scope for influencing research or policy agendas. Finally, despite growing demand in domestic and global markets for agricultural produce, these markets are undergoing rapid and dramatic changes that make them increasingly inaccessible to many small-scale producers.

The remainder of this section discusses these obstacles in more detail.

Sources include Van Schalkwyk et al (2012), IFAD (2010), Jaffee (2011), ASFG (2010), Vorley et al (2012)

12. It should be noted that this report is an internal document intended for reference only. It is not a position paper setting out the collective views of the ASFG, and does not purport to be representative of individual ASFG views.

THE POLICY SUPPORT FRAMEWORK

a. Some general observations

13. The intention with this framework is to provide an evidence-backed description of a set of laws, regulations, policies and practices that will promote and enable investment from smallholder farmers and others along the agricultural value chain; and to help scale up their participation in markets.

14. Case studies confirm that once obstacles are removed, farmers will self-mobilise to increase their productivity and participate more actively in available markets. Government's role should ideally be restricted to removing obstacles, promoting and enabling investment and protecting farmers' interests. For example, the Future Agricultures Consortium's recently-completed case studies in Ethiopia, Ghana, Kenya, Malawi and Tanzania² on successful commercialisation by smallholder farmers found little evidence of outside intervention or stimulus: given supportive circumstances (in this case, government-provided irrigation infrastructure was a particularly significant factor), farmers took the initiative and created their own opportunities to commercialise.

15. A number of general principles are worth bearing in mind in using this framework:³

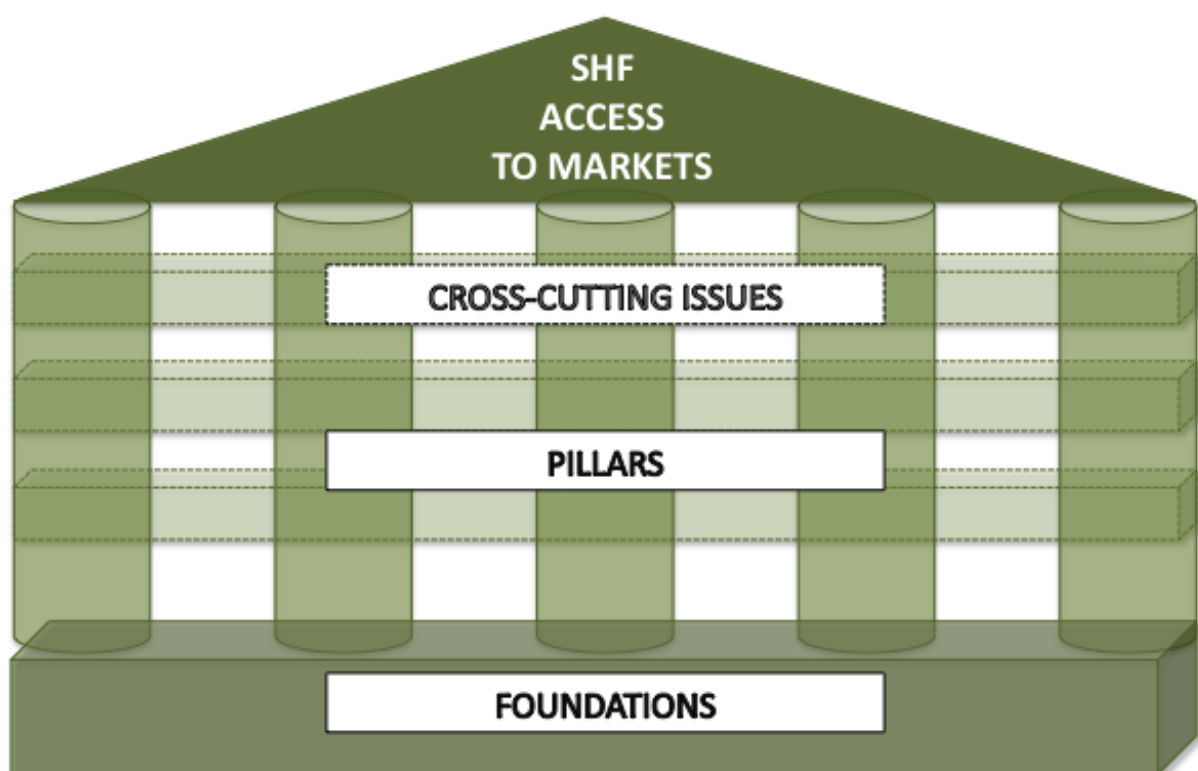
- No one approach will fit all – social, political and economic context is all-important. The framework can, at best, be a guide.
- Policies do not work in isolation; a holistic approach is essential.
- It is crucial to monitor the impact of policies on an ongoing basis. How best to support smallholder farmers in the context of a dynamic and rapidly evolving global environment is still an area of great uncertainty and many mistakes are likely to be made. Instead of persisting with policies that are not working, governments and other stakeholders should be encouraged to respond swiftly to change, learn from mistakes and adapt.
- Not everything needs to be perfect for policy to work; even small improvements in the fundamentals can deliver positive results.
- An incremental approach can deliver better outcomes than radical interventions or large-scale change.
- Finally, getting policy right is only the first step. Implementation is key.

b. Framework design

16. There is, of course, no single set of policies that will improve smallholder farmers' prospects in every African country and under all circumstances. However, a number of

conditions repeatedly show up in the literature as being material in the majority of cases where smallholder farmers have raised their output and incomes and participated in agricultural growth (Wiggins 2011). For purposes of this framework these have been arranged into:

- *foundations*, which potentially benefit the entire rural population, including smallholder farmers;
- *pillars*, which specifically support smallholder farmers; and
- *cross-cutting issues*, which have wider relevance beyond the rural economy.



FOUNDATIONS

17. The foundations represent necessary but not sufficient conditions to improve smallholder farmers' access to markets. The three foundations that this framework rests on are:

- rural **infrastructure**, including rural feeder roads, modern energy services, irrigation and large-scale drainage, and storage and warehousing;
- rural **public services*** that support human development, such as health, education, and water and sanitation; and
- the rural **investment climate** or enabling environment for business, including small-scale businesses.

18. African governments recognised the importance of substantial investment in agricultural development with creation of the *Comprehensive Africa Agriculture Development Plan* (CAADP), announced in the 2003 Maputo Declaration⁴. Through CAADP African governments committed to increasing their annual spending on agriculture to 10% of GDP by 2008, with the objective of generating 6% p.a. growth in the sector. By February 2013, 30 countries had signed the CAADP compact and 26 had finalised related Investment Plans (NEPAD 2013).

19. However, only eight countries had achieved or exceeded the 10% investment target by mid-2012; and only 10 succeeded in realising 6% annual growth in agricultural production (NEPAD 2013). During 2004-2007, almost as many countries reduced their agricultural spending as increased it (ActionAid 2009). Between 1990 and 2005 agricultural spending in sub-Saharan Africa averaged only between 4 and 6% of overall spending (Fan et al 2009). Fan et al point out that there was a 75% surge in average agricultural spending between 2000 and 2005; however the starting point was so low that spending levels remain well below what is needed to achieve significant and sustained agricultural growth. There is also some inconsistency in how governments categorise agricultural spending for purposes of reporting on CAADP progress – for example, some countries include investment in rural infrastructure such as feeder roads which, while critical to agricultural development, are not strictly speaking meant to count towards CAADP targets for agricultural support (Curtis 2012).

20. Based on 2006 data, ActionAid estimates the investment shortfall between actual levels and the aimed-for 10% to be US\$2.9 billion a year, and identifies lack of political will as the main reason why more countries have not met CAADP targets (ActionAid 2009). It is worth noting that Asian governments devoted around 20% of overall spending to agriculture during the green revolution (Conway 2012).

21. Although the primary responsibility for providing these foundational conditions rests on the state, in the context of severe resource constraints there is an important role for development agencies, donors and, increasingly, the private sector. The *New Alliance for Food Security and Nutrition* is a joint commitment by G8 nations, African governments and

private sector partners to lift 50 million people out of poverty over the next 10 years through inclusive and sustained agricultural growth. Building on the agenda of the *Global Partnership for Agriculture, Food Security and Nutrition* which preceded it, the *New Alliance* aims to support the accelerated implementation of CAADP, among others through catalysing private sector investment in African agriculture. A reported US\$3 billion of private sector investment has been committed to date. However, serious concerns have been expressed about many aspects of the *New Alliance*. Some argue that it is not inclusive or democratic enough; that it is too closely aligned with the interests of large-scale agribusiness, which results in its promoting a particular approach to agricultural development which focuses strongly on green revolution-type policies (driven by modified seeds and large-scale use of agrochemicals) at the expense of more agro-ecological and sustainable approaches; and that these investments will not bring tangible and sustainable benefits to the majority of smaller producers (see, for example, Oxfam 2012a, IDC 2013).

22. Critics of the *New Alliance* argue for adherence to the principles of the Committee on World Food Security (CFS), whose *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* promote secure tenure rights and equitable access to land, fisheries and forests as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. The *Voluntary Guidelines* were adopted by the CFS after a three-year process of consultation and are widely recognised for putting emphasis on the rights and needs of women, indigenous peoples and the poor. The effectiveness of these guidelines will depend on how they are implemented. Social movements and NGOs in the CFS are lobbying for the *Voluntary Guidelines* to be translated into binding national laws, while many in the private sector believe they should remain voluntary (Grain 2013).

23. Turning now to the individual foundations and their particular relevance for smallholder farmers, a number of potential indicator questions are suggested which could be used to assess whether governments are taking the right actions to ensure a supportive business environment exists for smallholder farmers to participate in markets and share in the benefits of increased agricultural investment.

1. Rural infrastructure

Possible policy indicator questions: rural infrastructure

- What percentage of the national budget is allocated to agriculture? Are funds earmarked specifically for interventions that benefit smallholders?
- What is the level of investment in appropriate and sustainable rural infrastructure - rural feeder roads, modern energy services (including off-grid provision), irrigation and drainage, and storage and warehousing?
- Are any measures in place to incentivise and support Ministries of Agriculture and Finance to take into account the needs of smallholder farmers in their budget planning and allocation?

Possible policy indicator questions: rural infrastructure (contd.)

- Are any incentives in place for private enterprises to provide alternative infrastructure services; to develop demand-driven prototypes and models that promote sustainability and access, and creative financial models to accelerate provision of sustainable infrastructure services?

24. Investment in rural public goods such as infrastructure and public services has been shown to be essential for agricultural growth and poverty reduction. Improved infrastructure is strongly associated with better functioning markets as well as reducing poverty. IFAD's 2011 Rural Poverty Report quotes examples from Bangladesh, Morocco and India where better rural roads had a positive impact on agricultural production, input use, use of extension services, rural incomes and off-farm wage earning opportunities. In India, every additional million rupees spent on rural roads during the 1990s was found to lift 880 people out of poverty (Fan 2010 in IFAD 2010).

25. Governments should be encouraged to increase their spend on rural infrastructure, and donors should align their support behind this objective. Ghana provides an example of where such investment has delivered very positive returns. Increased investment in rural roads and electricity was an important part of the economic reforms started in 1983; it contributed the turnaround in Ghana's agriculture sector and helped make it one of the top 5 performers in the world in terms of agricultural growth over the past 25 years, realising average growth of 5.1% per year between 1982 and 2007 (Wiggins 2011).

26. However, Foster and Briceño-Garmendia (2010) describe how Africa continues to suffer from a significant infrastructure gap. Moreover, based on current trends this gap is set to keep widening. Africa's networks lag behind those of other developing countries on almost every measure of infrastructure coverage, and are characterised by missing regional links and stagnant household access. The gap is particularly large in paved road coverage: in low-income African countries the density of paved roads is only one-quarter of low-income countries in other regions, and infrastructure services are twice as expensive. Of particular relevance to smallholder farmers, access to infrastructure in rural areas is only a fraction of that in urban areas, even when urban coverage is already low by international standards (see also Livingston et al 2011).

27. Energy access is essential for economic development, as recognised by the UN in marking 2012 the *International Year of Sustainable Energy for All*. In the 2012 Poor People's Energy Outlook, Practical Action notes that access to energy services can enable a smallholder farmer to:

- a. increase productivity and yields via improved efficiency of land preparation, planting, cultivation, irrigation, and harvesting;
- b. improve processing, providing better quality and quantity of products at less time and effort via energy supported cooking/heating, storage, preservation, or transformation into higher quality/added-value forms;

- c. earn more from produce through new market opportunities and access to information about pricing.

For poor farmers to achieve these goals and realise higher incomes as a result requires improved quality and affordability of energy supplies, an increase in the amount of energy used, and access to a wider range of appliances providing energy services. The report highlights how most current investment in energy in Africa tends to be focused on large-scale electricity infrastructure, generation, grid and regional interconnection projects. Whilst this investment is likely to improve the general rate of access to electricity and its efficiency, security and affordability, it is unlikely to address the needs of poor rural populations, including small-scale farmers. For the tens of thousands of remote villages in sub-Saharan Africa that are far from the grid, decentralised provision represents the least-cost option for accessing energy. The report argues for greater allocation of funds to local-level financing that can better address the energy needs of poor communities (Practical Action 2012).

28. Another form of rural infrastructure of great relevance to smallholder farmers is large-scale irrigation and drainage. The productivity of irrigated land is approximately three times greater than that of rain-fed land (FAO 2011b), but only 4% of the arable land area in Sub-Saharan Africa is irrigated compared to nearly 40% in South Asia. CAADP identifies investment in water programmes as a priority; it estimates that as part of a wider set of measures to promote agricultural and rural development, an annual investment of around US\$2 billion would be needed to boost irrigated agriculture in Africa. Investment in dissemination and resourcing of low cost irrigation technologies that are suited to the needs of small scale farmers (such as hand pumps, water harvesting and sand dams) is specifically needed, from both the public and private sectors.

29. Public investment in warehousing and post-harvest storage facilities is also of great importance. Post-harvest losses leave farmers with less to sell, reducing their income; while lack of access to safe storage forces them to sell their output immediately, often at less-than-optimal prices. Smallholder farmers lose between 10 and 40% of their crop due to post-harvest losses from disease, pest infestation, or rotting (Garvelink et al 2012). Losses often occur close to where crops are grown, and in many cases could be prevented with very basic interventions. In addressing this problem the focus tends to be on large-scale warehouse storage combined with warehouse receipt systems; but smallholder farmers typically do not produce enough to meet the minimum volume requirements usually associated with these systems. Joining forces with other farmers in cooperatives or other farmers groups can help overcome this obstacle, but for many farmers household or village-level storage presents a lower-cost alternative. Simple and low-cost interventions are often available and more accessible to small-scale producers; for example, post-harvest losses of maize can be substantially reduced through training on drying techniques and providing basic storage tools like actellic dust and storage bags (Garvelink et al 2012).

2. Rural public services

Possible policy indicator questions: rural public services

- What is the level of expenditure on rural public services, including health, education, and water and sanitation?
- Are women, politically, socially and economically remote and marginalised smallholder farmer communities effectively targeted in the provision of these public services?

30. Public service provision in much of rural Africa is patchy or even non-existent. Access to affordable, adequate healthcare is a key determinant in the prospects of the rural poor. In a wide-ranging study of 1,700 households in 20 rural villages in Western Kenya, villagers overwhelmingly cited poor health and health-related expenses as the reason they declined into poverty (Krishna 2004 in Conway 2012). Education provision is often inadequate, and many farmers cannot afford to send their children to school, either because of distances and lack of transport and infrastructure, or because they simply cannot afford doing without that child's contribution on the farm where family labour drives production.

31. There is not a lot of data available on returns to investment of various categories of public spending in Africa; more work appears to have been done on this subject in other regions (Benin 2009). A recent quantitative study of sub-Saharan data by the IFPRI provides some evidence that public service expenditures, especially on health and education, can influence input productivity and efficiency in agriculture, but concludes that "the results call for better data on public service expenditures so that the relationships between labour, health, and government provisions can be better understood" (Allen and Qaim 2012). For governments wanting to promote increased agricultural growth in the context of severe budget constraints, it would be very useful to have more information on where their investment would make the biggest difference. This could be a valuable area for donors and international development institutions to support further research.

3. The investment climate

Possible policy indicator questions: (rural) investment climate

- Are property rights recognised and protected?
- Are taxes affecting agricultural investors, including smallholder farmers, relatively low and spread over a wide base? Are inflation, interest and exchange rates stable and at manageable levels?
- Is an effective system of contract enforcement in place, and is it accessible and affordable to all investors, including smallholder farmers?

Possible policy indicator questions: (contd.)

- What are perceptions of sovereign risk? Are farming communities at risk of conflict which could result in destruction of lives and livelihoods and/or forced migration?

32. A supportive overall business environment provides the basis on which entrepreneurship can flourish and encourages investment, including in the agriculture sector which could create both value chain and off-farm work opportunities for smallholder farmers. It could also increase the availability of essential private sector-provided farm inputs such as seeds, fertiliser and credit. Small businesses also benefit from a strong enabling environment, creating the scope for further job creation and increasing the linkages from farming to the rest of the rural economy.

33. Features of a supportive enabling environment include (Shepherd 2007, Wiggins 2011, NEPAD-OECD 2011):

- a. Macro-economic stability and good monetary policies, where inflation is under control, the exchange rate is competitive, and interest rates are fairly low.
- b. A regulatory environment that ensures good governance and quality standards but does not deter investors; where property rights are protected, contract law recognised and the justice system functioning; and where taxes are modest but broad-based.
- c. Peace and security, law and order, and political stability with no rampant corruption.

34. The NEPAD-OECD draft *Policy Framework for Investment in Agriculture* recognises that sustainable growth in agriculture relies on policies that go beyond agriculture itself, and identifies nine policy areas that are key to improving a country's environment for agricultural investment (FAO 2012), including taxation. Taxation can be a disincentive and create high transaction costs for small-scale producers; and taxes are often applied without enough consideration of how they will harm the competitiveness of a value chain. How local taxation policy plays out at district and state level can deeply affect the efficiency of the value chain and returns to producers. Issues highlighted in the draft *Policy Framework* include questions around how taxation is administered and co-ordinated between the federal/central and state/local levels, and whether taxes paid by entrepreneurs, producers and investors accrue to local government so as to fund the provision of local public goods, such as basic infrastructure needed for agricultural development (NEPAD-OECD 2011).

35. Investment is more likely to take place in an environment where investors trust in the integrity of the markets, and a crucial component of such integrity is a legal framework capable of ensuring the enforcement of contracts, the protection of property rights and the fair resolution of disputes. The system of contract enforcement needs to be effective and widely accessible to all investors, including smallholder farmers. Governments should establish mechanisms for dispute settlement to ensure the widest possible scope of protection at reasonable cost (NEPAD-OECD 2011). Ensuring contract enforcement is

identified as one of the key functions of government in ensuring a supportive investment climate in the 2005 *World Development Report* (cited in FAO 2012).

36. For smallholder farmers the issue of land use rights is particularly critical, with lack of secure land tenure one of the main factors inhibiting their own investment in increased productive capacity. The subject of rights to land and other natural resources is dealt with separately under Pillar 1 of the framework (see Chapter 4).

37. A lack of peace and stability can prevent longer-term investment; or prevent successful smaller-scale projects from being scaled up. Farmers who experience instability are unlikely to make the necessary investments in productivity-enhancing assets. Christian Aid reports that in South Sudan, conflict and the resulting constant migration means that few people are willing to invest in farms, which has major impacts on local markets and livelihoods. A recent article in the Guardian newspaper describes how an NGO-supported project in the DRC to improve cassava yields using simple technologies delivered impressive results, while also empowering local women; but instability in the region prevented it from being scaled up (Tran 2013). On the other hand, when peace and security returns and the investment climate improves, this can create enormous new opportunities for farmers, as seen in the dramatic improvement in the welfare of Rwanda's coffee producers after the end of the genocide in 1995 (Wiggins 2012).

38. Wiggins (2012) points out that the investment climate need not be perfect, and that even small improvements can have a dramatic effect: "The important point is to remove the more egregious obstacles to investment, such as rampant inflation, insecurity, threats of expropriation, red tape, or very high taxation". Wiggins quotes the example of China's reforms in 1978 which were "far from ideal" and centred on only four policy levers out of a much larger set of issues; but they managed to remove some of the worst obstacles that were preventing private endeavour, with dramatic results.

PILLARS

39. The next section deals with those factors that impact directly and specifically on smallholder farmers in Africa. Suggested indicator questions included in this section aim to identify those areas where the current consensus approach makes inadequate provision for the conditions that are needed to create a supportive enabling environment for smaller producers in particular. As referred to earlier, there is broad agreement of the set of challenges that need to be addressed in order to increase smallholders' access to markets; but the conventional approach to these addressing challenges often focuses on solutions that are likely to benefit only a small group of wealthier and better-connected farmers – for example, those near roads or irrigation systems, or belonging to efficient farmer organisations - while failing to address the particular constraints faced by smallholders with fewer assets or access to infrastructure, resources and representation. For each of the pillars set out in the next section, indicator questions are suggested for policies, laws, regulations and practices that could provide support for those smaller producers in particular.

1. Access to land and water

40. IFAD's 2011 Rural Poverty Report highlights how the natural resources on which agriculture is based – land and water above all – are becoming degraded and there is growing competition for their use. Climate change is already exacerbating this situation, making agriculture more risky, and it will have an even greater impact in the future (IFAD 2010).

a. Land

Possible policy indicator questions: Access to land

- To what extent is land titled and registered? How easy is it to register land?
- Do land policy frameworks accommodate and build on customary norms and practices?
- Are policies in place to ensure the sustainable management of common property resources?
- To what extent do land laws guarantee secure tenure for the poor, for women and for other vulnerable groups?
- Are special provisions in place to close the gender gap in land access? For example, is there a legal requirement for national and local institutions to include women in land management and allocation decisions and in dispute resolution mechanisms?

Possible policy indicator questions: Access to land (contd.)

- Do smallholder farmers, in particular women farmers and the poor, have access to justice and affordable legal services to resolve land disputes?
- Are key international guidelines and frameworks being utilised for responsible governance and investment in land and natural resources and to safeguard the interests of the poorest and most vulnerable?

41. Lack of secure tenure is one of the key factors influencing African smallholder farmers' productivity and scope for participating in markets. Farmers who do not know what their rights are or who fear that those rights are not secure are less likely to invest in productivity-enhancing assets and are also unlikely to qualify for credit to facilitate such investment (Shepherd 2007). Many African countries have no formal land titling or registration system, often because landholding is predominantly based on communal and shared rights of access and use. More than 90% of the rural population of Africa accesses land and natural resources via customary tenure systems, which may or may not be recognised by the state (UNDP 2006). Land titling and registration is an important step towards greater tenure security.

42. Progress is being made with rationalising customary and statutory laws and decentralising land management organisations in several African countries (Garvelink 2012a), and many have implemented land reform programmes which include fast-track titling mechanisms. For example, in Madagascar poor people were banned from owning land they depended on for their survival until the government introduced a policy to improve land security in 2005. As a result Malagasies could formalise ownership of the land using a simple certification process. With the support of IFAD, by 2012 over 3,000 land certificates had been distributed through decentralised land administration offices, in a process participants found "quick and easy". Special attention was paid to equitable distribution of certificates including to the poorest and to women (IFAD 2012).

43. Secure tenure does not necessarily require individual ownership of land or control over resources. For many years, efforts to improve tenure security focused almost entirely on private entitlement, with the predominant policy prescription being the individualisation of land held under custom. However, evidence is building that land tenure reform and individual property rights over former communal lands do not necessarily lead to increased productivity (Pinckney & Kimuyu 1994). Smallholders often depend on more flexible, diversified and common property systems where their influence over access to various resources is greater. Policy frameworks that accommodate and build on customary norms and practices are therefore likely better to serve their needs; this could include improved tenancy arrangements rather than outright ownership. Land reform strategies should take account of the prevailing farming system and the specific tenure arrangements for different land use practices that it comprises. Mwijage et al (2011) quote the example of tenure reforms in the banana-growing region of northwest Tanzania, where customary tenure and land use practices were destabilised by programmes facilitating individual control of previously communal lands.

44. Policies aimed at sustainable management of common resources can also be more useful than individualising access rights. In Nepal a leasehold community forestry project involved groups of poor forest users being given long-term leases to severely degraded areas of forest for them to manage, regenerate and protect. 65% of the forest plots were regenerated between 1990 and 2009, while household income increased by more than 70% over the same period (IFAD 2012).

45. Women's land rights are particularly weak, as they are often tied to their filial connections, which means they are at great risk of losing access to land when their circumstances change (for example, when a husband dies). Women formally own only 1% of agricultural land in Africa, despite producing 80% of the food and doing most of the work in storing, processing, transporting and marketing it (Sanginga (IDRC) quoted in Bafana 2008). Closing the gender gap in land access requires special provisions to be put in place, such as making it a legal requirement for national and local institutions to include women in land management and allocation decisions and in dispute resolution mechanisms.

46. Land laws should guarantee secure tenure for the poor, for women and for other vulnerable groups. Rwanda's new land policy enacted through the 2005 Organic Land Law has the explicit goal to protect and enforce landholders' rights and to provide land tenure security for all citizens without discrimination. A study into the impacts of the new law found that it is having a positive impact in safeguarding, protection and enforcement of land rights for widows and female orphans (Uwayezu & Mugiraneza 2011).

47. Land and resource users need clarity about the nature and duration of their rights and those rights need to be provable, recognised and secure. But property rights alone are not enough to achieve tenure security: smallholders also need access to trustworthy land administration, affordable legal services, and honest, fair and gender-neutral enforcement and judicial systems (Garvelink 2012a). Indeed, on their own formalising property rights could lead to negative outcomes such as the concentration of land rights or resource control in the hands of powerful local elites. Women farmers in particular tend to lose out when land and resource access rights are formalised, as such rights would typically vest with men (Quan et al 2004).

48. The spotlight on tenure security is intensifying amidst growing concern about the number of large-scale land acquisitions that have been taking place in recent years in several African countries (for a sample of the very large literature on the topic see Cotula et al 2009, Oxfam 2012b, Cotula & Polack 2012). Demand for biofuels and increased food production, particularly of meat, creates growing pressures to consolidate small landholdings and to convert 'unused' or 'unproductive' land into commercial farms, often run by foreign agribusinesses. In many cases these acquisitions have resulted in forest dwellers, pastoralists who use large areas of grazing land, and smallholder farmers lacking formal title, losing their rights to communal lands or access to the natural resources they depend on for their livelihoods. The fact that many of these 'land grabs' are marked by a distinct lack of transparency (an issue addressed by the *Land Matrix*) and that they are more likely to occur in countries with weak governance structures rather than those with a large surplus of arable land, adds to the concern (Oxfam 2012b). The experiences of the Green Belt Initiative in Malawi, as well as a number of case studies on large-scale land investments documented in the literature demonstrate that so far smallholder farmers have nearly always lost their land deals of this nature (Chinsinga and Chasukwa 2012 on Malawi; see also Cotula et al

2009, Cotula & Polack 2012, Daniel & Mittal 2010, and work by the *International Land Commission* and the *Land Matrix*). Oxfam and others are calling on the World Bank to temporarily freeze investments involving large-scale land deals so it can review its advice to developing countries, help set standards for investors, and introduce more robust policies to stop land grabs.

49. A number of international initiatives have emerged that aim to address, among other issues, farmers' access to land and natural resources. These include the Committee on CFS *Voluntary Guidelines*; the World Bank/UNCTAD/IFAD/FAO's *Principles for Responsible Agricultural Investment Principles that Respect Lives, Livelihoods and Resources* (PRAI); and the Africa Union's (AU) *Framework and Guidelines on Land Policy in Africa*. Although on their own they may not be enough significantly to improve the outcomes of the large-scale land deals across sub-Saharan Africa, governments should nevertheless be encouraged and supported to follow these guidelines and implement best practice.

b. Water

Possible policy indicator questions: Water

- Does the government prioritise investment in infrastructure to improve smallholder farmers' access to water, including supporting the development of on-farm water management and water harvesting technologies?
- Does the government implement water use policies?
- Are water rights recognised and protected? Is special provision made to protect the rights of the most vulnerable and excluded?
- Where water rights are controlled by the private sector, are regulations in place to ensure good governance of the water source and consultation with communities and farmers who rely on it for their livelihoods? Does the government monitor water-sharing commitments in contracts signed with corporate land investors?
- Are implications for water users adequately considered in granting land access to large-scale foreign and domestic investors? Does the pricing of such deals take full account of impacts on water availability and existing users' rights of access?

50. Reliable and affordable access to water is a constant challenge for many African smallholder farmers. Although Africa has vast under-utilised water resources, they are very unevenly distributed, with three-quarters of African countries located in arid and semi-arid zones (FAO-WALS). Population growth, over-use and climate change are contributing to increasing water scarcity. Rainfall uncertainty is the principal constraint to increased agricultural productivity in much of sub-Saharan Africa. Irregular supply and extreme events such as droughts and floods, which are increasing both in frequency and intensity due to climate change, can have a devastating impact on harvests.

51. The FAO estimates that sub-Saharan Africa currently uses only 3% of its available water resources and at present only 4% of arable land is irrigated compared to some 40% in Asia (FAO-WALS). As irrigated land is approximately three times more productive than rain-fed land, there is a strong case to be made for increasing the area of farmland under irrigation. Governments should direct significant resources to investing in large-scale irrigation projects, as suggested in the section above dealing with rural infrastructure.

52. However, focusing exclusively on large-scale irrigation schemes will not solve the water challenge that many smallholder farmers face. Especially in remote regions with intermittent or no access to energy, hi-tech drip or pumping systems are of little use to smallholders. Appropriate innovative technologies are required to manage and increase the quantity of water on farmers' fields. Good on-farm water management needs to be promoted and training provided in techniques such as rainwater harvesting, water conservation and efficient use in dryland areas. There is also an urgent need for more research on, and promotion of, drought-tolerant species that are better suited to dryland production.

53. Women in particular spend hours every week collecting water, which impacts significantly on their farm productivity and output. Upgrading rural water infrastructure to improve smallholder access to clean sources and reduce the time required to collect and store water would have a significant impact on women farmers' productivity, which has been shown to translate into higher levels of investment into farm assets as well as children's health and education.

54. Rainwater harvesting techniques are simple, small-scale, cost-effective schemes that involve the capture, storage and redirection of rainfall and runoff using simple technologies such as stone bunds. These schemes are within reach of most smallholder farmers and offer the potential to double crop yields. However, whilst water harvesting projects have delivered impressive results on a localised level, plot-level results have rarely been replicated successfully (Conway 2012).

55. Water availability is not the only issue affecting smallholder farmers in Africa. Increasing commercialisation of agriculture and the growing presence of large-scale agribusinesses create strong competition for water and other resources, and smaller producers are often faced with losing their rights of access. Government can intervene through the recognition and protection of water rights, particularly for vulnerable water users including the poor and marginalised, and women farmers.

56. Where water rights are controlled by the private sector, regulations are needed to ensure good governance of the water source and to require that decisions around resource utilisation are taken in consultation with communities and farmers who rely on it for their livelihoods. For example, when a state-owned sugarcane scheme in Burkina Faso was sold to a private company, management of the public dams used for irrigation by the Karfiguela rice-growing scheme was also handed over to the company. As pressure on the water resource grows – rice farmers want access to more water in order to double-crop but the company is refusing to release the additional water to them – dissatisfaction and tension is mounting and calls are increasingly being made on the government to take back control of the dams to ensure equitable management of the shared resource (Levite 2010).

57. Concerns are growing that many of the so-called land grabs discussed in the previous section are in fact ‘water grabs’. In a special issue of the *Water Alternatives* journal, Mehta (2012) point to the interconnectedness of water and land and argue that water is both a target and driver of the global rush to acquire land, even though it is often not explicitly mentioned in the contracts governing large-scale land acquisitions. The journal discusses several examples of ‘water grabbing’ deals in sub-Saharan Africa, most of which resulted in the loss of water rights for indigenous communities including smallholder farmers, often with devastating consequences. For example, a study into recent large-scale land acquisitions for biofuel production in the Ashanti, Brong-Ahafo and Northern regions of Ghana found an almost universal lack of consideration of the implications of large-scale land deals for crop water requirements, the ecological functions of freshwater ecosystems and water rights of local smallholder farmers and other users (Williams et al in Mehta 2012). Because land and water management policies and institutions were not considered jointly in acceding to large-scale land deals, the benefits derived by local people were insufficient to cover the involuntary permanent loss of their water rights and livelihoods and the risks posed to ecosystem services. In negotiating large-scale land deals with foreign investors, governments need to ensure that proposed pricing takes into account any impacts on water availability and access for existing users including farmers; and should put in place measure to safeguard such access.

2. Inputs and credit

Possible policy indicator questions: inputs and credit (general)

- Is the state taking appropriate action to ensure sustainable provision of inputs to smallholder farmers? (this could include, but should not be limited to, smart subsidies)
- Are effective parastatal marketing board services or other relevant institutions providing access to input markets?
- Are any measures in place specifically to facilitate women farmers’ access to inputs?
- Are the voices of smallholder farmers, especially marginalised women farmers, heard and acted upon in decision making on access to inputs and credit?
- Are competition laws in place to prevent the creation of monopolies in input markets?

58. To scale up their participation in markets smallholder farmers need to produce more of the right kinds of products to allow them to take advantage of market opportunities throughout the year. Diversifying their output will also help increase resilience against price and weather shocks and help improve food security. For crop producers, increased output starts with higher yields, underpinned by high quality seeds and improved soil fertility.

59. In the past many African farmers obtained (usually subsidised) inputs and credit from state-owned commodity marketing boards, but these have fallen out of favour due to mounting evidence of inefficiency, mismanagement and, in some cases, corruption. State-run marketing boards were largely disbanded or commercialised during the wave of liberalisation that swept through much of Africa during the 1980s and 1990s. However, Ghana's reformed cocoa industry association COCOBOD demonstrates how, given the right design and governance, such a body can hugely improve farmers' productivity, market access and incomes. Research from the IDS concludes that achieving these benefits does not necessarily require a radical transformation – suggesting that similar success could be within reach of other marketing boards with potentially only subtle reforms (Williams 2009). Given efficient management, improved governance and greater accountability, and a clear understanding of the challenges facing smaller producers in particular, parastatal marketing organisations can still play a valuable role in supporting smallholder farmers' market access.

60. Agricultural inputs and services are today typically provided by the private sector but these markets are characterised by many market failures, including high transaction cost of obtaining inputs, asymmetric information on prices and monopoly of power by some intermediaries. State action is needed to remedy these failures or replace the market where it does not function at all. The challenge is to design these interventions in a way that effectively delivers improved access to inputs and credit markets for smallholder farmers, including women farmers in particular.

61. Agro-dealer networks are often established to improve accessibility to quality inputs, but in a weak policy environment these networks can become a vehicle for patronage within government and lead to the creation of local elites and multinationals could come to dominate the domestic seeds or fertiliser sector. Regulation is needed to prevent input suppliers from forming monopolies or from having undue influence with government.

Box 3 Input subsidies in a changed environment

Having been prevalent in Africa during the 1960s and 1970s, input subsidies subsequently largely fell out of favour as they were seen to be ineffective and inefficient. The many problems with subsidies included high costs which were difficult to control; strong political pressure to expand them but weak pressure for their control, making exits very difficult; the difficulty of accurate targeting due to problems of diversion and leakage; their tendency to lead to over-use of inputs or of input-intensive rather than labour-intensive production methods; the danger of crowding out private sector investment; and the fact that they were often regressive, benefiting larger farmers who could afford subsidised inputs (Dorward et al 2009).

Nevertheless there has been resurgence in interest in agricultural input subsidies in Africa. In addition to the conventional arguments for subsidies – to promote the adoption of new technologies through allowing farmers access to purchased fertilised and improved seeds at lower costs – subsidies are now also seen as a potential way to help replenish soil fertility, provide social protection for poor recipients and help improve food security at the national and household level (Dorward et al 2009).

Box 3 Input subsidies in a changed environment (contd.)

Based on analysis of successful green revolution packages where input subsidies, of fertiliser in particular, played a major role, Dorward et al argue that their major pro-poor growth outcomes were a thickening of markets, as they helped kick-start the staple-food supply chain and subsequently the wider rural economy. On the other hand, critics of the “green revolution for Africa” approach point to the negative consequences of the huge increase in fertiliser use during Asia’s green revolution and beyond, including soil and water acidification, contamination of surface and groundwater resources, and increased emissions of potent greenhouse gases (FAO 2011b), and claim that subsidies could contribute to those negative impacts being observed in Africa as well.

Malawi’s recent input subsidy programme saw production increase from around 1t/ha in 2005 to just under 3t/ha in 2009/2010, enough for Malawi to export surplus maize to neighbouring countries. Food security increased, as did rural wages (Dorward and Chirwa 2011). But the high cost of Malawi’s programme raises questions about its sustainability. Dorward and Chirwa (2011) argue that when the indirect benefits of the subsidy scheme are taken into account, the economic returns to the programme have been “satisfactory”. The authors caution that “(a)ny application of Malawi’s subsidy experience to other countries needs to take account of special characteristics of the Malawian maize economy and of measures needed to raise such programmes’ effectiveness and efficiency and ensure their best fit with and contribution to sustainable development policies”.

The negative effects of an under-resourced and poorly executed subsidy programme is captured in a case study from ASFG member Practical Action in the Guruve district of Zimbabwe. The state marketing board initiated an input subsidy voucher which interfered with the development of efficient local input supply chains. Local agro-dealers, finding that they could not compete with subsidised seeds and lacking access to credit, withdrew from the local market. This led to serious disruptions to supply when funding for the subsidy programme dried up and farmers were forced to acquire inputs from distant markets at even higher cost than usual.

62. Input subsidies can help to overcome the issue of cost. Wiggins (2011) recommends that governments should “embrace the use of smart subsidies in certain circumstances”. But subsidy programmes are plagued by a variety of problems (see Box 3), and some question whether conventional input subsidies are the best way for African governments to support smallholder farmers. Christian Aid’s *Healthy Harvests* report (2011) argues that funding allocated to subsidies should be re-orientated towards sustainable, resource-enhancing and affordable farming approaches that work well for smallholder farmers with limited assets and incomes. This could include the promotion of indigenous and local crop varieties that do not require agro-chemicals; participatory seed breeding; organic methods of soil fertilisation; polycultures; mixed livestock-arable-aquaculture systems; soil/water conservation measures; cheap, labour-saving tools; and natural pest-control techniques. Fertiliser subsidies can be useful as a temporary measure if they are accompanied by an exit strategy tied to a rolling-out of such sustainable intensification methods.

a. Seeds

Possible policy indicator questions: seeds

- Do national seed laws recognise and protect farmers' rights and access to seeds of their own choosing, including both modern and local varieties?
- Are the rights of farmers to freely breed, conserve and exchange traditional seed varieties enshrined in law?
- Are affordable seeds of good quality, adapted to the changing climate, available for purchase?
- Does government support the design of seed programmes and policies that promote and/or strengthen entrepreneurship in both formal and informal seed systems, including through support for seed banks?

63. African farm yields are among the lowest in the world, and one of the reasons for this is the fact that African farmers make much less use of improved seed varieties (Livingston et al 2011). Following the demise or commercialisation of most state-run marketing boards referred to above, high quality seeds are often not readily available and are expensive, placing them out of reach of many smaller producers.

64. Efforts to support smallholder farmers in improving their output is currently heavily skewed towards promoting the increased use of biotechnology, including genetically modified (GM) seeds. The urgent need to increase global food production to meet food security demands and to adapt to a changing climate leads many to argue that these challenges will not be adequately addressed without making use of the full range of available technologies, including GM seeds (Conway 2012). However, to date only one country in sub-Saharan Africa – South Africa – is growing GM crops on a commercial basis, although others like Kenya and Uganda have GM products in the pipeline (for pest and disease resistant seeds), and regional organisations like COMESA are busy formulating GM frameworks to facilitate entry and regulation of GM.

65. Whilst GM seeds are not yet widely used in Africa, there is much debate about whether the GM route is appropriate for African farmers (see, for example, Practical Action 2008, Christian Aid 2011). Supporters of more organic approaches point out that local seeds systems are socially, financially and environmentally more sustainable than international seed systems and that it would be more cost-effective and feasible to focus on strengthening these. Farmers rely overwhelmingly on farmer-saved or informally-sourced seeds, with only 5-10% of all seeds acquired in the formal market (both public and private) (Minot et al 2007, cited in Van Mele et al 2011). Local seeds can be bred and adapted, are pest and disease resistant, are familiar to farmers, are easy to store and are amenable to traditional methods of processing. Farmers would benefit from investment in training and extension to re-build skills around seed breeding and adaptation, particularly adapting seeds to allow for the effects of climate change, such as focused breeding for greater drought-resistance (the case study in Box 4 deals with the question of seed breeding skills), and in seed system

infrastructure such as seed banks. Local community seed banks can improve access and facilitate seed sharing and exchange, as well as indigenous knowledge sharing by local smallholder farmers.

66. Moreover, GM seeds are associated with a number of serious challenges for African smallholders. Soils in many parts of Africa are too fragile or degraded to allow these seeds to perform as intended (Sanchez 2002). Bio-safety and contamination are key issues—especially if farmers are trying to grow for organic markets, or rely on saved and exchanged seed. The seeds themselves are expensive and may only be available from a limited number of licenced dealers, which creates significant access issues especially for remote farmers. There are also global concerns around human health and environmental impacts of GM food crops (Conway 2012). Some countries have laws prohibiting GM imports altogether, meaning farmers hoping to export to those countries could be disadvantaged.

67. Problems are not confined to GM seeds only. The introduction of modern seed varieties that are cultivated as monocultures has led to a loss in agricultural biodiversity. In some countries, new seed laws are being introduced which enforce compulsory registration of seeds, thus making it impossible for small farmers to grow their own diversity or local markets, and forcing them into dependency on giant seed corporations. Lack of investment in national breeding systems, skills or knowledge threatens to exacerbate this dependency.

68. There are also issues around intellectual rights to ‘new improved’ seeds. Most multinational seed breeders want governments to adopt laws similar to the 1991 Act of the International Convention for the Protection of New Varieties of Plants (‘UPOVS 1991’), which would grant them breeder rights meaning that farmers depending on the informal seed market can no longer save, purchase and multiply seed that they originally bought from these companies. To address this problem national seed laws should give maximum scope to farmers to save, re-use, exchange and sell locally seeds of their choosing – including both local varieties and modern varieties developed by seed companies (Christian Aid 2011).

69. The UN’s 2004 *International Treaty in Plant Genetic Resources for Food and Agriculture* (ITPGR) explicitly protects farmers’ indigenous knowledge, demands rewards for their contribution to maintaining crop diversity, ensures their participation in decision-making about genetic resources, and guarantees their rights to save, use, exchange and sell traditional seeds. These principles are also captured in the IAASTD report, the FAO Guidelines and the EU’s food security policy framework. Governments should enshrine these rights in national legislation.

Box 4 Supporting community-based seed enterprises in Zambia

The Zambian seed sector is characterised by intense promotion of hybrid maize seed that is distributed at subsidised rates to small-scale farmers within the Fertilizer Input Support Programme (FISP) of the Ministry of Agriculture and Livestock. Maize cultivation is further promoted by the Food Reserve Agency (FRA), which buys maize at a guaranteed price set by the government. The FISP and FRA are designed to address food security concerns; together they account for almost half of the government’s agricultural budget.

Box 4 Supporting community-based seed enterprises in Zambia (contd.)

The focus on maize reduces farmers' interest in cultivating other crops and local varieties. This crop replacement results in dependency on one crop, reduces biodiversity and creates vulnerability in times of drought. There is therefore a great need for promoting diversification through greater availability of quality seeds for other food crops.

Both national and multinational seed companies are active in the hybrid maize seed sector, but for all other important food crops, informal seed systems, comprising both farm-saved and community-based seed systems, are dominant. These crops tend to have less commercial value and therefore attract less interest from national and multinational seed companies.

Zambian law provides a regulatory framework for the set-up and registration of seed businesses through the Plant Variety and Seeds Act, but inadequate investment in the public institutions responsible for research and development of non-commercial crops has resulted in a shortage of seeds for such businesses to multiply and sell. The Zambia Agricultural Research Institute (ZARI) is still biased towards conducting improvement activities for commercial value crops, such as hybrid maize, wheat and soya bean, which has restricted investment in other food crops.

Evidence gathered by ASFG member Self Help Africa through its Seed Entrepreneurship for Economic Development and Food Security (SEEDFS) programme shows that it is possible for local seed businesses to produce certified seed themselves to relieve current bottlenecks. With the right support, local businesses with low overheads can produce a diverse range of good quality seed at affordable prices to resource-poor farmers in remote areas with limited purchasing power.

In Zambia's Northern Province, Self Help Africa initiated a training programme involving specialist breeders from the local ZARI research station which trained both male and female farmers as community-based seed entrepreneurs. Over the course of two growing seasons, common bean (*Phaseolus vulgaris*) farmers produced and marketed their own certified 1st generation Class 1 seed, contributing to a 60% increase in the availability of improved certified beans to smallholders in the province. Findings from three growing seasons 2009-2012 indicate that farmers using improved legume seed generally doubled their yields, leading to raised incomes and improved household food security.

Government can help ease bottlenecks in seed production at public institution level and encourage the creation of more community-based seed businesses through supporting farmer training in basic breeding techniques, and improving the transfer of research to local level. Facilitating greater availability of improved varieties of seed provides an effective way of helping farmers realise increased yields, higher incomes and greater food security.

b. Fertiliser

Possible policy indicator questions: Fertiliser

- Are incentives available to encourage wider distribution of affordable fertilisers and quality advisory services on their application?
- Does the government allocate sufficient funding for research and extension services specifically aimed at supporting integrated soil fertility management?
- Are smart subsidies or other incentives available to support farmers during the adoption of agro-ecological techniques to enhance soil nutrition (including, where appropriate, adoption of agro-forestry practices)?
- Are incentives available to private enterprises and other entities providing integrated soil management services to smallholder farmers?

70. Low soil fertility is another underlying cause for the low yields recorded by smallholders in much of sub-Saharan Africa. While low soil fertility is the result of many factors, one of the major contributors is the failure to adequately replenish soil nutrients, through manure or fertiliser, during decades of intensive farming (World Bank 2007). The result has been very high depletion rates: research quoted by Sanchez (2002) indicates that farmers across 37 countries in sub-Saharan Africa lost an average 22 kg of nitrogen, 2.5 kg of phosphorus and 15 kg of potassium per hectare (ha) annually from their soils over a period of 30 years. This reflects “a breakdown in traditional practices and the low priority given by governments to the rural sector over this time” (Sanchez 2002). Depleted soils have contributed to average yields of grain crops in sub-Saharan Africa stagnating at around 1 t/ha since the 1960s, compared to 2.5 t/ha in South Asia and 4.5 t/ha in East Asia (Gilbert 2012).

71. There is little question about the urgent need for many African smallholder farmers to replenish their soils in order to increase their productivity, but there are widely divergent views on the best way to address this challenge (for a concise discussion of main points of the debate along with key sources, see Scoones 2008). On one hand there is a strong push from African governments as well as the donor community - supported by powerful agri-business interests - dramatically to increase the use of inorganic fertiliser, which is seen as the quickest and most practical way to boost productivity (see, for example, World Bank 2007; increasing the availability and use of chemical fertilisers is a key objective of initiatives such as AGRA, the *New Alliance* and CAADP). Inorganic fertiliser is one of a handful of agricultural technologies that have huge potential for raising the productivity and incomes of poor smallholders. Over the past 40 years, mineral fertilisers accounted for an estimated 40% of the increase in global food production (FAO 2011b).

72. But chemical fertiliser use in Africa is very low: on average, sub-Saharan African farmers used only about 8 kg of fertiliser per hectare of arable land in 2002 compared with 78 kg/ha in Latin America and 101 kg/ha in South Asia (World Bank 2007). Fertiliser use by most African smallholder farmers has been severely limited by lack of access to savings or credit

for purchasing the input. Global fertiliser supplies are tight and individual African countries are very small players in global fertiliser markets where suppliers prefer to sell large bulk orders, putting pressure on prices. In addition, because of transport expenses, farmers in inland Africa pay more than twice as much for fertiliser as farmers in Europe; and supply is often unreliable because of poor distribution systems (Gilbert 2012).

73. On the other hand, many argue that massively scaling up chemical fertiliser use is not the best solution for African smallholders and believe that the answer lies in more organic, environmentally sustainable and affordable approaches (see, for example, OHCHR 2010, Christian Aid 2011). There are serious concerns about the environmental impacts of long-term chemical fertiliser use. It has a highly disruptive effect on natural ecosystems; along with pesticides, fertiliser use poses a major threat to biodiversity (Conway 2012). Fertilisers are a significant contributor to climate change due to emissions associated with its highly fossil fuel-dependent production as well as its application, made worse by incorrect dosing and large-scale wastage. As pointed out above, fertiliser prices are high and volatile due to tight supplies. Moreover, the fragile and damaged soils typical of much of Africa's rainfed lands cannot sustain high levels of fertiliser use (Sanchez 2002). Relying only on chemical fertiliser to boost crop yields in Africa therefore appears unlikely to deliver the desired outcome and could have many other negative consequences.

74. The FAO and others are actively promoting various organic methods of soil fertilisation and repair, including conservation farming with cover crops and low or zero tilling, agroforestry, nitrogen-fixing legumes, composting and crop rotation (FAO 2011b). Evidence is growing that these agroecological techniques can successfully improve soil fertility and raise yields in a range of circumstances while at the same time protecting the soil, water, and climate. Systems like sustainable root intensification (SRI), which carefully regulate the amount of water that crops need and the age at which seedlings are planted out, have shown that organic crop yields can be doubled with no synthetic chemicals. The widest study ever conducted on agroecological approaches covered 286 projects in 57 developing countries, representing a total surface of 37 million hectares, and found an average crop yield gain of 79% (Pretty 2006).

75. Based on research into organic approaches to boosting soil fertility conducted over 10 years by the International Center for Research in Agroforestry, Sanchez (2002) states that 'tens of thousands of farm families in Kenya, Uganda, Tanzania, Malawi, Zambia, Zimbabwe and Mozambique use various combinations of fallows, phosphorous, and biomass transfers with good and consistent results. The challenge is to accelerate the adoption rate... to tens of millions of farm families.' Governments should redirect some of the funding currently earmarked for promoting or subsidising smallholder access to chemical fertiliser to more research and training on these agroecological methods. Sustainable approaches should form a central part of national agricultural strategies. Support to farmers to help them make transition to sustainable agriculture would be especially useful in early years when yields sometimes dip as new approaches are being adopted and in cases where transition costs make it difficult for farmers to move quickly from chemical-dependent to sustainable approaches (Christian Aid 2011).

76. In its 2011 *Save and Grow* report the FAO argues for "sustainable intensification of smallholder crop production", and identifies soil health as one of the critical components of this approach. However, it does not suggest that farmers should rely on organic farming

methods exclusively: “(t)he best yields are achieved when nutrients come from a mix of mineral fertilisers and natural sources, such as manure and nitrogen-fixing crops and trees. Judicious use of mineral fertilisers saves money and ensures that nutrients reach the plant and do not pollute air, soil and waterways. Policies to promote soil health should encourage conservation agriculture and mixed crop-livestock and agroforestry systems that enhance soil fertility. They should remove incentives that encourage mechanical tillage and the wasteful use of fertilizers, and transfer to farmers precision approaches such as urea deep placement and site-specific nutrient management”(FAO 2011b). And Conway (2012) argues for both organic and biotech solutions, in order to support what he terms the “doubly green revolution”: one that repeats the success of the first, in many diverse localities, yet is sustainable, equitable and environmentally friendly.

77. An integrated soil fertility management (ISFM) approach recognises the need for both organic and chemical inputs to improve soil health, and acknowledges that no one size will fit all: the optimal combination of inputs will depend of a range of local factors. Government should support farmers’ choice on which inputs or combination of inputs to use, including through implementing policies to improve the availability, quality and affordability of chemical fertilisers and proving training into their correct use and dosage.

c. Credit

Possible policy indicator questions: access to credit

- Does the state provide or support institutions which provide affordable and flexible financial products that are well-suited to the needs of smallholder farmers, such as agricultural development banks?
- Are incentives in place to encourage innovation from the private sector in meeting the credit and other financial needs of smallholder farmers? (for example to promote buyer contracts as secure collateral to access credit/insurance)
- Does the state provide or promote financial literacy training among smallholders, and capacity building/skills development in the financial sector to facilitate better service provision to smallholder farmers?
- Does the government support or participate in any loan guarantee funds that target smallholder farmers?

78. The majority of African smallholder farmers have few assets, which makes it hard for them to access credit as they have nothing to offer up as collateral; when they do own an asset it is often disproportionately valuable compared to the amount they need to borrow, for example to purchase new season seeds. Financial institutions are reluctant to lend to the agricultural sector because of the real and perceived high risk and high transaction costs associated with a hugely dispersed client base with few assets and great exposure to unpredictable weather. Weak land rights exacerbate the problem. Women farmers are particularly disadvantaged by their lack of provable/recognised and secure rights. Other

financial services such as insurance or savings tools also tend not to be available to poor farmers who typically do not own bank accounts or the means to acquire one, and who may lack financial literacy. This reduces farmers' capacity to invest in productivity-enhancing assets and increases their exposure to the vagaries of the spot market and the weather, so contributing to greater vulnerability.

79. Where credit is available, it is often unaffordable due to very high interest rates, and repayment terms can be incompatible with farmers' needs – many farm investments (such as planting nitrogen-fixing trees) take several years to start producing a return, but few loan products would allow repayment over such an extended period. Farmers are therefore forced to rely on small savings, where they exist, or informal sources of credit with the associated risk of exploitation; the only other option is to operate on a cash-only basis which drastically reduces their entrepreneurial capacity.

80. Agriculture receives only a small share of total credit - in Africa, only about 10% of the total portfolio of commercial banks goes to agriculture, including agro-industries (World Bank 2009 in GIZ et al 2012). A recent report by Dalberg estimated the global demand for smallholder finance at US\$450 billion, most of which is currently still unmet (Dalberg 2012). Loans are rarely extended to smallholders, and especially to women farmers: the share of female smallholders who can access credit is 5 – 10 percentage points lower than for men (World Bank 2007 in GIZ et al 2012). In addition, financial infrastructure serving the agricultural market segment is generally weak (this includes credit bureaus, payment systems and collateral registries). Agriculture finance is often overregulated and inflexible because legal and regulatory frameworks do not take adequate consideration of the specificity of the sector (GIZ et al 2012).

81. Governments can begin to address this problem by simplifying regulation dealing with finance provision for smallholder farmers, whose needs should be identified through consultation that specifically includes women farmers. The state can also create or support institutions which provide affordable and flexible financial products that are well-suited to the needs of smallholder farmers. Many state-owned agricultural development banks were loss-making with poor records on loan repayment and reaching their target clients; they were also subject to political manipulation and poor governance. As a result, many were closed, particularly in Africa. However, research by GTZ (now GIZ) suggests that, given the right reforms, agricultural development banks can play a valuable role in promoting access to finance for smallholder farmers. The authors cite the example of Uganda's (now fully commercial) Centenary Rural Development Bank as "an African flagship of reform" that combines sustainability with outreach to the rural poor and demonstrates the feasibility of agricultural lending (GTZ 2005).

82. One area that has witnessed a lot of innovation in recent years is private sector-driven agricultural value chain finance. Whilst not a new phenomenon in itself, the range of value chain finance models is rapidly expanding (for an overview and examples of success stories, see Miller and Jones 2010; Vermeulen and Cotula 2010). Examples include various forms of contract farming (discussed in more detail in the next section) and outgrower schemes where the agro-producer serves as the front for financial institutions that provide smallholders with loans. Miller and Jones (2010) point out that finance is only one of a range of services that are required if the goal is the integration of smallholder farmers. Other elements of the value chain 'ecosystem' include: business and technical training, access to

inputs, group organising, building negotiation skills, dispute resolution and collective bargaining skills, market information and access, and infrastructure support from warehouses to transportation and communication.

83. Governments should offer incentives to encourage the development of more inclusive agricultural value chains that specifically include smallholders and facilitate their access to finance; donors can support this process including through offering co-investments or risk-sharing. Governments and donor agencies do not need to be fully versed in all value chain finance instruments, but it is important for them to understand the benefits and risks of instruments on the various participants within the value chain, and to ensure that there is adequate regulation in place to permit and govern their application (Rural Finance 2011). There is also a need to protect the interests of smallholders in value chain contract negotiations, in recognition of their weak bargaining position. One way of doing this would be to support the creation of representative and properly-governed farmer groups who can negotiate contract terms on their behalf, and to facilitate capacity-building in such organisations. (Cooperatives and farmer groups are dealt with in Pillar 5).

84. Many of these value chains are highly commercialised, and the scope for participation by smaller producers tends to be limited unless they are already organised into efficient groups. The Dalberg report suggests that agricultural value chains are unlikely to reach more than 10% of the smallholder population; for the remainder of farmers, financing will have to be provided through alternate points of aggregation in the value chain (such as warehouses or input suppliers). For farmers that are in very loose and dispersed value chains, the report suggests a need for piloting direct to farmer financing models, such as agriculture microfinance (Dalberg 2012). Governments can put in place incentives to encourage private sector providers of financial services to develop products that are well suited to the needs of this group.

85. Governments could also cooperate with donors and other funders in the creation of loan guarantee funds that target smallholders specifically. In one such example, the Alliance for a Green Revolution in Africa's (AGRA) Innovative Financing Initiative has unlocked US\$160 million in affordable financing for smallholder-based agriculture since 2009. AGRA works with national partners to establish loan guarantee funds with funding from banks. With a 'smart subsidies' approach, guarantees that are put up by AGRA and their partners can leverage up to ten times their amount in low-interest loans. Smallholders benefit from lower interest rates for loans backed by these guarantee funds. In Kenya, AGRA recently announced the scaling-up of an initiative where an original risk-sharing facility of US\$5 million, provided to Equity Bank in partnership with IFAD and the Government of Kenya, helped leverage a total of US\$50 million of financing which has already benefitted over 49,000 smallholder farmers in the form of direct lending for farm inputs (AGRA 2012).

86. Another effective way to channel credit to smallholder farmers is the warehouse receipt system, which allows the use of stocks as collateral for credit. Warehouse Receipt System laws in countries like Uganda and Tanzania allow the private sector to own and manage warehouses under a legal framework. The arrangement solves the problems of the lack of local and district storage facilities whilst addressing the difficulty of obtaining credit. There is wide agreement on the advantages of the warehouse receipt system and it is often recommended to policymakers (for example, the World Bank's proposes including this in their proposed *Doing Business in Agriculture* indicators); but special measures are needed if

smaller producers are to benefit from these systems. Acting alone, most small producers would not be in a position to meet the minimum volume requirements typical of most warehouse receipt systems (e.g. 10 tonnes of grain); but cooperatives or other farmer groupings can be well-placed to take advantage of such schemes. Hence support for farmers groups would be a necessary component of policies to promote the use of warehouse receipts by smallholder farmers.

3. Markets

Possible policy indicator questions: Markets

- Does government direct its support for improving smallholder farmers' market access towards domestic markets, rather than to focus primarily on export markets? For example:
 - Are any measures in place to boost local demand and strengthen the market for local smallholders' output?
 - Are any preferential public procurement policies in places which prioritise smallholder producers?
- Are buyers encouraged and incentivised to source from smallholder farmers? Is explicit provision made in such incentive packages for targeting women farmers and other vulnerable groups?
- Does government provide any specific support to smallholder farmers to strengthen their bargaining position in dealing with agribusiness and other corporates, for example through public extension services that include modules on contracts and rights, or facilitating the development of and access to private sector providers of similar services?
- Are smallholders supported in group certification and adherence to international market standards?
- Does the government use all the legal and negotiating tools available (ie anti-dumping measures, import tariffs, trade negotiations) to reduce the impact of international trade rules and agricultural policies that reduce returns to smallholder farmers through distorting local prices (such as developed country export subsidies; import tariffs on processed foods; production incentives that lead to over-supply/dumping)?

87. In considering ways to support smallholder farmers, the focus has tended to be on the supply side and ways to increase production. But being able to sell their output and ensuring adequate returns is often an even more critical issue, and as serious a challenge, for Africa's smallholders. Farmers need to have an entrepreneurial mindset, thinking from the outset about what they will sell, to whom, and when; but they also need more support from

both the public and private sector to access those buyers and optimise their returns. This section considers some of the demand-side factors impacting on smallholders.

88. Markets available to smallholder farmers have changed rapidly and dramatically during the past two decades; this process is ongoing (IFAD 2010).⁵ At the regional and national level, urban demand for agricultural products is increasing strongly as populations and incomes grow, particularly for high-value products. The rising prominence of supermarkets in Africa and increasing interest from both national and multinational corporations in inclusive supply chains present smallholder farmers with new marketing opportunities, but also fresh challenges. Those who manage to become part of these new agricultural supply chains are faced with increasingly stringent quality and safety standards (this problem is even bigger for producers of niche, export-oriented high value or specialised agricultural products); while their weak bargaining position could leave them exposed to exploitation through unfair prices or non-fulfilment of contractual agreements, with little recourse to legal justice.

89. Although there are many cases where export markets have delivered impressive returns to smallholder farmers (such as for coffee farmers in Rwanda – see Boudreaux in World Bank 2010), the growing consensus is that, especially for smaller producers, the focus should be on producing for local and regional markets rather than export markets.⁶ Export markets are expensive to enter, with certification being particularly costly and time-consuming, and more risky due to greater competition. Several studies show that only limited numbers of predominantly better-resourced smallholder farmers benefit from supplying export markets while the majority of smaller farmers are excluded from these markets (see for example Jaffee 2011).

90. For those smallholders that do have scope to participate in export markets, government can facilitate their access to those markets by supporting group certification and adherence to international market standards (Vermeulen and Cotula 2010). Growing into export and other high value niche markets, such as organic produce, also requires a supportive policy environment. The case study from Gurusu in Box 5 illustrates how a weak policy environment can prevent farmers from taking advantage of opportunities in these fast-growing markets.

91. Significantly, domestic and regional markets dwarf export markets both in terms of their size and their projected growth: while African agricultural exports are forecast to increase by 80% to US\$20 billion by 2030 from US\$11 billion in 2000, Africa's urban food market is already much bigger than that and is expected to triple over the same period, growing from US\$50 billion to US\$150 billion (Wiggins 2012).

92. There is also strong evidence that producing staple crops has a greater impact on growth and poverty reduction than export crops. IFPRI's 2012 study of 10 African countries' agriculture strategies found that, although export crops typically have higher value and growth potential than food crops, in several countries food staples are more effective at generating economy-wide growth and reducing national poverty. Tanzanian livestock, Mozambican roots, and all staple foods in Nigeria, Uganda, and Zambia were found to be more effective at generating economic growth than those countries' export crops (Diao et al 2012). Their findings also suggest that growth driven by staple crops generally reduces poverty to a greater extent than growth driven by export crops: in Rwanda, growth driven by

maize or pulses was found to be 30-60 % more effective at reducing poverty than export-driven growth. The authors do point out that the difference in poverty reduction is smaller when export crops are grown by small farmers. Among the reasons cited for export-led agriculture's lower contribution to growth and poverty reduction is the fact that it involves the export of raw materials, which do not generate income from processing agricultural products; hence promoting export agriculture may make it difficult for a country to develop labour-intensive manufacturing and services. Incorporating this kind of domestic downstream processing is crucial if export crops are to provide a meaningful platform for rural and national development.

93. There are many advantages to smaller farmers in producing for local markets, including the fact that poor infrastructure, which has such a big impact on their transaction costs, is less of a barrier. However, it is important to manage production so as not to overwhelm local demand. Access to warehousing and storage facilities, and to credit to tide farmers over so that they need not sell their output immediately, can help farmers optimise the timing of their sales (CAFOD 2011).

94. It is also worth noting that during the recent economic crises, those countries with strong domestic markets (such as India) fared far better than those with weaker domestic markets. Small businesses are the predominant businesses that operate in local markets – buying, selling and investing locally, thus helping shield the entire local economy from the effects of an international shock.

95. Governments can offer a range of incentives to boost domestic demand and to encourage procurement from smallholders. Vorley et al (2009) cite the Social Fuel Seal in Brazil which provides the downstream biodiesel industry with incentives to source their feedstock from smallholders and family farmers, in the process helping improve the equity of the “biofuels revolution”. Other options include requiring supermarkets to provide adequate space in their shelves for small-scale farmers' products (Vorley et al 2009).

96. Preferential public procurement policies could create further demand for smallholder output. For example, Brazil's 'Family Agriculture Food Procurement Programme' which forms part of the *Fome Zero* ('Zero Hunger') campaign launched in 2003 by President Lula, aims to ensure a stable market price for products from small-scale farmers, including through buying local food products for government feeding programmes or for local food banks. Despite initial reservations the *Fome Zero* programme has been widely hailed as a success – World Bank estimates suggest it helped raise 20 million people out of poverty between 2003 and 2009 – and some regard it as a model for achieving food security globally (Oxfam 2010a).

97. Public procurement from smallholders could also be encouraged through Home-Grown School Feeding (HGSF) Programmes. A study by the WFP finds that such programmes have delivered proven benefits to farmers in middle- and higher income countries, where institutional capacity is strong and domestic markets are more developed - in China, the National School Milk programme increased the incomes of Chinese farmers by US\$400 per cow – but there is very little information of how these programmes would fare in low-income countries with vulnerability to food insecurity, constraints to food production, low institutional capacity and thin or volatile food markets (WFP 2009). Ghana's HGSF was set up

in 2005 and while the programme delivered strong early benefits in terms of school attendance and food security, the benefits to farmers were initially less evident (WFP 2007).

98. Purchases from humanitarian agencies provide another promising new market for smallholders. The World Food Programme (WFP) is the world's largest humanitarian agency and a major staple food buyer. More than 75% of the US\$1.1 billion worth of food bought by WFP in 2012 was sourced in developing countries. The Purchase for Progress (P4P) programme aims to optimise the developmental gain from WFP's procurement footprint by buying increasingly in a "smallholder-friendly" way. Whereas WFP usually procures food through large competitive tenders, P4P is allowing it to test new procurement methods that would be more beneficial to smallholders, including buying directly from farmers' organisations through direct and forward contracts or modified, smallholder-friendly tenders⁷. Progress has been impressive: by January 2013, 814 farmers' organisations representing more than one million farmers (of which 500,000 are in Ethiopia) have been identified to participate in P4P, with contracts already agreed with 360 farmers' organisations. However P4P contracts are made with producer organisations, which means that the most marginalised farmers who do not belong to farmers' groups will not be reached; and despite an ambitious target of 50% female participation the P4P progress reports acknowledge that it has been difficult to reach that target in several countries and "(e)nsuring that women not only participate in P4P, but benefit economically, is challenging especially where women are not the head of households."

99. A growing number of multinational commodity buyers are establishing "inclusive supply chains" which specifically target smallholder farmers. Linking with companies can deliver many benefits to smallholder farmers beyond providing a guaranteed buyer for some or all of their output, including increasing their access to inputs, technical advice and training and, in some cases, financing; companies may also invest in physical infrastructure which have benefits beyond the smallholders directly engaged in their value chain. Oxfam (2010b) cites examples of successful inclusive supply chains implemented by Unilever, Cadbury, Costco, Coca-Cola, Marks & Spencer, SABMiller, Sodexo, Sysco, Tate & Lyle and The Body Shop. Governments can take steps to encourage and incentivise companies to source from smallholder farmers. Explicit provision should be made in such incentive packages for targeting of women farmers and other vulnerable groups.

100. There is a wide range of collaborative arrangements between large-scale investors and local small-scale farmers, including different forms of contract farming, joint ventures, tenant farming and sharecropping, management contracts and new supply chain relationships. Some models involve large-scale farming but with close connections to local small producers; others bypass commercial producers and bring smallholders directly into the value chain (Vermeulen and Cotula 2010).

101. Inclusive agricultural value chains are complex and ensuring that they deliver benefits to both farmers and businesses is a challenge. Vermeulen and Cotula (2010) highlight the problem of information asymmetries, and of unequal bargaining power, particularly on land rights, which increases the risk of smallholders finding themselves in situations where their returns from integration into the value chain are not optimised. Based on their extensive study of various business models that include smallholders in the supply chain, the authors suggest that the extent to which farmers share in the value generated by the chain depends on four factors: ownership (for example of land or processing facilities), voice (the ability to

influence key decisions), risk (including production and market risk) and reward (the sharing of economic cost and benefits). Their review concludes that no one model is perfect: what works best for smallholders while still being attractive to investors is very much context-specific, and is contingent on tenure, policy, culture, history as well as on biophysical and demographic considerations. It is also worth bearing mind, as mentioned in the section on access to credit above, that only a small group of farmer are likely to be in a position to participate in agricultural value chains.

102. A lot of emphasis is being placed on the opportunities for smallholder farmers presented by contract farming. Whilst examples do exist where contract farming has resulted in increased net revenues for farmers, Conway (2012) finds that unsuccessful schemes outnumber the successful ones. Crucially, evidence suggests that contract farming could have an exclusionary rather than inclusive impact as better-resourced farmers tend to capture the contracts, with poorer farmers working as labourers on the contracted farm, and those farmers and communities who do not participate in the contracts becoming further marginalised (Conway 2012). Equally worryingly, Vermeulen and Cotula (2010) find that contract farming tends to shift land access from women to men, as men are more likely to sign contracts for cash crops with agribusiness.

103. It may be possible to avoid some of these problems by contracting with producer associations rather than individual farmers. Conway (2012) cites the example of Nando's contracting with the Nyabumba United Farmers group in Uganda to supply it with potatoes, which has enabled the group's members (60% of whom are women) to move from subsistence to commercial farming. Governments can provide support by facilitating the formation and efficient running of inclusive farmer groups – this is discussed in more detail in Pillar 5.

104. Government can also take steps to protect smallholders in their dealings with corporates, in recognition of their weak bargaining power. Vorley et al (2009) provide an example from Australia, where a supplier ombudsman with an independent regulatory role to oversee the way in which powerful buyers such as supermarkets engage with their suppliers, has been established. Support could take the form of funding for extension services or facilitation private sector providers of similar services which could provide training on contracts, terms, negotiating skills, rights and legal recourse.

105. International trade policies and practices can damage African smallholder farmers' scope for accessing markets through distorting local prices for agricultural produce and limiting local producers' capacity to compete. These include developed country export subsidies; tariffs on processed foods; and production incentives that lead to over-supply. Farmers' interests would be well served by efficient implementation and monitoring of international measures aimed at addressing these issues, including trade defence measures such as anti-dumping measures. Governments should continue to engage in advocacy to reduce the scope for harming smallholders through such policies.

Box 5. Lack of policy support means Zimbabwe's organic farmers lose out

ASFG member GardenAfrica has been supporting smallholder farmers in Zimbabwe's Mashonaland East province in producing for the organic market. Feedback from supermarket buyers indicates strong demand for organic products, but several obstacles are restricting farmers' ability to scale up their production to take full advantage of this potential high-value domestic market and constraining their capacity to reach for export markets in the future.

Zimbabwe currently lacks an agriculture policy, and its CAADP framework makes no mention of organic agriculture, which is affecting support for more diverse service delivery and input supply to farmers interested in entering this market. With no official policy to promote organic farming methods, NGOs are stepping in to support farmers with more diverse approaches to production. This is having a negative effect on extension officers who are already demotivated due to a lack of training, mobility and support. And tertiary education has been slow to develop modules in sustainable agriculture for agriculture colleges, resulting in a lack of appropriate training in conservation and organic farming for future extension officers.

In addition, the Department of Trade currently makes no distinction between organic and conventional trade. Hence there is no official trade data to support anecdotal evidence of strong demand for organic produce. Until the Department recognises and enforces a formal division, supermarkets have no incentive to ensure that the produce on their 'organic' shelves is actually from certified organic sources or to properly track their sales. Furthermore, until organic produce is formally recognised as such, any potential premium for fully certified produce is unlikely.

All of these policies (or lack of them) conspire to constrain the organic value chain and its actors. Many other countries are experiencing strong growth in their organic sectors for export, but the lack of policy recognition of the existence of a domestic organic market in Zimbabwe is affecting the level of support for organic value chain actors, and limiting the sector's scope to gain in experience and strength and access lucrative export markets.

Farmers are also disadvantaged by inflexible international policies. Current IFOAM (International Federation of Organic Agriculture Movements) regulations dictate that land must be 'in-conversion' for 2 years before organic certification is possible – irrespective of the level of synthetic inputs used. Soil analysis of 32 sites on communal lands in GardenAfrica's project region shows no signs of carbamate or organo-phosphates, which is not unexpected given that communal smallholders have not had access to, or could ill afford to use, fertilisers, pesticides or herbicides. Although the land is chemical-free, farmers still need to wait 2 years before they are eligible for IFOAM certification. These regulations were designed for Europe and North America where there is a history of high usage, and are poorly suited to African smallholder farming conditions. The high cost associated with such a long conversion period acts as a disincentive to farmers considering converting to agro-ecological farming in order to capitalise on growing organic demand.

4. Research and extension services

Possible policy indicator questions: Research and extension services

- What percentage of overall agricultural investment is directed towards research and development?
- Are incentives in place to attract and facilitate private sector investment in research to help bridge any funding gap? Are clear guidelines in place to ensure such research takes account of the needs of smallholder farmers, not just large-scale commercial producers?
- What support and incentives are in place to encourage research into sustainable agriculture including agro-ecological production, fertilisation and pest management approaches and participatory breeding of climate-adapted seeds?
- What platforms are available for smallholder farmers to provide input into research agendas?
- What is the extension coverage? Are incentives in place to encourage alternative models of extension service delivery where public provision is inadequate?
- What measures are taken to ensure extension curriculums are up to date and meet the needs of smallholders – for example, that they incorporate modules on new innovations in climate sensitive agricultural practices, access to markets and gender equity?

a. Research

102. Agricultural research is an essential factor underpinning agricultural development and growth, and evidence confirms that local research and extension was present in almost all areas where the green revolution was successful in transforming agriculture and reducing poverty (Dorward et al 2004 in Conway 2012).

103. Juma (2013) argues strongly for scaling up investment in agricultural research to facilitate the kind of technological innovation that is critical for dealing with the challenges to Africa's agricultural growth presented by climate change. According to Juma "(s)ustainable agriculture needs to be recognized as a knowledge-intensive productive sector that is mainly carried out in the informal private economy".

104. It pays to invest in agricultural research. Based on the Asian experience Wiggins suggests that such investment could deliver returns of up to 1:20 (in ThisisAfrica 2012). Across many studies comparing returns to investment, based on various methodologies, research and development investments often have the single largest effect on sectoral growth - even more so when considering long-run effects.

105. Yet public spending on agricultural research in Africa comprises only 0.7% of agricultural GDP on average, compared to an average spend in developing countries of 2.5% of agricultural GDP (UNECA 2009; worldwide the figure is around 1%). Conway (2012) reviews evidence from IFPRI which finds that a doubling of investment in public agricultural research in sub-Saharan Africa could increase growth in agricultural output from 0.5% to 1.1% and reduce poverty by 282 million people.

106. Countries in sub-Saharan Africa still rely overwhelmingly on public sources for funding agricultural research (UNECA 2009). The UNECA report also notes the substantial decline in donor funding for agricultural research during the past 3 decades, falling by more than 50% between 1980 and 2006, while World Bank funding dropped more than 70% between 1980 and 2004. Despite its growing presence in the agricultural research space in industrialised countries (Von Braun and Diaz-Bonilla 2008), the private sector has to date not stepped in to fill this funding gap in Africa, with the UNECA research finding that only 2% of African agricultural research is currently funded by the private sector.

107. Inadequate investment is not the only problem facing the agricultural research sector. Most agricultural research tends to focus on single crops and is not well-tailored to the complex needs of the average smallholder farmer. Ensuring that research findings are shared with smallholders has also proved to be a significant challenge. Extension services frequently do not act as an effective link between researchers and farmers (ASFG 2010). There is a growing interest in 'innovation systems' which run in parallel to market systems, and look at all the actors and issues needed to make specific systems resilient and adaptive, including the levers and incentives to encourage investments in relevant research.

108. Smallholders tend not to have any say in the design of research programmes, although both the CFS *Voluntary Guidelines* and the 2008 *International Assessment of Agricultural Knowledge, Science and Technology for Development* (IAASTD) acknowledge the importance of recognising farmers' rights to influence agricultural research decision making.

109. Farmers operate in a dynamic environment and research needs to adapt to reflect these changes. As challenges associated with increasing commercialisation of agriculture, climate change, resource depletion and growing global demand for food mount, there is an urgent need for more research on sustainable intensification and agroecological farming methods. More research is also needed to improve indigenous crops in support of efforts to promote greater crop diversification, which is a crucial strategy for increasing resilience against climate change and price and weather shocks. Funds for this research will have to come from the public sector: given that these methods tend not to involve large-scale application of inputs typically provided by the private sector, such as hybrid seeds or chemical fertilisers and pesticides, it is unlikely that the private sector would invest in researching these approaches. Governments need to direct more of their research budgets in the direction of sustainable agriculture; there is also a role for support from donors and the development community to ensure sufficient funds flow towards this area (Toulmin 2013).

110. Research, training and extension can play a powerful role in helping narrow the gender gap in agriculture. At present, it tends to contribute to women farmers' exclusion as their particular needs and challenges are not taken into account in the design and delivery of these services, with the result that they are often not well-suited to women farmers' practices. In order to develop gender-sensitive technologies, women farmers should be

involved when priorities for agricultural research and technology are being debated and decided. (IAASTD 2009).

b. Extension services

111. A strong extension system is essential for moving research from the lab to the field, not only in order to help farmers improve their productivity, but also to ensure that more research takes place with farmers in the field. But in Africa, prolonged under-investment has resulted in very low average extension coverage; and extension services provided during the last two decades are largely perceived as unsuccessful in supporting smallholder farmers in adapting to increasingly challenging conditions (Kahan 2007). According to the FAO, investment in agriculture extension services needs to increase to 3.5% of the agriculture GDP in order to achieve the necessary coverage, though at present no African government is spending even a tenth of that amount (Waruru 2011).

112. The renewed focus on agriculture has also seen fresh interest in extension, although the emphasis has shifted to pluralistic and demand-led approaches. The monopoly public services model for extension is obsolete in the competitive, market-oriented climate of today's agriculture. The new approach recognises that there are now many other actors in the system beyond the traditional public extension agencies. Programmes are moving from a *delivery* model - a top-down, prescriptive technological practice model - to an *empowerment* model focusing on capacity building. One requirement of these new approaches is the need to be more cost effective than the traditional Training & Visit (T&V) model and Farmer Field Schools, which have proved unaffordable and hence could not be sustained. Different approaches are now often found alongside each other, in a shift from a "best practice" or "one-size-fits-all" to a "best fit" approach to particular social and market conditions (IFPRI 2006).

113. Despite progress in the design of extension services to be better suited to modern needs, they remain severely underfunded and limited. Extension services need to be scaled up, better funded, and provide improved services alongside other actors. Other than those farmers who can access extension through their participation in contracts with corporates, publicly funded extension continues to be a key pillar supporting increased production and market entry. Affordability is an issue with demand-led extension, as the high costs many farmers face in accessing those services, such as travelling to a regional town or city, can act as a strong disincentive to seek out advice and support.

114. Extension services no longer have a simple technical agenda. Given the dual challenge of supporting market competitiveness for commercial agriculture while also addressing poverty in rural areas, the agenda for many programs needs to shift from an exclusive focus on agricultural production to a broader range of services relating to demand-driven production, marketing, savings and credit, natural resource management and poverty reduction. There are also calls for extension services to cover issues relating to nutrition, climate adaptation and gender equity.

115. Women farmers' participation in extension is limited by traditional, social and institutional factors which create barriers for their involvement. Extension workers need to be aware of these factors and adequately address them in planning extension activities.

Male extension officers are not always best placed to reach women farmers – the IAASTD found that over 80% of extension workers in Africa are male, and many of them may not be able or willing (due to cultural norms in some societies) to speak to women, who constitute the majority of farmers in Africa (IAASTD 2009). Vorley et al (2012) suggest that training more female extension workers would contribute to closing the gender gap in agriculture, and quote the example of Nigeria's *Women in Agriculture Programme* which helps improve women farmers' access to training by ensuring that each of the country's states has female extension workers from headquarters down to the field level. In another example, Malawi made a major revision to its agricultural extension approach by introducing a policy that promoted pluralistic and demand-driven extension systems, and which made special provision for targeting women. (For an assessment of the results of Malawi's programme, see Masangano and Mthinda 2012).

116. Technological innovation is providing opportunities for increasing the reach and depth of extension services without increasing the number of extension officers. Technology such as radio has long been used to help convey information to widely-dispersed farmers, but the deep penetration of mobile phone networks in rural regions is creating new avenues for disseminating knowledge cost-effectively. ICT tools including mobile phones, the internet and iPods, combined with more traditional media, can help deliver knowledge in real time to farmers, especially in poorly staffed and remote corners.

117. SMS-based information services such as *Nokia Life Tools* and *Reuters Market Light* are now available to millions of farmers, although there is some question about whether they actually contribute to better realised prices (Van Vark 2013, citing research by Fafchamps and Minten). The Grameen Foundation in Uganda is training representatives from farming communities to act as mobile technology go-betweens in its *Community Knowledge Worker* (CKW) project. Community knowledge workers, who are farmers themselves, use smartphones featuring a purpose-built app to talk to other farmers to provide agricultural tips, weather forecasts, prices, an input supplier directory, and a market platform linking buyers and sellers. They also collect data from them to create an information loop. A recent impact study on CKW found that farmers using the service realised significantly higher prices for their produce than those who did not, and farmer knowledge of issues such as crop management, pests and diseases and animal husbandry also increased noticeably (Van Vark 2013). There is some scope for public support for increased use of ICT. In one such example, Kenya established the National Agriculture Information System under the National Agriculture and Livestock Extension Program, where farmers can access information from their mobile phones through toll-free numbers (Waruru 2011).

118. In another example where new technology is used to increase the reach and efficiency of extension, Digital Green, an NGO operating in India, produces short videos on agricultural techniques, which are made by and for farmers themselves and are highly localised in their content and language or dialect. To date, it has produced more than 2,500 short films and reached around 150,000 farmers. Research found that this model of disseminating agricultural knowledge through group video viewing was at least five times more likely to encourage farmers to adopt the new practices compared to existing extension systems (Van Vark 2013).

119. Governments should explore ways of incentivising private sector providers to come up with innovative ways of providing extension and advice, including through the use of new

technology. The donor community could help support this process, for example through co-investing or funding pilots.

5. Collective action

Possible policy indicator questions: Collective action

- Is legislation in place to facilitate collaboration? What forms of incentives are used to encourage collective action (eg tax incentives)?
- Are there clear rules on management, ownership and governance of producer organisations?
- Does the policy framework promote farmer groups other than formal cooperatives? Does the legal framework recognise and protect organised farmer groups that are not legal cooperatives?
- Does legislation/regulation make explicit provision for including poor/marginalised farmers, for example by making inclusiveness and member empowerment a prerequisite for registration and access to support? Is female representation in governance structures specifically supported, eg through quotas?
- Is there a legal requirement to assess the social and political impacts of economic reforms on smallholder farmers?
- Is there a legal requirement to consult with smallholder farmers on policies that will affect them? Are special measures in place to ensure women are adequately represented in consultations?

120. Acting alone, the vast majority of African smallholder farmers face high input and output costs and are in a weak bargaining position in commercial negotiations with larger or better-informed market actors. This affects farmers' productivity and competitiveness, limiting their scope for entering into markets, as well as leaving them vulnerable to exploitation. They are also more exposed to climate and economic risks as individuals.

121. More fundamentally, smallholder farmers rarely have a say in the policies that affect them and usually have no effective platform from which to lobby for assistance or change (Bienabe and Sautier 2004). Decisions about investment in local infrastructure and public services, access to communal lands and other resources, taxes on deliveries to market and the like can have a decisive impact on farmers' access to markets, yet they are unlikely to be given a chance to provide input into such decisions (ASFG 2010). Farmers also tend not to have any opportunity to provide input into the design of research programmes that could be hugely material to their own circumstances (IAASTD 2009; see also IIED 2012 and the work of INSARD); and are often not properly consulted on interventions and programmes – from governments, donors or other non-state actors – aimed at supporting them.

122. Collective action allows farmers to utilise economies of scale to lower their costs and improve their competitiveness, as well as strengthening their marketing capacity and helping them manage risks. Groups can provide a basis for knowledge exchange and shared learning, act as catalyst for innovation and facilitate the adoption of technology. Groups are better placed to lobby policy makers and to influence resource allocation and other policy decisions, as well as research and development assistance agendas. And working together towards a common goal can help strengthen communities and uplift the marginalised.

123. Collective action is particularly beneficial to women farmers, who face greater obstacles to accessing inputs and markets and are typically in a poor bargaining position due to weak land rights and lower social status. Pooling their resources can help women farmers overcome the many obstacles they face as individuals. Women's groups can be an effective way of building women's social capital, through promoting increased production and helping women maintain control over the additional income they generate. Established producer groups are not always accessible to women; women-only groups can be an effective stepping-stone to joining existing groups (FAO 2011a). Farmer groups have been shown to be inclusive of the poor, although wealthier households are more likely to join (Fischer and Qaim 2011); poorer women joining such groups can help increase the horizontal transfer of social benefits and skills.

124. Recent research by Oxfam and others found that women who participated in farmer groups gained significant economic benefits through their collective action compared to those not in groups. It also found that support to formal collective action such as agricultural marketing cooperatives is beneficial for women who have some assets and limited household responsibilities; while younger women need investment in assets and/or more flexible organisation and support. In supporting women's collective action, Oxfam's research indicates that it is advisable to focus on high-value subsectors where control of land assets is not a critical constraint (Baden 2013).

125. Collective action can take many forms, from informal farmers associations, seed banks, self-help groups and savings/credit groups to more formal cooperatives, certification schemes such as fair trade or participatory organic schemes, and contract farming; and various permutations and combinations of all of these.

126. A vast literature deals with the question of whether collective action results in a better deal for farmers overall, over time and at scale, more often than not arriving at a disappointing conclusion; many studies have analysed the institutional and management failings of cooperatives, marketing boards and other farmer groups⁸. Nevertheless, there is no shortage of anecdotal evidence of successful smaller-scale collective farmer action (see, for example, case studies presented in ASFG 2010).

127. There is no dispute about the benefits of farmer collaboration. The problems with cooperatives and other similar organisations were related to failure in the *mechanism* of collective action rather than the *principle* of collective action. However the challenge remains to take individual success stories to scale. It may be necessary for farmers to develop alternative institutional and management structures and learn from the experience of successful small farmer organisations to ensure the hoped-for benefits of cooperation materialise on a wide scale (Poole & de Frece 2010).

128. Governments should put in place legislation to facilitate collaboration, and should consider offering incentives, such as favourable tax regimes, to encourage collective action. To ensure that farmers' organisation provides the best service, clear rules should be developed on their management, ownership and governance. ILO Recommendation 193 "Promoting Co-operatives"⁹ is an international policy guideline, adopted in 2002, which provides 'a framework for governments to develop the laws, administrative systems and policies that can enable co-operatives to flourish'. For example, South Africa passed the Cooperatives Act in 2005 (amended in 2012) with a view to providing an institutional and legal framework to encourage formation and registration of cooperatives, and providing for support to cooperative enterprises from a range of state agencies.

129. The legal framework should recognise and protect organised farmer groups that are not legal cooperatives. Ideally, government should recognise both formal collective action as well as small-scale, information collaboration, as such informal groups have greater scope for including women and more marginalised farmers. For example, in Indonesia, Chile and Canada policy provision is made for "new generation cooperatives" which allows smallholders to benefit from the cooperative structure without being tied to one model of cumbersome decision-making (Vermeulen and Cotula 2010).

130. Special provision should be made for the inclusion of poor or marginalised farmers, for example by making inclusiveness and member empowerment a prerequisite for registration and access to support. Female representation in governance structures should be specifically supported. Ethiopia's Federal Cooperatives Commission, created in 2002 to organise and promote cooperatives at the national level, aims at providing cooperative services to 70% of the population by 2010, and to increase women's participation in cooperatives from 13 to 30%, and youth participation from almost none to 25% by 2010 (Bijman et al 2007).

CROSS-CUTTING ISSUES

131. Members of the ASFG believe that the issues highlighted in the Foundations and Pillars of this policy framework are of critical importance to help smallholder farmers in Africa scale up their entrepreneurial activity and increase their participation in markets. There are, however, a number of other issues that are material not only to smallholder farmers or the rural economy but to the entire development agenda: gender equity, climate change, and food security. In our conceptual framework consisting of Foundations that support the entire rural economy and Pillars that support smallholder farmers specifically, these issues run through the entire system as cross-cutting structures, hugely relevant to discussions dealing with every other area included in the framework. Any advocacy on the subject of smallholders' access to markets needs to be underpinned by an awareness of these issues, and policy recommendations need to be grounded in a recognition of their importance.

132. This framework does not include any specific indicator questions relating to these cross-cutting issues; although a number of the suggested policy indicators in earlier sections do refer to them (for example, the indicator questions under Pillar 1, Access to land and water, focusing on whether any special measures are in place to reduce the gender gap in land tenure; or the Pillar 2 indicator questions about providing greater support for agroecological approaches to improving soil fertility). A brief summary of pertinent issues in each of the three cross-cutting areas is included here for reference.

a. Gender equity

133. Women constitute an estimated 43% of the global labour force in agriculture. In sub-Saharan Africa on average, women make up close to 50% of the agricultural workforce; in countries like Lesotho, Mozambique and Cote d'Ivoire the figure is closer to 60% (FAO 2011a). Despite this, there is a widespread and deep-running bias against women farmers: Conway (2012) estimates that women working in the agriculture, forestry and fisheries sectors have received only 7-9% of agricultural development assistance in recent years. Partly as a result of this neglect, women farmers today tend to be the poorest and most excluded.

134. Women farmers face a range of gender-specific constraints that result in them producing, on average, 20-30% less than their male counterparts. However, it is widely recognised that, given the same access to agricultural resources, women farmers can be just as productive as men, which would translate into a 2.5-4% increase in agricultural output in the developing world (FAO 2011a).

135. Women farmers have less access to assets, inputs, services and markets than men. Their rights to land and other natural resources are often less secure. Land available to women farmers tends to be of poorer quality, and they have less access to high-yielding seeds, fertiliser, pest control measures and mechanised equipment. Women are time-poor due to competing demands of childcare, household food processing and preparation as well as collecting water. Women have less education and are frequently excluded from training and extension services, and women farmers often have no representation in farmer groups

(FAO 2011a). Women spend an average of 20% more time than men working on farms and often have far less control over the land they cultivate or the income they earn (DFID 2012).

136. Helping women has a disproportionately positive effect on poverty levels. Poor women are much more likely than their male counterparts to invest additional income in their children's health, nutrition and education (Hodinott & Haddad 1995; OHCHR 2012). The FAO estimates that closing the gender productivity gap in agriculture could reduce the number of undernourished people in the world by as much as 100-150 million people.

137. Given these statistics, closing the gender gap should be an integral part of efforts to support Africa's smallholder farmers. Every law, policy, regulation and practice needs to be carefully assessed from a gender equity perspective: will the proposed measure have a negative effect on women farmers? Will it help redress existing gender inequity?

138. A range of sources deal with the question of how best to help close the gender gap in agriculture and ensure that women are seen as equal partners in sustainable development. In a 2011 briefing, ActionAid urge the international community and the Committee for World Food Security (CFS) to "(r)ecognise women are farmers and support interventions which specifically focus on their unique circumstances. These should include: public credit and financial services; guaranteeing secure access, use and control over good quality agricultural land and other productive resources, including appropriate seeds; and targeting women smallholders through agricultural research and extension services. In order for policies and programmes to succeed, they need to incorporate an understanding of women's multiple roles in food provisioning as well as help address gender constraints at the household and community level through empowering women smallholders." The report also recommends setting specific and measurable targets for actions on women farmers; gender-targeted budgeting; and increasing the share of public budgets and agricultural aid that supports women farmers. Finally, the international community should act quickly to provide the material support for country-owned initiatives that prioritise smallholders and women farmers, as promised by the G8 and the G20 (ActionAid 2011a).

139. Better data and greater awareness would also help. Researchers, policy-makers and development agencies should be encouraged to collect more detailed and practical gender-disaggregated information from the field about the particular constraints faced by women farmers, in order to craft more nuanced potential solutions. Advocacy to sensitise policy-makers as well as male farmers and farmer representatives about women farmer's specific needs would also help ensure an environment that is more conducive to women farmers (FANRPAN 2012, OHCHR 2012).

140. Further policy recommendations from the large literature on the subject¹⁰ include:

- Provide labour-saving technologies and public goods and services.
- Make rural labour markets work better for women.
- Invest in rural infrastructure beyond agriculture, including health, education, water and sanitation, to reduce women's time poverty and ensure their health and well-being to enable improved livelihoods.

- Train female extension workers to improve women farmers' access to extension.
- Ensure that disaster risk reduction at all levels addressed the different vulnerabilities and risks faced by women and men (especially in the most marginalised and vulnerable communities).
- Eliminate all forms of discrimination in law.
- Engage women in policy-making and planning processes and make women's voices heard in decision-making at all levels.

Box 6 Addressing gender bias and increasing market access for women fish farmers in Kenya

The aquaculture sector in Western Kenya is constrained by poor investment in infrastructure, finance, and education. These problems are magnified for female farmers who have specific difficulties entering the captured fish trade.

There are considerable structural barriers that limit female economic empowerment in this environment. In general this sector is dominated by male farmers and fishing itself is segregated by gender - men catch the fish and women process it. Processing adds value to fresh catch and in turn provides the potential to increase household wealth and security including food, income and capital security. However in reality it does not lead to the financial or social advantages associated with the ownership of fresh stock.

Women are also placed at considerable personal risk within this value chain. In the Lake Victoria Region there is a practice known as "Jayoba", or sex-for-fish. In addition there are a number of cultural practices such as widow inheritance and polygamy that are having negative financial consequences for women. The ability for women to access finance is also severely limited by the related lack of access to capital and the high interest rates applied to loans.

In the face of these gender specific problems a number of stakeholders, including ASFG member Practical Action, have designed a project that offers an alternative way for women to access the market; namely fish pond farming. This has already had some positive impacts. Indications are that the project 'Empowering Women in Nyanza through Capacity Building and Aquaculture'¹ has the potential to radically transform female participation in the fish market system and for women to develop as farmers.

The project has faced its own significant challenges however due to the business and policy environment in which it operates. The government's economic stimulus package (ESP) subsidises fish pond construction and provision of fingerlings, but not fish handling facilities, inputs (feeds and fingerlings) and financing. Farmers therefore cannot expand their production beyond the government supported ponds to optimise the market potential. Private sector education regarding business opportunities e.g. micro-finance and inputs provision has remained a major gap.

Box 6 Addressing gender bias and increasing market access for women fish farmers in Kenya (contd.)

Practical Action suggest that there are two key areas that could help to bring about change specifically for women in aquaculture: first, women's access to credit could be enhanced through removal of legal restrictions and modifying administrative formalities in credit institutions such that women can obtain credit in their own name; promoting women's saving groups and co-operatives to facilitate the financing of investment beyond the capability of individual women; and training and assisting women in financial management, savings and investment. Second, as the fishery sector is characterised by low levels of education, efforts should be made to increase years at primary school and improve the ability of women to take ownership of projects as they would have a greater literacy and numeracy skills.

141. In his report to the UN's Human Rights Council on Women's rights and the rights to food, the Special Rapporteur on the Right to Food, Olivier de Schutter, reiterates that "(i)nternational human rights law requires States to guarantee gender equality and the empowerment of women... States' obligation to remove all discriminatory provisions in the law, and to combat discrimination that has its source in social and cultural norms, is an immediate obligation that must be complied with without delay" (OHCHR 2012).

b. Climate change

142. Climate change is forecast to lead to a 6% reduction in global agriculture production by 2080 (Conway 2012) but this average figure masks enormous variation: in some of the world's poorest countries, experts predict that higher temperatures and less rainfall could reduce farmers' harvests by a fifth, as soon as 2030 (DFID 2012).

143. Africa is disproportionately affected by climate change: although it contributes less than 4% to overall global greenhouse gas emissions, African countries are among the most vulnerable to climate change because of their dependence on rain-fed agriculture, high levels of poverty, low levels of human and physical capital, and poor infrastructure (IFPRI 2009); they also have very low capacity to adapt to climate change. Sub-Saharan Africa is dominated by fragile ecosystems. Nearly 75% of its surface area is dry land or desert, making the continent highly vulnerable to droughts and floods. In the decade leading up to 2006, Africa experience almost a third of the catastrophes relating to water that occurred at a worldwide level, with almost 135 million people affected by droughts, equivalent to 80% of the total population (World Water Forum 2006).

144. The impacts on African agricultural output will be substantial. IFPRI's crop model indicates that average rice, wheat and maize yields in sub-Saharan Africa will decline by up to 14%, 22% and 5% respectively by 2050 as a result of climate change, despite the positive effect of rising temperature levels on crop yields. (Rising temperatures are however expected to have a positive impact on livestock production (Juma 2013)).

145. Although agriculture is one of the main drivers of climate change - the agricultural sector generates around 10-12% of global greenhouse emissions (IPCC 2007), and when emissions from agricultural fuel use, fertiliser production and land use change are included, this increases to 30% from a sector that generates only 4% of global GDP (Smith et al in Conway 2012) - the overwhelming majority of these emissions are generated in the industrial agricultural sector, with African smallholders currently making a negligible contribution. When it comes to Africa's small-scale farmers, the policy focus needs to be squarely on adaptation rather than mitigation, particularly as adaptation needs are currently severely underfunded (CIDSE 2012).

146. Smallholder farmers are especially affected by climate change, in particular by the increasing loss of biodiversity and resource degradation it is giving rise to. To cope with the impacts of climate change, existing agricultural practices need to be adapted. "Climate-smart agriculture", as promoted by the FAO, involves, among other strategies, replacing chemical fertiliser and manure (which produces high nitrous oxide emissions) with green manure and using micro-dosing of fertiliser; improving water harvesting and retention and the use of micro-irrigation; improving ecosystem management and biodiversity protection through increased use of agroecological techniques; preservation of genetic crops and breeds and their wild relatives to facilitate generation of new varieties that are better adapted to changed climatic conditions; and increasing use of agroforestry (FAO 2010).

147. Farmers need to make these adjustments to farming practices themselves; but funding climate change adaptation requires public investment on an enormous scale. IFPRI estimated in 2009 that an additional US\$7 billion a year will need to be invested globally to adapt to the impacts of climate change. Sub-Saharan African investment needs dominate, making up about 40% of the total; of that amount, the vast majority is for rural roads, although investment needs for irrigation and research are also substantial (IFPRI 2009).

148. In addition to dramatically increasing overall investment in climate change adaptation, governments and development agencies also need to redirect agricultural spending and aid away from high-emitting practices towards models that are not only environmentally sustainable but also accessible to the most vulnerable (CIDSE 2012).

149. Governments and development agencies can make a number of investments to support smallholders' capacity to cope with the effects of climate change¹¹:

- a. support participatory technology development, drawing on agroecological sciences and public extension services;
- b. make large-scale investments in climate-focused research, including at decentralised tertiary institutions;
- c. invest in climate-resilient rural infrastructure such as flood-proof storerooms;
- d. improve weather reporting and facilitate increased access to information;
- e. support community-based adaptation strategies;
- f. improve data collection, dissemination, and analysis.

c. Food security

150. The recent food prices crises highlighted the vulnerability of poor people to volatile food prices, and vaulted the issue of food security to the top of the global agenda. As smallholders produce up to 80% of the food consumed in Africa and Asia, a lot of emphasis is being placed on finding ways to help them increase their output to meet growing demand. But smallholders are central to the question of food security not only as producers but also as consumers of food: the majority of smallholders are net buyers of food, and volatile food prices greatly increase their vulnerability and threaten their own food security (IFAD 2010). Maintaining adequate food production and developing resistance against price shocks should be a founding principle of all agricultural market access interventions.

151. A 2011 CAFOD study into the impact of the food price crises on smallholder farmers and small businesses finds that risk and vulnerability are long-standing, overriding concerns guiding their economic activities, and makes a strong recommendation for a policy response that prioritises reducing risk and vulnerability. The report emphasises the need for macro-economic stability, including reducing inflation, price and currency volatility (respondents in workshops confirmed that price stability mattered more than absolute price levels), and recommends support for G20 action on reforming the international monetary system and commodity market speculation.

152. The UN expects world population to grow to 9.15 billion in 2050. Combined with changing diets among growing middle classes in wealthier developing countries, this is expected to result in a significant increase in demand not only for cereals but also dairy and meat products. FAO projections suggest that, in the absence of changing food consumption habits in the West and effective action to deal with food waste and loss, overall food production will have to increase by 70% between 2005/07 and 2050 to meet growing demand. Increasing demand for biofuels and the growing impacts of climate change pose further challenges to maintaining food security (FAO 2009).

153. However 'food security' also encompasses the issue of persistent hunger which affected 870 million people in 2010-2012, according to latest FAO estimates, and malnutrition (FAO 2012). It is important to ensure that agricultural programmes include improved nutrition and health outcomes for women and children as a key objective (Wiggins 2011). Growing more nutritious varieties of staple crops that have higher levels of micronutrients like vitamin A, iron, and zinc can potentially reduce death and disease, especially of women and children. Producing more diverse crops, especially fruits and vegetables, can also help to combat malnutrition, and selling more nutritious food could increase incomes and provide additional employment (IFPRI 2011).

CONCLUSIONS

154. Few dispute the central role of smallholder farmers in addressing global challenges relating to food security, poverty and climate change. Consensus is also growing that smallholders need to increase their participation in markets if they are to escape poverty and contribute to national and household food security. But the evidence presented here suggests that the mainstream approach which places a lot of emphasis on scaling up the use of agro-chemical inputs, integration into highly commercialised agricultural value chains and aiming for export markets threatens to exclude the majority of smallholder farmers in Africa, and could actively harm their interests.

155. For smaller producers to benefit from the renewed focus on agriculture and the hoped-for increased investment in the sector, more recognition is needed of the specific constraints they face and greater allowance should be made in policy planning and budget allocation to their needs. Ideally, smallholders would be consulted about policies and would have an opportunity to influence decisions about research agendas and budget allocation – some of the indicators suggested here aim to achieve this objective – but while they are not effectively represented continued advocacy will be needed on their behalf to help ensure their needs are taken into account.

It is hoped that the wide range of suggested policy indicator questions outlined in this report will serve as a basis for designing more targeted advocacy strategies.

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¹ The OECD uses a 5-level classification of ‘rural worlds’: Large commercial farms, smallholders who produce commercially, smaller farms mainly devoted to subsistence, landless labourers, and the poorest households that need social assistance (OECD 2006). The 3 categories described here would correspond to the middle 3 OECD rural worlds. See Dorward (2009) on the three strategies available to these different groups to escape poverty: ‘stepping up’, ‘stepping out’ and ‘hanging in’. Vorley et al for Oxfam (2012) combines these 2 classifications in the definition of their Rural World 1,2 and 3.

² Research shared by S Wiggins at Future Agricultures Consortium seminar at ODI, London on 23 February 2013 (not yet published).

³ Drawn from Wiggins (2012), Vorley et al (2012), ThisisAfrica (2012), and research shared by S Wiggins at Future Agricultures Consortium seminar at ODI, London on 23 February 2013.

⁴ More information on CAADP is available at <http://www.nepad-caadp.net/>

*Agricultural research and development and agricultural extension services are key public goods and of critical importance to smallholders. For purposes of this framework research and extension services is treated as a separate ‘Pillar’ rather than as part of the foundations (see Pillar 4), as it impacts on smallholders specifically and directly, rather than benefiting the rural population at large which the other factors categorised as ‘Foundations’ do.

⁵ IFAD Rural Poverty Report 2011 contains a detailed chapter on the impact of restructured markets on smallholder farmers. Available at <http://www.ifad.org/rpr2011/report/e/rpr2011.pdf>, page 11 onwards.

⁶ See, among others, Diao et al (2012), Jaffee et al 2011, Mitchell & Coles (2011) and Shepherd (2007).

⁷ More information is available at <http://www.wfp.org/purchase-progress/overview>.

⁸ See, for example, Poole & De Frece (2010) whose review of existing organisational forms of smallholder farmer’s associations concludes that “in general neither statutory or voluntary forms of association and collective enterprise have generated significant and sustainable agribusiness in Africa”. See also Ortman and King (2007) on the five problems inherent to cooperatives; and Jaffee (2011) on the high entry costs and limited benefits of joining certification schemes.

⁹ Available at http://www.ilo.org/empent/Publications/WCMS_160221/lang--en/index.htm

¹⁰ Drawn from FAO (2011a), ActionAid et al (2011b), OHCHR (2012), Vorley et al (2012)

¹¹ Drawn from IFPRI 2009, DFID 2012, Juma 2013, ASFG 2010.