

reaching the poor *a call to action*

Investment in
smallholder
agriculture in
sub-Saharan Africa

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Prepared jointly by staff at FARM-Africa, Harvest Help and the Centre for Development and Poverty Reduction, Department of Agricultural Sciences, Imperial College, London.

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PREFACE

Those of us privileged to work with farmers in Africa have become increasingly frustrated in recent years. Every day we see the impact of small-scale grassroots initiatives in improving the lives of farmers and herders. Yet at the same time overall poverty levels continue to rise alarmingly and the levels of investment in agriculture continue to decline. During the 1990s overall investment in agriculture, by donors and national governments, halved, while the number of those in need of food aid doubled. Something is wrong.

FARM-Africa and Harvest Help have been deeply concerned at these trends and wanted both to highlight the lack of investment and contribute the benefit of our grassroots experience and perspective to the emerging debate on what to do about African agriculture.

We knew that it was vital to place our local-level experience within the context of sound macro-economic policies. This paper is the outcome of our collaboration with academic researchers specialising in macro-economic policy research. During lengthy debates involving different perspectives, a consensus emerged around a new agenda for African agriculture that is achievable and would bring real improvement to the lives of millions of people who rely on farming for their livelihoods. It is our contribution to the current debate – how best to allocate resources to stimulate poverty-reducing growth in sub-Saharan Africa. We are most grateful to Andrew Dorward, Colin Poulton and Ian Urey of Imperial College London for putting so much time and effort into what has been a fruitful collaboration.

We passionately believe that smallholder agriculture has a key role to play in poverty reduction and that this requires a new impetus with better policies and increased investment. We hope this paper will focus the attention of donors and national governments on the importance of investing in African agriculture. There is an urgent moral imperative to invest in those in most need – Africa's farmers, who are most able to solve their own problems.

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EXECUTIVE SUMMARY

The most severe and intractable poverty in the world is in Africa south of the Sahara. Nearly half of all the people there live in absolute poverty, with incomes of less than a dollar a day. On present trends, two of the most fundamental Millennium Development Goals set by the United Nations – halving the number of people living in absolute poverty and halving the proportion of people suffering from hunger – will not be met by the target year of 2015. Indeed, the World Bank forecasts that in Africa and the Middle East the number of “absolute poor” will actually rise between now and 2015.

To reverse this disaster, the focus of development in sub-Saharan Africa must be on rural areas, where three-quarters of poor people live. Here, tackling poverty means boosting smallholder agriculture and recognising that this is the best – and perhaps only – way of driving broad-based economic growth and poverty reduction in Africa: compared with other sectors, smallholder agriculture has the highest potential for kick-starting and supporting self-sustaining growth and employment across a range of agricultural and non-agricultural activities.

Achieving smallholder agriculture growth will not be easy. Small-scale farmers continue to face a host of problems, including poor access to markets and to the financial, extension and research services needed to help them work in difficult conditions; limited resources; and high exposure to price and production risks. These difficulties are compounded by the debilitating impacts of HIV/AIDS on individuals, households and communities. Unless these and other constraints are addressed by national governments and international organisations, the prospects for Africa’s poor remain bleak.

Action is needed to empower rural people and enable them to access technical and commercial information and skills, inputs, financial services and markets. Increases in investment, with new and more farmer-centred approaches, are needed to bring about coordinated delivery of these services, as well as improved infrastructure, such as better roads, and access to water for irrigation.

Reforms to Northern agricultural and trade policies are also necessary, together with policies that cut the risks and increase the returns on the substantial investments that smallholders must make themselves in expanding output.

Governments have to play a leading role in coordinating new policies and investments, but ministries of agriculture are commonly under-resourced and ineffective. New approaches are needed to define their roles and improve their capacity.

The report ends with a series of specific recommendations and a call for action by donors and governments.



POVERTY IN SUB-SAHARAN AFRICA

INTRODUCTION

1. In September 2005 a UN Special Assembly will assess progress towards achievement of the Millennium Development Goals (MDGs). However, some things are already clear: while at current rates of progress China should comfortably exceed most of the MDG targets, the majority of countries in sub-Saharan Africa will not – by a long way. There is no shortage of statistics showing that, globally, poverty is most severe and most intractable in sub-Saharan Africa. The plight of Africa's poor – ravaged by conflict and hunger or simply condemned to lives of apparently unrewarded toil – is frequently and vividly presented in the media. Africa, particularly rural Africa, desperately needs poverty-reducing economic growth. This paper argues that growth in smallholder agriculture offers the best prospects for stimulating such growth in much of sub-Saharan Africa. Unfortunately, while most Poverty Reduction Strategy Papers (PRSPs) recognise the critical importance of the agricultural sector to national economies, employment, income and food security, this awareness is not matched by budget allocations to the agricultural sector. Meanwhile, while major donors, such as the United States Agency for International Development (USAID) and Britain's Department for International Development (DFID), have recently taken the welcome step of acknowledging the critical importance of agricultural growth to poverty-reduction strategies in Africa, there is little consensus on what a strategy for stimulating smallholder agricultural growth in sub-Saharan Africa should look like. This paper, therefore, identifies priority areas for investment and intervention, by both national governments and donors, to enable smallholder agriculture to fulfil its potential to contribute to poverty-reduction and a better standard of living for people in sub-Saharan Africa. The word agriculture is used to cover all livelihoods based on the use of renewable natural resources – crops, livestock, forest products etc.

growth in smallholder agriculture offers the best prospects for stimulating poverty-reducing growth in sub-Saharan Africa

ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS

2. The international community has made clear and repeated commitments to achieving the Millennium Development Goals (MDGs). Goal 1, to eradicate extreme poverty and hunger, contains two targets:

- halve, between 1990 and 2015, the proportion of people whose income is less than a dollar a day
- halve, between 1990 and 2015, the proportion of people who suffer from hunger.

BOX 1. WORLD POVERTY FACTS AND FIGURES

- 1.2 billion people – one in five of the global population – live in absolute poverty (on income of less than US\$1 per day)
- 75% of these people live in rural areas and 60% of the absolute poor will still live in rural areas by 2025
- Over 50% of the poor depend directly on agriculture for their livelihoods
- Over 70% of the poor live in south Asia and sub-Saharan Africa
- In sub-Saharan Africa the incidence of absolute poverty is nearly 50% and the rate of poverty decline is six times lower than is needed to meet MDG1.

Sources: Hanmer and Nashchold (2000); IFAD (2001)

3. Box 1 provides a basic set of facts on the distribution and incidence of global poverty, which these targets address. Annex Tables 1 and 2 also provide information on the regional concentration of poverty and under-nutrition in sub-Saharan Africa and south Asia. The Box and Tables highlight that:

- poverty is predominantly a rural problem
- poverty is increasingly concentrated in south Asia and sub-Saharan Africa
- in sub-Saharan Africa the depth of poverty is most severe and, in contrast to the rest of the world, the incidence of poverty is increasing in many countries, and
- smallholder agriculture is an important component of the livelihoods of very large numbers

as poverty is predominantly rural, poverty-reduction efforts in Africa should focus on rural areas



of poor people. Food and Agriculture Organization (FAO) figures show that in sub-Saharan Africa 64% of the total population are directly involved in agriculture as their primary source of income and livelihood.

4. Annex Table I also shows that only in sub-Saharan Africa and in the much smaller Middle East and North Africa region are the numbers of people in absolute poverty are expected to rise between now and 2015. For the foreseeable future poverty is likely to remain widespread within sub-Saharan Africa, with hunger a recurrent problem in several countries. Large numbers of people in more remote areas are also likely to remain heavily dependent on semi-subsistence agriculture for their livelihoods for some time to come. Thus, while this paper sets out a vision for renewed agricultural growth in sub-Saharan Africa, agriculture's vital contribution to food security and welfare for the poor (particularly the chronic poor in remote areas) should not be forgotten.

5. If the MDG targets are to be achieved, both national governments and donors must reach the poor by targeting resources to the locations and economic activities in which the poor are engaged. It is alarming that donor support to the agriculture sector has declined significantly in the last 20 years. World Bank lending for agricultural activities has declined from 31% of total lending in 1979-81 to less than 10% in 1999-2000 (World Bank, 2003). FAO notes the failure to target resources, with a decline in resources going to countries with a high incidence of malnutrition (mainly African) from 7% of total aid in 1993 to 5% in 1996-2000 (FAO, 2001). Annex Tables 3, 4, and 5 provide information on the levels and declines in aid to African agriculture. At the same time, there has been a dramatic rise in expenditure on emergency food aid, as a number of countries have become unable to feed themselves even in good years.

CHOICE OF STRATEGY

POVERTY REDUCTION OPTIONS IN SUB-SAHARAN AFRICA

6. In this section we examine the major alternative strategies for poverty reduction. We consider the nature of economic growth needed for people to climb out of poverty and the sectors in which such growth may be located. We conclude that despite its many challenges, sustainable intensification of smallholder agricultural production should be a key component of national anti-poverty strategies in most, if not all, countries of sub-Saharan Africa. Sustainable intensification means that smallholders are able to raise crop yields and/or livestock production without depleting the natural resource base (soil fertility, grazing land etc.) on which their production depends. As illustrated by the case of Machakos in Kenya (Tiffen *et al.*, 1994), there are likely to be various components to sustainable intensification, including investment in soil and water conservation and in livestock; greater use of both organic and inorganic technologies and inputs; introduction of higher-value crops and varieties in response to emerging market opportunities.

sustainable intensification of smallholder agricultural production must be a key component in poverty reduction

7. This paper's focus on agricultural intensification is not to ignore the important research findings in recent years on the diversity and ongoing diversification of livelihoods in rural Africa and other developing regions (for example, Reardon, 1997; Ellis, 2000; *Food Policy* Special Issue 26:4 2001). Nor is it to argue against investments in activities in the rural non-farm economy, which can be important complements to investment in agricultural growth. However, it does recognise that, without growth in the agricultural sector, demand for goods and services produced in the rural non-farm economy, and hence incomes generated by non-farm activity, will be "importantly constrained" (Haggblade *et al.*, 2002, p63). The arguments for smallholder agriculture being a critical driver of growth and poverty reduction are based both on strong econometric evidence from around the world (discussed in paragraph 23) and analysis of the processes of and necessary conditions for poverty-reducing growth in rural Africa, informed by historical experience elsewhere.



GROWTH VS SAFETY NETS

8. Material poverty reduction may be achieved by equitably distributed growth in an economy or by redistributive welfare or safety nets. Our focus is on the former. While redistributive welfare or safety nets may be necessary even in a growing economy, they are not sustainable as a major strategy for poverty reduction in poor countries without extensive and ongoing external support. They also face significant difficulties in targeting and they carry large social costs, fostering dependency at many different levels of society and sometimes actually undermining economic activity (as with, for example, food aid distributions depressing producer prices). However, in some parts of sub-Saharan Africa long-term growth opportunities are currently hard to identify. The question that has to be asked then is: what is the cheapest and least socially damaging way of providing safety net support in such circumstances? We argue that investment in productive economic activity (even if this is not fully "sustainable" or "competitive" by normal economic criteria) is likely to be better than long-term reliance on providing direct hand-outs, while it also maintains the dignity of those involved. Such investment can also build an economic and institutional base from which more competitive opportunities may eventually arise for at least part of the population, while developing skills and assets for others that will help them to migrate to other areas with greater opportunities.

investment in productive economic activity is better than long-term reliance on providing hand-outs

9. In this regard, we recognise that although the conditions faced in some parts of today's poorer areas may be too difficult and challenging for agriculture to be a viable driver for pro-poor economic growth, support for smallholder agricultural development is still important for two reasons. Firstly, few other growth opportunities exist in many of these areas. Secondly, smallholder agriculture performs important welfare and food security roles in these areas and hence there are huge social, economic and environmental costs of failure to support smallholder production activities. A vision is required of what a reasonable quality rural life could look like in

smallholder agriculture performs important welfare and food security roles

such areas. Otherwise, policy-makers should accept that rural migrants, with no resources and few skills to start up their own independent activity, will arrive in ever increasing numbers in urban areas that are already struggling to cope with their existing rate of expansion.

GROWTH DRIVERS AND SUPPORTERS

10. Poverty reduction is best achieved through equitably distributed growth. At national level, it is widely understood that, particularly for small states with small domestic markets, export growth is the key to stimulating rapid economic growth. Export growth based on smallholder agriculture will automatically distribute benefits fairly widely through an economy, but where the most promising export opportunities do not have such favourable distributional impacts, policy-makers should seek complementary activities that distribute the benefits of the resulting growth as widely as possible. To demonstrate the importance of smallholder agriculture in this process, this paper distinguishes between growth “drivers” (the initial loci of growth) and growth “supporters” (the complementary activities that help to multiply and distribute the benefits of the resulting growth). Given that most people in Africa – and especially most poor people – live in rural areas, multiplying and distributing the benefits inevitably involves seeking ways to channel growth into rural areas (even if many people simultaneously migrate from these areas to urban centres). The concept of growth drivers and supporters is also helpful in thinking about poverty-reduction dynamics *within* the rural sector. Activities that stimulate growth in rural areas will not necessarily bring direct benefits to the very poorest, but rural growth supporters may be identified to assist this process.

11. Which sectors, therefore, are best placed to contribute to pro-poor growth in sub-Saharan Africa? We first consider drivers of growth at national level, then consider how to ensure that the benefits of that growth are multiplied and equitably distributed, with a particular focus on rural areas.

NATIONAL-LEVEL GROWTH DRIVERS

12. At national level, the first requirement for a growth driver is that there exists the market opportunity to expand the value of exports, thereby increasing foreign currency earnings and gross domestic product (GDP). With suitable taxation policies and reasonable governance, higher levels of export activity should also raise government revenues for investment in the provision of public services, both productive and welfare. Fafchamps *et al.*, (2001) review the potential for export growth in industry, minerals, tourism and agriculture to drive broader economic growth in sub-Saharan Africa. They argue that rapid and sustained growth in national GDP is possible only when the manufacturing sector is growing strongly, as rates of growth achievable in manufacturing and modern services are much higher than rates of growth achievable in agriculture and mining. However, there is little chance of establishing international export industries in landlocked African countries. A more likely scenario is that a small number of countries are able to develop coastal enclaves of industrial growth, leaving a large hinterland to derive benefits from such growth largely through migrant labour and remittances. Meanwhile, much of the mineral wealth in sub-Saharan Africa remains under-exploited and is thus of interest to international mining companies. Similarly, Africa’s wildlife and scenery, unspoilt beaches and history are significant assets for international tourism. But in both cases the resources are unequally distributed across countries.

13. Fafchamps *et al.*, (2001) therefore conclude that many African countries will have to rely on agricultural exports to stimulate national economic growth for the foreseeable future. This is not to deny the importance of domestic markets for agricultural produce, to which we turn shortly. However, where agricultural exports are important, it is important to consider the policy choice between the promotion of large farms on the one hand and smallholder agriculture on the other. Debate continues as regards the relative productivity and competitiveness of small and large-scale agriculture, and the conclusion is likely to vary between different products and locations. With its ability to draw on flexible, motivated and cheap labour, smallholder agriculture tends to have the advantage for labour intensive production of most traditional

most poor people in Africa live in rural areas: growth should occur in rural areas to multiply and distribute the benefits

4

the first requirement for a growth driver is that a market opportunity exists

smallholder agriculture has the advantage for low technology, labour-intensive production of traditional commodities

commodities. However, where vertical coordination is increasing within supply chains (as is increasingly the case with most supermarket systems, both domestic and international, for example), large-scale agriculture often appears better placed to satisfy the delivery, quality and traceability requirements of major buyers (Dolan *et al.*, 1999). Moreover, while large-scale agricultural development is generally socially and economically disruptive in areas of high population density, in land-abundant areas it can generate the initial levels of economic activity necessary to justify general infrastructural development much more quickly than can smallholder agriculture. In such circumstances, policy should seek to maximise the linkages between strategically located large-scale agricultural enterprises (“core” estates with well-developed market linkages and possibly also processing capacity) and surrounding smallholder agricultural systems.

many African countries will have to rely on agriculture to stimulate national economic growth for the foreseeable future

THE IMPORTANCE OF INTRA-REGIONAL TRADE

14. The analysis of Fafchamps *et al.* is based on the assumption that African governments are unable to push ahead with the liberalisation of intra-African trade; hence their emphasis on international markets as a source of demand growth. However, where progress can be made in stimulating cross-border trade, this can act as an engine for growth and serve to attract additional investment in both manufacturing and agriculture. Liberalisation of intra-regional trade could mean that even some landlocked countries may be able to pursue a manufacturing-led growth strategy.

15. There is also scope to expand cross-border and intra-regional trade in agricultural products. Three factors contribute to this potential. Firstly, Africa as a whole imports perhaps 20% of its staple food requirements. Liberalising intra-regional trade in agricultural products would allow high-potential agro-ecological zones to respond to structural deficits in neighbouring countries. Secondly, high-potential agro-ecological zones within a number of countries (such as southern Tanzania, northern Mozambique) are located much further from their national capitals than from markets in neighbouring countries. Hence, expanding cross-border trade should increase the prices that producers receive for their produce. Thirdly, a poor year in one country may coincide with a good harvest in a neighbouring country, offering opportunities for producers in the latter to supply the former. Cross-border exports of agricultural produce are unlikely to be subject to the same quality and traceability requirements that are increasingly demanded by international export markets. Thus, this type of trade is much more accessible to participation by smallholder producers than is international trade.

16. Currently, much cross-border trade in agricultural produce in Africa is small-scale and informal, as it is subject to either permanent or periodic government restrictions. These discourage large-scale investment in intra-regional trading activity, to the detriment of both producers and consumers. While there is progress towards liberalising intra-regional trade in some parts of Africa, in general progress remains slow. This is an area that deserves much greater attention.

NATIONAL-LEVEL GROWTH SUPPORTERS – RURAL GROWTH DRIVERS

17. Growth supporters both multiply and distribute the benefits of economic growth in driver sectors more widely. We suggest that, to contribute to poverty-reducing economic growth processes, national supporters should:

- offer accessible income opportunities to the poor, with high unskilled labour demands
- in order to avoid widespread social disruption, offer growth and employment opportunities to the poor where the poor are located.

As already noted, the majority of Africa’s poor are found in rural areas. Thus, to contribute to poverty-reducing economic growth, national growth supporters should channel the benefits of national economic growth into rural areas.

18. Following these arguments, the agricultural sector is likely to have a key role to play in a national growth strategy even where manufacturing, minerals or tourism are the national growth drivers, for two broad sets of reasons. Firstly, agricultural growth can support growth

to contribute to poverty reduction, national growth ‘supporters’ should channel benefits into rural areas

elsewhere in the economy in a number of ways (Mellor, 1986; Timmer, 1988; Dorward and Morrison, 2000), by:

- increasing local availability of food: this should lower food prices and thus keep real wages competitive in the growing sectors. It also means that scarce foreign exchange supplies can be spent on imported intermediate goods for productive purposes, rather than on feeding growing urban populations
- increasing foreign exchange earnings (through agricultural exports), as an alternative way of feeding growing urban populations without choking off non-agricultural growth
- increasing agricultural incomes: this should lead to increased expenditure on locally produced goods and services, supporting growth in other sectors
- releasing capital and labour to support growth in other sectors.

there are two main 'tradable' goods and services that rural areas can sell to growing parts of the remainder of the economy: labour and agricultural products

19. Secondly, where manufacturing, minerals or tourism are the national growth drivers, mechanisms have to be found to channel the benefits from this growth to rural households. Essentially, there are two main "tradable" goods and services that rural areas can sell to growing parts of the remainder of the economy: labour (through migration, with benefits flowing back into rural areas through remittances) and agricultural products. Labour flows are likely to be more important for lower-potential agricultural areas, but arguably smallholder agricultural growth in response to growing demand elsewhere in the economy will bring broader benefits to communities in areas of medium-high agricultural potential than will migration and wage employment until economic development is at quite an advanced stage. In this regard livestock and vegetable products deserve particular mention, in addition to basic staples, as local demand for them tends to increase rapidly with increasing local incomes and with the burgeoning growth of Africa's cities (Tiffen, 2003).

20. Opportunities for informal non-farm activities to drive growth in rural areas appear to be limited, as these activities tend to produce few tradable products. Informal non-farm activities can, however, be important as rural growth supporters, multiplying and spreading to the poor (through consumption linkages) the benefits of smallholder agricultural growth, local wage employment or remittance income. This has been the experience of many parts of Asia that have experienced smallholder agricultural growth, and is a major explanation for the success of micro-finance initiatives in rural Asia as compared with their very limited spread in most parts of rural Africa, where rural growth drivers have been much weaker (Dorward *et al.*, 2001).

LOW-POTENTIAL AREAS

21. Before turning to the question of whether smallholder agricultural growth is practicable in current African conditions, it is worth considering the applicability of the arguments to areas of low agro-ecological potential (where many of the African poor live). In such areas, including pastoralist areas, smallholder agriculture is unlikely to function as a driver even of rural growth, yet it continues to perform vital food security and welfare functions. Moreover, it will continue to do this until the efficiency of rural food markets increases considerably and broader employment opportunities expand to a similar degree. At the same time, the natural resource base on which such agricultural activity depends is being degraded, more or less rapidly, by the growth of the populations that still rely to some degree on semi-subsistence agriculture. Sustaining and indeed enhancing the ability of poor households to meet their food needs through their own production requires intensification supported by public investment, just as in higher-potential areas. Of course, the nature of the intensification will be different (for example, greater emphasis on soil and water conservation, less on purchased inputs) as will the role of public support services (for example, greater emphasis on supporting common property resource management; different emphases within livestock support services). However, the basic case for continuing investment in the agricultural and livestock sectors is the same.

In the long term, fragmented agricultural landholdings may need to be consolidated in order for agricultural productivity to increase. Many smallholders may also be forced to quit agriculture but it is important that smallholder agriculture is still supported in these areas to ensure that people can make beneficial exits from agriculture rather than distress-driven ones.

in low-potential areas, intensification will emphasise soil and water conservation, public support services and livestock

THE POTENTIAL AND CHALLENGE OF AGRICULTURAL DEVELOPMENT IN SUB-SAHARAN AFRICA

22. In this section we document the considerable success of agricultural development in driving poverty reduction in Asia, and the more limited growth of smallholder agriculture in sub-Saharan Africa. We consider three broad sets of challenges facing agricultural growth in the region: local, global and policy challenges.

SUCCESSSES AND FAILURES IN AGRICULTURAL GROWTH

23. As noted earlier, agricultural development is a well-documented contributor to global poverty reduction. Thirtle *et al.*, (2001) cite a wide range of empirical studies showing how agricultural growth has promoted poverty reduction. Irz *et al.*, (2001) show a strong negative correlation between agricultural yields and poverty across samples both of developing countries in general and African countries in particular. Fan *et al.*, (2004) show how a range of different types of investments in India in the 1960s and 1970s had major poverty reduction impacts as a result of the stimulus they provided to agricultural growth. Gallup *et al.*, (1997) estimate higher returns, in terms of poverty reduction, from agricultural investment compared to other forms of investment (see Annex Table 7).

24. Worldwide there have been dramatic increases in agricultural production over the last 40 or 50 years (with annual increases in agricultural production averaging 2.3% from 1965-1998), and in Asia (see Box 2) and Africa much of this growth has been in smallholder agriculture. However, in sub-Saharan Africa agricultural output grew slower than overall population growth between 1965-2001. Moreover, sub-Saharan Africa is still achieving its agricultural growth more through expansion of cultivated areas than through yield increases, while in other parts of the world almost all growth is the result of yield increases. Annex Table 7 shows how far sub-Saharan Africa lags behind other regions in terms of agricultural yields – and the gap is widening. There is a striking correspondence between agricultural growth based on productivity increases and poverty reduction.

agricultural growth has promoted poverty reduction, particularly in Asia



BOX 2. AGRICULTURAL SUCCESS IN ASIA

The greatest success stories in agricultural growth and poverty reduction emerge from the “green revolution” in east, south-east and parts of South Asia. Dramatic yield increases were associated with new high-yielding varieties of rice and wheat, irrigation, and use of inorganic fertilisers and pesticides. These were generally associated with heavy investment in rural infrastructure, extension, research, credit systems for input purchases, and interventions in input and grain markets (Dorward *et al.*, 2004).

In India, for example, foodgrain production increased by 3.5% a year throughout the 1980s, helping poverty reduction. The incidence of poverty declined from over 50% in the early 1970s to 35% in the late 1990s. Public expenditure on agricultural development (with subsidies on fertilizers and credit) and rural infrastructure were key determinants of agricultural growth and poverty reduction, particularly in the early stages of the green revolution (Fan *et al.*, 2004).

The Asian green revolution made a dramatic contribution to world food supplies, to lower food prices, to economic growth and to poverty reduction. However, it was not without its difficulties and there are real concerns regarding overuse of chemicals, loss of biodiversity, soil degradation, pest problems, and nutritional and risk implications of monoculture systems (Bhalla and Singh, 2001). These issues are very important in the more fragile and diverse African agro-ecosystems.

contrary to the pessimistic view of African agriculture, there have been success stories

25. Although Africa has not achieved dramatic and sustained agricultural growth, there have been success stories – contrary to the generally depressing view of African agriculture (Gabre-Madhin and Haggblade, 2001). These include not only green revolution technology-based successes, such as the (short-lived) maize booms in southern Africa in the 1980s (Eicher, 1995), but also low external input developments (Box 3). The problem, however, is that either they have not been sustained or they have not been large and widespread enough to outstrip population growth. Nevertheless, it should be recognised that African agriculture has grown (Box 4), despite declining investment and support. It is these circumstances that must be addressed if smallholder agriculture is to grow faster.

BOX 3. LOW-INPUT HOUSEHOLD-LEVEL SUCCESS

Once very poor, but now a better-off farmer, Fred Muchindu of Naluyanda, Chibombo district, Zambia, has significantly increased his maize yields over a period of three years.

Mr Muchindu was forced from his homeland in southern Zambia after frequent severe droughts and, after some time trying to make a living in the capital, he settled in Naluyanda. As an outsider, he was given a marginal area to farm and found it difficult to grow enough from his infertile land. He relied on piecework paid in the form of food to keep his family.

In 2001, Harvest Help began working through a local partner in Naluyanda to promote sustainable farming systems. Mr Muchindu received training, learning various methods of soil and water management. He went on a study tour to see how these methods had been implemented by farmers elsewhere. Since then he has worked hard to improve his soil with compost, chicken and green manures. He prepares his fields with potholes, a minimum tillage technique. In 1999, a dry year, his main field yielded just 150kg of hybrid maize. In 2003, with good rains and much improved soil, he harvested an incredible 3,500kg from the same piece of land. This dramatic increase is due to a combination of reasons: as well as improved soil structure and fertility, Mr Muchindu uses a type of open-pollinated maize that is more suited to the local conditions than risky, high-demanding hybrid varieties.

Mr Muchindu is now able to grow enough food for his family to last throughout the year. He has improved his house and started beekeeping as an income-generating activity. "I'm now a kilometre away from poverty," he says. A sustainable farming approach is working for him and many other families.

BOX 4. AGRICULTURAL GROWTH IN AFRICA: IT IS HAPPENING

Whilst many, including ourselves, note that agricultural growth has been slower in sub-Saharan Africa than in other regions in recent decades and that it needs to accelerate if it is to make a significant contribution to poverty reduction in Africa, some growth has been occurring, even with relatively little formal assistance.

Wiggins (2000) examined the evidence from 26 village-level case studies conducted during the decade of the mid-1970s to mid-1980s. He found that in most cases the story told was of agricultural households coping with difficult conditions and responding to available opportunities in local or national markets. Market access was found to be "essential for agricultural development", while other factors, such as being able to obtain appropriate technologies with which to respond to opportunities, were also helpful.

More recently, Tiffen (2003) has reported the findings of research conducted in four semi-arid districts of west and east Africa. She finds that case study evidence paints a less depressing picture than official agricultural statistics (which both she and Wiggins remind us can be highly questionable). Tiffen highlights the rapid growth of urban centres, providing markets for agricultural produce. In response to these opportunities, smallholder households make numerous "incremental and intermittent investments", usually out of savings or remittance income. These investments – "developing new land, acquiring a new tool or other input, increasing the value of livestock held, planting and nurturing tree seedlings etc" – are "barely perceptible to outsiders", but explain how expanding African populations continue to be fed without resort to greatly increased imports of food, despite growing pressure on the natural resource base. According to Tiffen, policy should, therefore, create the conditions under which such investment can flourish.

NEW AND CONTINUING CHALLENGES TO AGRICULTURAL DEVELOPMENT IN SUB-SAHARAN AFRICA

26. We can identify three broad ways in which circumstances in most areas in Africa differ from those that faced the Asian green revolution areas in the latter half of the 20th century: local, global and policy challenges.

27. Local: Agro-ecosystems in sub-Saharan Africa are very varied, with a high proportion of land constrained by poor soil fertility, limited irrigation potential and erratic climatic conditions. These conditions demand a range of technological solutions across small areas. Development of infrastructure is expensive due to the low population densities in many areas, so delivery of services such as research and extension also becomes more difficult and costly. Governance and administrative capacity and systems for delivery of these and other services are also often very weak. Nevertheless, there remains huge untapped agricultural potential in some higher-

potential areas; many of the rural poor depend on foodgrains (maize, rice, sorghum, wheat and millet) that have already been extensively researched, and there is now also greater potential for local adaptation with advances in more participatory and farmer-led approaches to research and extension. Literacy rates and some measures of human health in sub-Saharan Africa have now improved so that they are broadly equivalent to those in east Asia in the 1970s (although HIV/AIDS is now reversing many of the gains).

28. Global:

- World prices for agricultural commodities have declined by more than 50% since the 1960s. Today's farmers in poor areas therefore face more adverse terms of trade, exacerbated by market liberalisation, causing local prices to fall towards world market prices. However, lower grain prices benefit poor net purchasers of food (including the majority of rural households in Africa). Few projections of world prices predict further declines – prices could rise if Northern governments reform their agricultural protection policies.
- Technological advances in agriculture are now being achieved partly through molecular biology and genetic modification, but this research is dominated by commercial interests serving commercial agriculture (Pingali and Traxler, 2002). There are risks that despite the potential for such techniques to deliver major technical advances for Africa's smallholder farmers, the opportunities will be lost and instead the new technology may place smallholders at an increasing disadvantage in global and local markets. New technologies with significant yield or nutritional improvements may be developed and smallholders can take advantage of some of the opportunities offered by new international markets. For smallholders to take advantage of these latter opportunities, however, a more favourable institutional and policy framework is needed.
- HIV/AIDS is taking an increasingly heavy toll in many sub-Saharan African countries (although in some the pandemic may have peaked). This increases the dependency ratio, leads to breakdown of family and social structures, depresses motivation for development, removes traditional skills and knowledge, eats into savings and capital, and leaves many households coping with the multiple burdens of bereavement, looking after sick relatives and caring for orphans, all with reduced labour (de Waal, 2002). It has also removed large numbers of skilled professional and technical staff from research, extension and other agricultural service agencies. However, in areas with a lower incidence of HIV/AIDS, a "demographic window of opportunity" is expected as dependency ratios decline as a result of falling fertility rates in increasingly young populations (IFAD, 2001).

*smallholders
need a more
favourable
institutional and
policy framework
to take
advantage of
technological
advances*



29. Policy: Over the last 20 years or so, a major shift in dominant policy thinking has occurred. This has involved a move away from direct state intervention towards a role for the state in providing an enabling environment for private sector and civil society, with a more stable macro-economic environment, liberalised markets, tighter fiscal regimes and a more developed institutional environment. At the same time there have been large reductions in official investment in agricultural development owing to:

- emphasis on the importance of non-farm incomes and activities in the livelihoods of the rural poor
- disillusionment with the lack of rapid agricultural growth in sub-Saharan Africa in the past, despite investments in agricultural development, together with recognition of difficulties in more marginal areas
- a perception that many of agriculture's problems lie outside the agricultural sector; in roads and telecommunications infrastructure, in health and education, and in governance
- limited prescriptions for investment in agriculture, together with doubts about the effectiveness of new models for research and extension, and concerns about recurrent costs and fiscal commitments.

*there have been
large reductions
in official
investment in
agricultural
development*

30. The wider policy changes have delivered benefits in reducing government fiscal deficits, in encouraging greater investment and production within some cash crop systems (Shepherd and Farolfi, 1999) and in reduced food prices to poor rural and urban consumers (Jayne and Jones, 1997). However, in many situations, the supply response to reform has been poor, as public

investment has declined and the private sector has not moved in to provide farmers with input, output and financial market services that are attractively priced, timely and reliable. Whether the overall situation is worse or better than it was in the immediate pre-liberalisation period is debatable, and few would argue that the pre-liberalisation situation could or should have been sustained. Some also argue that the real problem is incomplete reform, rather than reform failing to deliver (Jayne *et al.*, 2002). However, a lack of substantial improvement and continuing difficulties are widely recognised as a major constraint to improving agricultural production, particularly with input and financial service delivery and with output marketing in remoter areas.

31. The shift in policy thinking noted above was prompted by, among other things, increasing recognition of state failure in many areas of economic and other activity. One of the attractions of market liberalisation – getting the state out of areas that the private sector could undertake – was that this would be easier than reforming and reinvigorating state agencies to perform their roles better. However, as argued below, where markets are very poorly developed and general levels of economic activity low, state investments may be required to encourage complementary investment by the private sector. This more activist role for the state (as observed in the Asian rural development experience – see Box 2) once again highlights the issue of governance: the management and accountability of state agencies. Low state capacity, motivation and accountability are major weaknesses in most African countries and compare unfavourably with the situation in Asia in the latter half of the 20th century. Thus, as well as suggesting “technical” measures to stimulate smallholder agricultural growth and development in Africa, the latter part of this paper argues that strategies to confront capacity and governance issues within the agricultural sector have to be given high priority.

PRINCIPLES, POLICIES AND PRIORITY ACTIONS

32. Given the importance of smallholder agricultural growth to poverty reduction efforts in Africa, we now consider what needs to be done to promote such growth. It is worth reiterating, however, that even where the principal objective of smallholder agriculture is food security or welfare rather than growth, the basic case for public investment to support the agricultural sector remains valid.

33. Drawing on our definition of sustainable agricultural intensification (see paragraph 6), we argue that an effective smallholder agricultural growth strategy needs to address constraints at national, local and household levels, as illustrated in Figure 1. This starts at the household level and identifies what farm households need if they are to invest in more productive farming activities. Note that Figure 1 does not attempt an exhaustive list of all livelihood requirements or existing assets of farm households. The assumption is that additional investment is generally required if households are to achieve a greater return on their assets. The figure recognises the importance of both a stable macro-economic and institutional environment, but also highlights the importance of access to local-level services. The effective supply of these services itself requires a stable macro-economic environment, but it also needs active policies promoting supply capacity in the local economy. The importance of political support is vital in placing smallholder agriculture high on the agenda. This will be reflected in the emphasis given to agriculture in the PRSP process.

34. This analysis makes a broad distinction between two policy “legs”, with one set of policies focusing on stimulating and transmitting to farmers demand for their products (through removing anti-agricultural policy bias and excessive taxes), and the other focusing on development of farmers’ capacity to respond to demand. Obviously, both policy legs are needed, as farmers need the capacity to respond to effective demand. An admitted historical over-simplification is that policy in the last 40 years has involved, first, a major emphasis on supporting supply (through state provision of extension, research, input supply and credit services) and then, with structural adjustment and liberalisation, a switch to an almost exclusive emphasis on stimulation and transmission of demand. The pendulum is now shifting back, as there is increasing interest in institutional issues around market failures, but there is still reluctance to address the service delivery problems facing farmers and to make concrete investments addressing them. In what follows we also highlight the challenge of coordinating delivery of services to producers within a given production area or region.

POLICY PRINCIPLES

35. Six major policy priorities are outlined in the following section together with a summary of particular measures needed. It is not enough, however, to set out these measures: the processes of implementation are equally important (Omamo, 2003), and here seven principles need to be followed: policy implementation should be holistic, consistent, flexible, regionally integrated, allow for location-specific variation, realistic and demand-led.

36. Holistic policy implementation is needed because one of the challenges posed by the six policy priorities we propose below is their interdependence on each other and on good governance with stable macroeconomic conditions. Thus if farmers are to invest in agricultural innovations, they generally need the full set of different types of service delivery (access to technical information and financial, input and output markets), while different service providers need to be sure that other (complementary) services are being delivered. Both farmers and service providers need roads and communications infrastructure, but on the other hand significant returns on investment in roads and in higher product prices will be achieved only if farmers have access to the services they need to take advantage of improved communications and prices. This is illustrated in Figure 1 by the set of farm-household conditions required for agricultural growth. Similarly, an emphasis on local, bottom-up demand must be matched by integrated policy not only at national but also at regional and international levels. Pricing policies need

stable macro-economic and sound institutional environments and access to local level services are all crucial



the processes of implementation are as important as the measures

farmers need the full set of service provision

international action to control dumping and excessive price support in the North and they also need coordination between neighbouring countries in Africa. This requires strong and matching initiatives by regional bodies and by African and Northern governments.

37. A further challenge is that farmers and other investors (such as private traders and agribusiness) must have confidence that a favourable set of conditions will persist. This demands **consistent** and stable policies by governments and donors with long-term and transparent commitments to promoting both the demand and supply side policies needed for sustained agricultural growth.

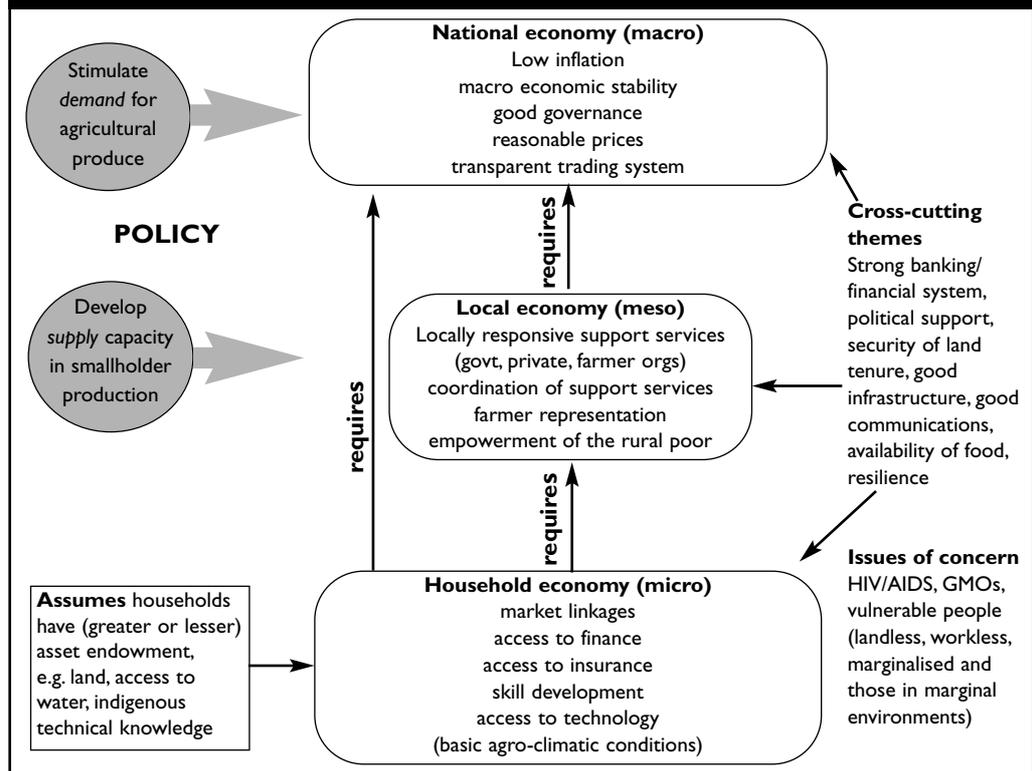
38. Policy implementation must also be **flexible**, to allow learning, innovation, improvement, and adaptation to changing conditions. This is linked to the need for variation and adaptation to match specific institutional, socio-economic and agro-ecological conditions in **different locations**. Even where we know what policy needs to achieve, there are many areas in which we do not know how to best implement such policies. Different market and technical opportunities and constraints will require different market and technical approaches and activities. An important aspect is consideration of local environmental and institutional sustainability of technical and institutional innovations. This requires a willingness to experiment with and learn from different institutional approaches to policy implementation and much greater emphasis on learning about how and why different policies work and do not work in different situations.

39. Linked to the above is the overarching principle that initiatives should be **demand-led** and based on the aspirations and knowledge of local people, with local ownership, local management, and local accountability. Failure to recognise this is one major reason for the failure of many past development models. We need to learn from these experiences.

40. We recognise that there may be some conflicts between the requirements for stability and consistency on the one hand and flexibility and adaptation on the other. However, the call for flexibility is not a call for unpredictable changes without consultation with key stakeholders. Rather, what is required is a commitment by governments and donors to persevere in a long-term and participatory (but perhaps often frustrating) learning process.

policies must be flexible to match specific local conditions

FIGURE 1. NECESSARY CONDITIONS FOR SMALLHOLDER AGRICULTURAL GROWTH



THE WAY AHEAD

BEYOND THE ENABLING ENVIRONMENT

41. Recognising the significant and valuable ongoing efforts to improve the “macro” environment in which the agricultural sector functions, we focus our arguments in this paper on four core and priority components needed to develop farmers’ supply capacity to respond to new opportunities and therefore provide the foundations for a pathway out of poverty.

- Empowered and enabled rural poor
- Access to land and water resources
- Effective and efficient front-line support services, and
- Improved and accessible rural infrastructure.

Two further priorities concern the need for:

- Reformed Northern agricultural and trade policies, and
- Assured and reasonable returns on agricultural investment and innovation.

EMPOWERED AND ENABLED RURAL POOR

42. There is widespread acknowledgement that development policy-making needs to listen and respond to the voice of the main beneficiaries of such policy. This is as true in the case of smallholder agricultural development as in other areas (see Box 5). Past efforts have often failed because they have not sufficiently recognised smallholder farmers’ interests, opportunities and constraints, or because interventions and resources have intentionally or unintentionally been diverted to serve other interest groups. Although the phrase “agriculture is the backbone of the economy” is something of a mantra for African governments, the share of government expenditure actually devoted to it is often quite small (unless costly subsidy programmes are in place). Rural households need to be empowered not only to demand that support services are delivered to them, but also to hold service providers accountable for how these services are delivered (How is money actually spent? Who benefits in practice?). This requires that farmer and other community-based organisations be given opportunities to engage with policy decision-making processes. There may also be a need for external support to develop members’ and groups’ organisational and representational effectiveness. While one of the aims of decentralisation processes is to make public agencies more responsive and accountable to citizens, there is a danger that local administrations will be “captured” by local elites, who are more experienced and better placed to influence officials. The ideal scenario for pro-poor service delivery may well be a mixture of decentralised control (to achieve local coordination) and top-down pressure to

concentrate on farmers’ supply capacity to respond to new opportunities

smallholders need to be empowered to demand that support services are delivered and to hold service providers accountable

BOX 5. ENABLING PEOPLE: PARTICIPATORY RESOURCE USE PLANNING IN ACTION IN ETHIOPIA

People in Konso in southern Ethiopia live in a challenging environment of low rainfall and recurrent droughts. Konso farmers are known for their hard work and have constructed elaborate stone terraces to conserve their valuable soil and scarce rainfall. The Konso Development Association (KDA), a community-based organisation, with FARM-Africa’s support, has developed a highly innovative approach to village-level planning for the use of natural resources. All sectors of the community are involved – women, men, young and old – in drawing a map of their agricultural, residential and community lands identifying current use and major problems. Aerial photographs are useful to support this process but not essential. The major problems are discussed and agreement reached on solutions that can be implemented by individuals, the community by itself and the community with external support. Community initiatives that require external support are developed into small projects that are eligible for credit funds or small grants from KDA, as appropriate. Small grants are given to implement community improvement projects, such as rehabilitation of degraded land or communal latrines, with all labour provided by the community. Small loans are given for income-generating enterprises such as cattle-fattening, tree nursery development etc.

In this way the real needs of the community are identified and met through its own labour combined with effectively targeted financial support. The next step is to integrate these village plans into district plans, which are resourced from regional government budgets – a simple but effective way for scarce resources to reach the grassroots.

ensure genuine participatory practices by decentralised authorities and that national poverty reduction priorities (as reflected in PRSPs) are taken into account.

ACCESS TO LAND AND WATER RESOURCES

43. Without adequate access to land and water resources, farmers cannot be expected to respond to new market opportunities. Annex Table 8 shows that, in aggregate, availability of arable land in sub-Saharan Africa, per head of population, is no worse than in other regions, although there may be issues of land quality. However, in some countries of sub-Saharan Africa, unequal access to land is already high on the political agenda. These countries need modes of redistribution that allow a much larger number of people to contribute to, and share in the benefits of, viable agribusiness enterprises, rather than destroying the value of existing assets during redistribution. Meanwhile, even in customary tenure systems, inequality in land holdings is high (Jayne *et al.*, 2003) and may warrant research into the rules and norms governing land allocation within such systems. Alternatively, policy may just have to recognise that agriculture will never provide more than subsistence requirements for a significant minority of smallholder households. In this case, agricultural development efforts should target primarily the middling and “better-off” smallholder households (nearly all of whom are still poor by most criteria), and look for other ways to assist the semi-landless, for example through the rural non-farm economy or welfare.

44. Access to, and control of, water is a largely neglected area in sub-Saharan Africa, yet water control is a prerequisite for successful agricultural intensification. Irrigation was critical to the spread of the main green revolution technologies in Asia. Annex Table 8 shows that the share of irrigated cropland in sub-Saharan Africa is tiny compared with other regions. Some African countries, such as Zambia, have huge unexploited potential for irrigation development. Elsewhere, scope for irrigation development is much lower. However, as experience in central Tanzania is showing, much can still be achieved by more modest techniques, such as rainwater harvesting (Natural Resources Systems Programme, 2002).

EFFECTIVE AND EFFICIENT FRONTLINE SUPPORT SERVICES

45. There are widespread and major gaps in agricultural service provision in most rural areas in sub-Saharan Africa, many resulting from the active withdrawal or passive decline of state agencies previously responsible for delivering these services, with varying effectiveness. Farmers located in more remote rural areas face particular problems. There is an urgent need to find effective and efficient means of delivering these services and also to establish which providers may be best able to deliver specific services in specific locations. These will vary between countries and between different types of services. However, experience from Asia, Latin America and Africa, together with an understanding of both market and state failure in service delivery, suggests that likely solutions will involve an active coordination and investment role for public agencies, in partnership with the private and NGO sectors, which in turn will require clear mechanisms for accountability both to farmers and to other stakeholders. Donors and national governments need to recognise the need both for large and sustained investments in the agricultural sector and for the building of the accountability mechanisms that will permit such investment to flow. Critical services required are discussed below.

46. Improving facilitation. A crucial area for support is the facilitation of learning and reflection amongst farmers. Sustainable intensification of agricultural production is knowledge-intensive. Greater use of water control, safe and effective use of inorganic fertilisers and chemical products, greater exploitation of organic farming techniques where appropriate, planning production in response to changing market opportunities and establishing linkages with input suppliers or produce buyers – all require access to, and understanding of, information. A fundamental change in the nature of advisory services should be the shift from simply extending messages to farmers to facilitating change. Farmers want advice not solely on production issues but also on linkages to markets and on ways of adding value. They also want access to other sources of expertise (not least their fellow farmers through organised exchange visits). They are interested in “fixers” that can help them make these linkages. A revitalisation of African extension systems is therefore necessary.



*an urgent need for
effective and
efficient service
delivery*

*advisory
services should
shift from
extending
messages to
facilitating
change*

Current evidence from many areas is that those farmers who receive extension advice appreciate it; the problem is that coverage is declining and the limited service that exists is often biased towards the better off. This is linked to the fact that extension is too often seen to be about promoting certain technology packages, which are not appropriate for many, especially poorer households. Although proving the effectiveness of advisory services is difficult, largely due to selection bias, studies that control for this (for example, Owens *et al.*, 2001) show clear benefits. Realistically, achieving greater coverage with a more participatory, farmer-led extension approach will require a greater focus on farmer groups and umbrella organisations of farmer groups, maximising the involvement of other stakeholders such as local traders, private vets and commercial farmers.

greater coverage with a more participatory, farmer-led extension approach is required

A new cadre of skilled fieldworkers is required to deliver this facilitating advisory role, demanding increased investment in their training (see Box 6). Greater emphasis needs to be placed on responding to farmers' needs and empowering farmers and their community-based organisations to take wise decisions, appropriate to their local conditions and building on their local knowledge. Successful local models do exist, particularly where NGOs have intervened to develop such partnership approaches, but investment is needed to adapt and implement these innovations on a larger scale. Where HIV/AIDS has had a profound effect on the structure of rural society, the resulting heterogeneity amongst households within a given area, in terms of their relative endowments of labour, land and capital, reinforces the argument that extension advice and facilitation should not seek to be over-prescriptive.

A new cadre of skilled fieldworkers is required

BOX 6. FACILITATION: THE MERU GOAT BREEDERS ASSOCIATION

The Meru Goat Breeders Association (MGBA) was formed by over 70 farmer groups to assist them in managing the breeding of dairy goats in two districts in the Eastern Province of Kenya. Farmer groups are made up of about 20–25 households, often female-headed and embracing the poorest members of society, including casual labourers who have had little previous access to formal education. Since its establishment in 2000, the MGBA has built up its membership and established a regularly elected management committee. FARM-Africa has supported this capacity-building process and trained local Ministry of Rural Development extension staff so that they can continue to support the Association after FARM-Africa has completed its work. Running costs are covered by the fees that the MGBA charges for its services, including breeding stock registration, marketing and technical advice.

Such is the demand for improved dairy goat stock that the MGBA has facilitated marketing of animals to 32 districts with a breeding programme that now benefits over 30,000 people. As well as its current services, the Association is looking at ways of improving the marketing of livestock and adding value to the goat milk that members produce through processing and marketing to urban markets, such as Nairobi. Important factors in ensuring the MGBA's sustainability include strong links and accountability to the members, a clearly defined role based on members' priorities, a balanced cost structure that does not exceed the likely sources of income and appropriate support and regulation from local government. The MGBA approach has recently been extended to eastern Uganda, where goat milk is seen in areas severely affected by HIV/AIDS as an important factor in improving nutrition for AIDS orphans and others affected by the virus.

47. Supporting innovation. There exists a large body of literature documenting the high returns to public sector agricultural research in developing countries, including Africa (Alston *et al.*, 2000; Townsend and Thirtle, 2001; Thirtle *et al.*, 2003). In sub-Saharan Africa, basic yield-enhancing technologies are available for most crops but further research is needed to adapt them to local conditions, ensuring that they are economically and environmentally sustainable. The best way to achieve this is through farmer-led research, because when farmers are involved in setting the research agenda, monitoring and evaluating different technologies or crop varieties, uptake is likely to follow. Farmers have their own criteria for assessing crop performance, often looking to minimise risk rather than simply maximise yields. Much externally driven research has resulted in technologies that are not suitable for smallholder farmers, as they have been developed without consultation with farmers. Many farmers are natural innovators, experimenting in their own fields and observing the results. What they need is support in this process and access to new ideas and crop varieties with which to move forward. It is essential that research institutions work in partnership with small-scale farmers if their work is to lead to affordable and applicable solutions to production increases. This should happen at all stages in

yield-enhancing technologies are available

the process from defining priorities to assessing results. The farmer field schools approach to cocoa production in West Africa and exploring integrated pest management solutions to pest control in East Africa are examples. This is also one way to address the key issue of scaling-up once applicable innovations have been identified. Facilitation skills are an essential part of supporting and spreading innovation.

Further work is needed in key areas such as improved natural resource management, more intensive low external input systems, crop-livestock integration and livestock husbandry. There is a clear need to improve the scientific understanding of improving soil fertility and productivity through the organic approach. At the same time, the biotechnology revolution creates opportunities for adapting crop varieties to cope with the particular problems faced by poor farmers in poor areas, such as drought or specific tropical pests and diseases. However, genetic modification (GM) technologies bring many contentious issues, which must be recognised and addressed if farmers are to benefit. The development of technologies that are applicable and accessible to the poor should be the critical element of any new research. The HIV crisis also exposes the need for research into technologies that both save labour where economically-active adults have been lost and enhance the nutritive value of production so that those directly affected can fight the disease, resume productive lives and regain positions of dignity in their communities.

48. Promoting access to financial services and input supplies. Lack of capital is a feature of poverty, and the poor generally lack both saving and borrowing opportunities. However, while micro-finance institutions have taken financial services to millions of previously unbankable clients, they have largely failed to reach poorer rural areas and/or smallholder agricultural producers whose livelihoods are characterised by highly seasonal investments, risks, and returns (Dorward *et al.*, 1998; Morduch, 1999). Government provision of seasonal agricultural credit had significant impact in successful green revolutions in Asia and in Africa, but high costs, poor recovery records and the failure to provide savings services have led to its abandonment. Agricultural finance services need to be revisited with the benefits of new experience from micro-finance and new insights into the development contributions and structural features of the more successful large-scale service providers in the past – one of these being the “interlocking” of finance with other transactions (for example, input and output transactions). Again, this may require substantial subsidies for start-up and operations. In addition, the risks associated with borrowing in rain-fed African production conditions, with the additional risks associated with the impacts of HIV/AIDS, plus the high value of seasonal production inputs relative to the total asset base of poor households, mean that seasonal finance services may need to be backed up by some form of crop and livestock insurance. In many areas, an emphasis on rural finance, rather than exclusively agricultural finance, is also warranted. Success stories are limited (Box 7 provides one), so more research is clearly needed, exploring systemic insurance (insuring lenders) as well as insurance for individual borrowers, and learning lessons from informal moneylenders, who tend to deal with genuinely bad times primarily by flexibility in loan collection. It should also be acknowledged here that the promotion of both organic and inorganic technologies should allow producers with different asset and income levels to choose the intensification path that is most consistent with their ability to bear financial risk.

That private input supply systems in Africa are underdeveloped is widely agreed (see Annex Table 8 for evidence of low input use in African agriculture); why this is the case is more contested. Some highlight the low profitability of input use, in turn related to the removal of subsidies and the high cost of transport, and/or government interference discouraging private investment; others suggest that failure in credit markets restricts effective demand (see Food Policy special issue 27:4, 2003). One thing at least is agreed: greater response from private input suppliers depends on complementary investment elsewhere, often of a public good nature, for example in roads and extension. Support services can also encourage the development of input services by farmer organisations (see Box 8).

*research must
adapt to changing
realities including
GM technologies
and HIV/AIDS*



*agricultural
finance services
need to note
lessons from
micro-finance*

BOX 7. FINANCIAL SERVICES: RURAL MICRO-FINANCE

Working across five different locations in rural Ethiopia, FARM-Africa supported the establishment of a network of 137 women's groups. The groups formed around the concept of increasing their income and assets through ownership of goats. The initial credit concept is an in-kind system, where breeding animals are provided to the women of carefully selected poor, usually female-headed households and offspring are then paid back to the group so that new members can receive further goat loans. Group members quickly took advantage of the fact that, with an increased asset endowment in the form of small livestock and improved business development skills provided by the project, they could establish a revolving fund to provide microcredit to diversify their sources of income. As each group member had paid a small insurance deposit for their animals, these together with group savings are used to set up bank accounts. FARM-Africa then provides a matching grant of Birr 700 to Birr 4,500 per group (£60 to £375).

Credit schemes are operated by advancing loans to group members to undertake various commercial activities. Groups have chosen different methods of doing this; some divided all available funds between all members, others provided larger loans to a few members at a time in rotation. Loan durations have commonly varied from 3-6 months with loan amounts between Birr 50 and Birr 200. Interest rates have typically been 10% for the loan period. Some groups insisted on full repayment of all loans before the next round is undertaken, while others did not. Peer pressure within groups then helps to ensure full repayment while administration and tracking of funds is simplified.

A recent study (Hendy, 2002) has shown that the use of loans has varied between locations. Throughout all zones, trading of local agricultural commodities has been the most common activity. This has been conducted either by purchasing commodities in farming areas and transporting to markets, or by buying and selling within markets (splitting bulk purchases for retail marketing). Commodities traded in these ways have included grains, coffee, vegetables, ghee, sugar cane, chillies, hops, honey, chat and livestock. In some cases, sorting and grading of crop produce has provided additional added value (for example chillies). Other activities have included growing short-duration crops such as vegetables, fattening sheep or goats, spinning and weaving cloth, brewing beer and distilling spirit. Almost all women claim to have made profits (commonly 50-100% of the loan) from the activities they have carried out. No women admitted making losses and there has been 100% repayment of loans and interest in most cases. Where women have had repayment difficulties, repayment periods have been extended and loans generally repaid in the extra time. Profits have usually been greatest from crop commodity trading and least from livestock trading or fattening (with greater risks and seasonal constraints).

17

BOX 8. INPUT SUPPLIES: SEED MULTIPLICATION

Even when harvests are good, farmers in rural Zambia struggle to find good seed that can be recycled, at the right price and at the right time. After difficult seasons, poor access to seed is a major factor that limits farmers' recovery in subsequent years.

To give farmers control over their seed inputs, Keepers Zambia Foundation has been developing a community seed security programme. Farmers' groups decide on the crops and varieties to be multiplied and select individuals to be trained as certified seed growers. Training is carried out together with the Zambian Seed Control and Certification Institute (SCCI) and covers basic seed production techniques. Seed growers must then register and procure "basic" seed from government research stations. The growing crop must be inspected and when ready, samples of seed are taken for testing. Individual growers are then issued with certificates that give the purity and germination level of their seed. The seed is treated and packaged into 5kg bags. This is enough to plant 1 lima or 1/4ha.

As well as improving the availability of good seed in rural areas, this initiative is also proving to be a valuable income-generating activity for the farmers. Through its different partner organisations, Harvest Help has trained over 100 certified seed growers across Zambia since 2000. These include Gilbert Kaliki, a farmer in Kaoma, who produced 240 x 5kg bags of certified maize in 2003, giving him a net profit of over £400. In the same area, Christine Mutumwenu multiplied sorghum and another farmer, Eric Muliana, produced sorghum, sunflower and groundnuts. Farmers who multiplied seed quickly sold it all, meeting a real demand as well as realising tangible economic and material benefits. This shows the technical capacity that farmers have, and the next step is to facilitate independent seed growers associations that will manage all stages of the process without external support.

smallholders are likely to provide the quantity, reliability and quality of produce only by operating in groups

more direct intervention is needed where thin markets, poor access to capital, and high trading risks exist



producers need to access all or most support services on a regular basis

49. Building linkages (to markets and service providers). The extent to which market access for smallholder producers has improved with market liberalisation varies across crops and regions. Though new opportunities have certainly emerged for many producers, markets are widely seen as less predictable than before. Even in more accessible areas, producers want some assurance that they will be able to sell what they produce (particularly if they aim to produce well in excess of what they can consume themselves, store or sell locally) and that they will obtain a remunerative price for it. Typically, smallholder producers are well-informed about their local markets, but much less well informed about markets even a little further afield, where often the more lucrative opportunities are to be found. To respond to these opportunities producers need to understand not just which crops are likely to be in demand, but also what quality attributes are particularly important, to whom they can sell, and when. The importance of good market information has long been understood (Shepherd, 1997) and the advent of mobile phones, text messaging and the internet, plus the spread of local FM radio, greatly increases the chances that public market information systems can deliver useful information in a sufficiently timely manner. RUSEP in Nigeria (www.rusep.org) and Foodnet in Uganda (www.cgiar.foodnet.org) provide examples of good practice in this area. However, informal African markets also still rely heavily on personal relationships and trust, while market “outsiders”, such as newly commercialising farmers, are vulnerable to exploitation by established trader networks. To overcome this, farmers may need someone to assist them in building linkages with existing market players. Negotiated supply relationships can provide producers with the security of access to the high value market channels that they desire. However, only if they operate in groups are smallholders likely to be able to provide the quantity, reliability and quality of produce that would be of interest to most traders. Once in a supply relationship, they may also require occasional arbitration assistance, not least because the demands of such a relationship are likely to take some time to get used to. Finally, while output buying is generally best left to the private sector, more direct financial and market intervention may be needed where traders face thin markets, high costs of and poor access to working capital, and significant trading risks. This was an important feature of the Asian green revolutions, where governments generally ensured that farmers had access to input and output markets, either by offering private traders inducements to purchase produce from more remote areas, or by operating such markets themselves.

50. Coordinating services. The argument of this paper is not just that these services need to be provided in order to support smallholder agricultural intensification, but that their provision needs to be *coordinated*. By this we mean that an individual producer household needs to be able to access all or most of these services on a regular basis if they are to respond to market opportunities for intensified production. It is no use having an extension initiative focused in one district and market information being piloted in a neighbouring district, while a rural finance project is setting up in yet another district. There are interdependencies between the different services. However, these are important not only for farmers, but also for service providers. For example, effective demand for purchased inputs will be higher where seasonal finance is available and farmers have access to relevant research and market information; loan repayment will be higher where there are reliable links to higher-value output marketing channels; and research will have greater impact where there is a strong extension system to promote its findings and private input suppliers have the capacity to take risks in stocking varieties that perform well but are relatively unfamiliar to local farmers. There are undoubtedly large challenges involved in delivering each of the services described above and coordinating this provision may be seen as an additional challenge. However, securing coordination of service provision may actually make the challenge of delivering individual services easier, because the returns are more secure. Many poor rural economies can be characterised as being caught in a “low level equilibrium trap” (Dorward and Kydd, 2003), and thus, by definition, require coordinated action in order to move to a new equilibrium characterised by higher levels of productive activity. We see coordination as being required at two levels.

- The first level is coordinating individual households’ access to the whole range of services. In some cash crop systems, output buyers provide all the services to individual producers

on an interlocked basis. However, where interlocking does not occur, information and other transaction costs make it uneconomic for most smallholder households to deal individually with multiple service providers (and vice versa). Therefore, sustainable access to services by large numbers of agricultural households is likely to be achieved only through the activities of *farmer organisations*. Farmer organisations have enormous potential to serve the collective interests of otherwise marginalised farmers, reducing the costs of service delivery to farmers, and increasing farmers' choice, information, skills, incomes, voice and welfare. Service providers also benefit from lower costs of service delivery through larger transactions, improved information and trust, and increased and increasingly reliable demand for their services. The development of farmer organisations should thus be promoted as a high priority. They are not, however, a panacea. They can easily be diverted to serve the ends of a few influential people and fail, unless they can draw on the necessary skills and resources and develop the necessary accountability mechanisms, to provide valued services for members. This may in turn require sensitive, patient and skilled outside support.

- The second level is that of the locality (district or region). Where farmer associations grow large and strong enough, they may either deliver services to members themselves or may be able to attract private and/or state service providers to work in their areas of operation. However, at least until this time, it is likely that the activities of farmer organisations as gateways through which producers access support services will have to be complemented by locality-specific coordination activities that ensure that the range of services are made available within an area. The essence of this coordination activity is the establishment of linkages between input suppliers, financiers, output buyers and public service providers (extension, research), so that each can invest in the area, confident that the complementary services that farmers need to make profitable use of their service are indeed available. Moreover, the nature of the individual investments can reflect the nature of the complementary services that are also to be supplied. Such coordination activity may be performed by NGOs or area-based development projects, although these tend to have a finite funding period. An emerging alternative may be to embed this coordination role within decentralised development planning processes.

coordination establishes linkages between service providers so that each can invest confident that complementary services are available



IMPROVED AND ACCESSIBLE RURAL INFRASTRUCTURE

51. Rural Africa is generally poorly served by roads, telecommunications and physical market facilities. Infrastructural investment in the past has often not been effective due to inappropriate siting and/or design, lack of maintenance and lack of complementary development facilitating beneficial use of infrastructure. However, improved infrastructure is critical for expanding the range of market opportunities open to producers, improving linkages between producers and traders, reducing both input and support service delivery costs. This is increasingly recognised and rural roads have been one part of the rural economy that has (rightly) received substantial investment in recent years. Emphasis on appropriate low-cost technologies (such as bicycles, radios, and animal power) and community involvement need to be expanded and extended to include other types of rural infrastructure. Priority should therefore be given to increased investment and improved local management and cost-sharing in:

- construction/upgrading of rural feeder roads
- low-cost road maintenance
- accessible communications systems (mobile phones, IT)
- market infrastructure (storage, stalls, sanitation).

improved infrastructure is critical to access market opportunities, improve producer-trader linkages, reduce input and service delivery costs

52. Even with progress on these foundations, however, current market liberalisation policies to stimulate effective demand to farmers may not provide them (or private sector service providers) with sufficiently reliable and favourable returns to justify the investments and risks needed for widespread agricultural growth. We thus also consider the need for:

- reformed Northern agricultural and trade policies
- assured and reasonable returns to agricultural innovation and investment.

fairness and protection for African smallholders

REFORMED NORTHERN AGRICULTURAL AND TRADE POLICIES

*continued pressure
is needed on
developed
countries to
reform their
protectionist
policies*

53. Reform of current policies protecting agriculture in the North and depressing world prices has recently come under the global spotlight, and rightly so. US (and others') subsidies on cotton production are particularly damaging to a number of African countries, which have demonstrated their ability to compete on world markets. In many other crops, however, the story is more complex. In sugar and several cash crops the benefits to African nations from higher world prices could be offset by the reduction in privileged, quota-based access to major developed country markets. In grains, artificially low world prices keep food prices down for poor urban and rural deficit households, albeit at the cost of undermining both longer-term efforts by countries to feed themselves (in an area where they should have comparative advantage) and the poverty-reducing multipliers from the associated growth. Here higher world prices would be beneficial to African countries only if combined with renewed efforts to support domestic production activity (together with safety nets to protect the poor against higher food prices). Continued pressure is, nevertheless, needed on industrialised countries to fulfil the Doha commitments for a fair trade system, with both reform of protectionist policies in the North and recognition that developing countries should receive differential treatment to allow policies supporting agricultural development. Support for capacity building is also needed to help African countries improve their negotiating power in bodies such as the World Trade Organization. At the same time, the emphasis of this paper is on the fact that higher prices alone are not enough. Significant investment is also needed to enable smallholder producers to respond to the new opportunities created by higher prices.

*there is a case
for local price
support in low-
potential areas*

ASSURED AND REASONABLE RETURNS TO AGRICULTURAL INVESTMENT AND INNOVATION

54. Before they invest in a crop, producers would like some assurance that they will obtain a minimum, remunerative price. The issue of low world prices, reducing domestic prices for many crops, has been covered above. At the time of the Asian green revolutions, world prices for all major agricultural commodities were much higher than they are today. In higher-potential agricultural areas in Africa, producers can generally still produce and market a range of crops at a profit (if not a huge one). In liberalised markets, however, production of key crops (such as maize) is becoming regionally more specialised, meaning that profitable opportunities are not always in the crops that producers have been traditionally used to growing. Staple production is unlikely to disappear from farmers' cropping systems, particularly while food prices are so unstable, but in many areas grains will be produced only to satisfy (a proportion of) home food needs. In lower-potential or remoter areas, however, the range of crops that can be sold at a profit is much more restricted. There is a case for local price support in these areas, but there are significant problems with price supports and subsidies as regards difficulties in controlling their cost, in cross-border leakages, in their administration, and in withdrawing them once they have achieved their purpose. Unfortunately, few viable alternatives have yet been advanced for the development of Africa's lower potential or remoter areas and the alternative to supporting agriculture in these areas may be equally expensive, but less developmentally beneficial, welfare support.

55. Aside from the issue of average prices, crop prices are also subject to considerable fluctuation, both within and across seasons. These can be damaging both to producers and to poor consumers, for whom a large share of total expenditure goes on staple foods. Particularly in landlocked countries, where the wide gap between import and export parity price permits large price fluctuations to occur, there is thus a case for some form of intervention to keep prices within reasonable limits. As with price support, price stabilisation is also problematic, as it requires market interventions and either governments holding stocks between years, or willingness to export surpluses at a loss. Advances such as warehouse receipt systems can reduce the amount of government infrastructure necessary to administer price stabilisation policies. However, the real challenge is to keep the stabilisation authority free of opportunistic interference by politicians and to hold it accountable for delivering a given degree of price stabilisation as efficiently as possible. An arrangement similar to the independent Bank of England's mandate on inflation may be worth exploring here.

*intervention to
keep price
fluctuations within
reasonable limits*

GOVERNANCE

ROLE AND PERFORMANCE OF MINISTRIES OF AGRICULTURE

56. In this paper we have suggested that even in an era of liberalised agricultural markets there is a vital role for the state in promoting poverty-alleviating agricultural growth. We have highlighted the importance of support services with a strong public good element (research, extension, provision of market information), the coordination of these services with others (input supply, financial services, produce marketing) that may be more appropriately undertaken by private agents, the desirability of price stabilisation activities in some situations, and the importance of improving the physical infrastructure in rural areas. All but the last of these suggest a role for the national ministry of agriculture. Unfortunately, in many African countries the ministry of agriculture is currently not up to the task. Lack of resources may be a genuine problem, but a greater impediment to good performance is often the fact that the ministry is viewed by top politicians more as a means of distributing patronage than of delivering development. Hence, it is not held accountable from above for its performance in service delivery, while accountability from below is resisted. Uncoordinated agricultural development assistance from major donors, in contrast to emerging practice in the spheres of health and education, may perpetuate poor performance (Cooksey, 2003). If poverty-alleviating agricultural growth is to occur, greater attention is needed to the role and performance of national ministries of agriculture.

57. Another area where attention is badly needed is in the planning and implementation of rural development strategies. In the introduction to this paper, we observed that the importance accorded to the agricultural sector in PRSPs rarely translates into hard money within national budgets. Moreover, even where some sound agricultural policies exist, rarely is there a coherent rural development strategy or an implementation strategy to turn words into action, or against which performance can be measured.

58. We suggest that both reform of the national ministry of agriculture and the preparation of a coherent rural development strategy and implementation plan are, in most countries of sub-Saharan Africa, prerequisites for large additional investments in the agricultural sector. While one can identify areas where expenditure could usefully be increased almost immediately in many cases (such as in supporting the development of farmer organisations, in re-training and resourcing frontline extension staff and in improving rural roads), larger investments should be made in the context of a coherent rural development strategy where public and other agencies can be held accountable for their use of funds. Preparation of such a strategy should ideally involve all major stakeholders in the agricultural and non-farm rural sectors (public, private, NGOs and community-based organisations). Moreover, implementation strategies should be developed at decentralised level to ensure coordination of service provision on the ground and to provide performance criteria against which local agencies can be held to account. Given the complementarity of public and private investments in service provision and the need for coordination of services at local level (see paragraph 50), a local implementation strategy, developed in consultation with a range of local stakeholders, may also help to “leverage in” private sector investment to complement the planned public activity.

59. Local strategies also offer donors the opportunity to invest in African agriculture without having to work exclusively through national government agencies. Donors may choose to support a particular local development plan directly – where they are convinced of the soundness of the plan, the degree of stakeholder participation and the mechanisms for accountability. Alternatively, they could contribute to responsive funds, which in turn could receive funding proposals from a range of actors committed to a particular local plan. Box 9 gives an example of how this could work. Such decentralised funding mechanisms could generate a degree of healthy competition between decentralised administrative units, reinforcing the incentives for performance and accountability that participatory planning and the reform of ministries of agriculture should deliver.

reform of ministries of agriculture is a precondition for a more active development role

rural development strategies and implementation plans – national and local – should provide a context for increased investment by both donors and the private sector

BOX 9. AN INNOVATIVE FUNDING MODEL: THE MAENDELEO AGRICULTURAL TECHNOLOGY FUND

The Maendeleo Agricultural Technology Fund is a new, competitive, small grant fund set up in 2002 by the Gatsby Charitable Foundation and the Rockefeller Foundation. Managed by FARM-Africa, the Fund supports projects that disseminate innovative agricultural technologies through innovative partnerships using innovative dissemination techniques. The Fund covers Kenya, Uganda and Tanzania. The annual call for proposals typically receives over 500 applications, which are screened by an independent advisory panel of African scientists and development professionals. The top 30 projects are selected and applicants invited to submit a full proposal with 20-25 projects currently able to be funded at £30,000 to £60,000 over two years. Projects funded during the first and second calls were recently reviewed and over 80% were considered "successful". Many different organisations, working in partnership, have been funded, including farmers' organisations, local and international NGOs, national and international research organisations, companies and private consultants.

The overwhelming number of applications to the Maendeleo Fund indicates the vast unmet need for resources from organisations working at the grassroots in Africa. The Fund offers an effective mechanism for targeting resources to the grassroots.

CONCLUSIONS

60. The fact that one in every five people still lives in absolute poverty is totally unacceptable. Whilst this is clearly recognised, at present the international community is not on target to meet the Millennium Development Goals on poverty reduction by 2015. Major efforts are required that impact on rural poverty, especially in sub-Saharan Africa.

61. Poverty reduction during the latter part of the last century, principally in Asia, was associated with initial agricultural sector development, including increased productivity, higher incomes, falling real food prices and rising agricultural wage rates. The impact on poverty reduction was further enhanced where broad-based agricultural growth, based on smallholder production, created the conditions for expansion in manufacturing and services. Smallholder agriculture can still provide the drivers for economic growth and poverty relief in Africa today. Indeed, not only is it the best option, it may be the only option that can provide these necessary pro-poor drivers.

62. In order to increase progress in meeting the Millennium Development Goals, agriculture must have an increased profile in development policy leading to much higher levels of direct investment in the sector. At the micro level a variety of government, NGO and local initiatives have demonstrated that agricultural pathways out of poverty are possible in Africa, but greater investment is needed to scale-up these successes to impact on poverty reduction at the national level. This paper advocates targeting investment at the meso-level to create and develop the enabling institutional environment that allows smallholders to increase production and supply the expanding markets. Crucial elements of this enabling environment include the provision of coordinated support services such as credit, input supplies, technical support, access to information, access to markets and market services.

63. Smallholders are also more likely to succeed if they operate in an environment in which their voice is more widely heard, where a fair trading system exists, rural infrastructure is improved and they are provided with incentives and protection to allow innovation. These conditions provide the crucial support for the success of a poverty-reducing, equity-enhancing smallholder agricultural growth strategy. Clearly, support for smallholder agriculture cannot succeed in isolation and must be complemented with basic investments in education, health and good governance, together with facilitation of non-farm activities acting as supporters to spread growth benefits within rural societies. However, it is agriculture that is best placed to provide the initial kick-start to self-sustaining growth and poverty reduction.

64. This paper has argued that despite its difficulties, smallholder agricultural growth offers for much of sub-Saharan Africa the best option for initiating the sustained poverty-reducing growth that its people so desperately need. Analysis of these options, with lessons from successes and failures in Africa and in Asia, sets out a clear set of policies required to stimulate both demand and supply in the smallholder agriculture sector. International donors, multilateral agencies, regional organisations in Africa and African governments need to move forward with a clear commitment to pro-poor agricultural development and to the implementation of these policies. There are opportunities for donors and governments to address the problems currently constraining smallholder agriculture in Africa and these opportunities must be grasped, urgently. This course of action is not without major challenges, as it requires substantial long-term political and financial commitment while grappling with new problems. However, unless commitments are made to address these problems, the prospects for the African poor remain bleak.

CALL TO ACTION

DFID (and other bi/multilateral donors)

- **Increase the percentage of the aid budget spent on agriculture** to reverse the recent decline in agriculture's share. The increase should be based on a long-term vision and commitment of resources and should be phased in as the environment for investment in recipient countries is improved. One objective of support to the public sector should be to create a more attractive and predictable environment for investment by the private sector.
- Ensure a balance of **support** between national governments on the one hand and civil society organisations such as **community-based and farmers organisations and NGOs** on the other. While renewed attention needs to be given to service provision by the public sector, civil society organisations have a vital role to play in articulating a vision for rural life that can underpin policy, articulating the demands of rural communities, holding public agencies accountable for their performance and developing innovative approaches to service provision themselves.
- Ensure that concern for international trade issues does not distract attention from **local and regional markets**, which are currently more important than international markets for the majority of Africa's poor people.
- Explore **new approaches to rural livelihoods support** by funding experimental programmes to develop evidence-based policy and practice through:
 - **innovative partnerships** for coordinated service delivery to rural households, and
 - **innovative (accountable, decentralised) funding mechanisms** (recognising the real costs of delivering resources to the grassroots).
- Together with ministries of agriculture, engage with **ministries of finance to make the case for investment in the smallholder agricultural sector**.
- Together with NGOs, **encourage innovative, farmer-led initiatives, strengthening the voice of smallholder farmers and herders** and empowering them to influence policy through effective farmer participation in appropriate local and national fora.
- **DFID should use its influence with other donors** to encourage them to re-engage in natural resource development in an appropriate and coordinated manner with a long-term commitment.

AFRICAN GOVERNMENTS

- **Increase the percentage of public expenditure** allocated to support for agriculture to reflect agriculture's importance to the national economy and its profile in national Poverty Reduction Strategy Papers (PRSPs).
- Where PRSPs give agriculture a high profile, develop **an effective agriculture strategy** that sets out **implementation procedures involving all stakeholders**, including those at regional/district levels.

- **Reform ministries of agriculture** so they
 - are performance driven
 - have sufficient operating costs to enable staff to work effectively
 - are able to work in partnership with a range of organisations
 - are more accountable to other stakeholders in the agricultural sector.

- It is essential to expand local capacity to **train/re-train frontline workers** to improve their community facilitation and empowerment skills, encourage local innovation and adopt a “client-orientated” approach.

- Support local **agricultural research capacity** to work on the priority needs of smallholder farmers and **invest in disseminating existing research results**.

- **Focus rural infrastructure development** so that it improves rural markets and supports private sector development.

- **Consider if and how agricultural commodity prices might be stabilised** to reduce the vulnerability of smallholder producers to price fluctuations.

UN organisations

- Transform the **World Food Programme to operate with a development-orientated use of food aid**.

- **Transform the Food and Agriculture Organization** to focus on monitoring global trends, facilitate the development of global best practice and international lesson-learning, including in policy development.

NEPAD (New Partnership for Africa’s Development)

- **Capture examples of good policy and practice and facilitate lesson-learning** among member states.

ANNEX TABLES

ANNEX TABLE 1. POVERTY BY REGION						
	Millions in extreme poverty		Projection	People living on less than US\$1 per day		Projection
	Living on less than US \$1 per day		2015	% of population		2015
Region	1990	1999		1990	1999	
East Asia & Pacific	486	279	80	30.5	15.6	3.9
Europe & Central Asia	6	24	7	1.4	5.1	1.4
Latin America & Caribbean	48	57	47	11.0	11.1	7.5
Middle East & North Africa	5	6	8	2.1	2.2	2.1
South Asia	506	488	264	45	36.6	15.7
Sub-Saharan Africa	241	315	404	47.4	49.0	46.0

Source: World Development Indicators (2003)

ANNEX TABLE 2. PREVALENCE OF UNDER-NOURISHMENT BY REGION		
	% of the population	
Region	1992	2000
East Asia & Pacific	18	12
Europe & Central Asia		
Latin America & Caribbean	15	13
Middle East & North Africa	8	10
South Asia	27	26
Sub-Saharan Africa	31	33

Source: World Development Indicators (2000, 2003)

ANNEX TABLE 3. DEVELOPMENT AID BY REGION				
	Net official development assistance or official aid		Per capita aid	
			US\$	
Region	1996	2001	1996	2001
East Asia & Pacific	8040	7394	5	4
Europe & Central Asia	8670	9783	18	21
Latin America & Caribbean	7446	5992	15	11
Middle East & North Africa	5956	4838	22	16
South Asia	5169	5871	4	4
Sub-Saharan Africa	16552	13933	28	21

Source: World Development Indicators from OECD/DAC data (2000, 2003)

ANNEX TABLE 4. SECTORAL BREAKDOWN OF UNITED STATES AID

Sector	Total US Official Development Aid by Sector (%)
Emergency	26
Multi-sector	20
Institutional	16
Infrastructure	15
Social	13
Other	8
Agriculture	2

Source: Masters 2001 in USAID (2002)

ANNEX TABLE 5. AGRICULTURAL RESEARCH AND DEVELOPMENT EXPENDITURE

Region	Research Intensity Ratio: expenditure per economically active member of agricultural population (1993 international dollars)		
	1976	1985	1995
Sub-Saharan Africa	11.3	10.6	9.4
Asia (excluding China)	3.8	6.1	10.2
Latin America	26.0	36.0	45.9
Developed Countries	238.5	371.0	594.1

Source: Pardey and Beintema (2001) in USAID (2002)

ANNEX TABLE 6. IMPACT ON POVERTY OF SECTORAL GROWTH

A 1% increase in	leads to increases in the incomes of the poorest quintile of (%)
Agricultural GDP	1.61
Manufacturing GDP	1.16
Service sector GDP	0.79

Source: Gallup *et al.* (1997)

ANNEX TABLE 7. AGRICULTURAL OUTPUT AND PRODUCTIVITY BY REGION

	Crop Production Index		Food Production Index		Livestock Production Index		Cereal Yield		Agricultural Productivity	
	1989-91=100		1989-91=100		1989-91=100		Kg per hectare		Ag value added per worker us \$ 1995	
Regions*	1979/81	1999/01	1979/81	1999/01	1979/81	1999/01	1979/81	1999/01	1979/81	1999/01
EA & P	68.5	136.9	63.4	159.7	47.9	202.7	2034	2978		
E & CA							2854	2388		2049
LA & C	80.3	125.9	78.3	133.0	79.8	133.4	1842	2545	2209	3680
ME & NA	66.0	128.2	64.8	132.2	64.1	137.9	965	1595		
SA	71.9	122.8	69.6	127.1	64.0	137.1	1510	2182	284	568
SSA	75.4	129.4	78.3	125.8	84.1	114.9	895	1188	421	675

Source: World Development Indicators (2003)

* Abbreviations correspond to regions in Table I

ANNEX TABLE 8. AGRICULTURAL INPUTS IN LOW- AND MIDDLE INCOME COUNTRIES, BY REGION

	Arable Land		Irrigated Land		Fertiliser Consumption		Tractors	
	Hectare per capita		% of cropland		Hundreds of grams per hectare of arable land		Number per 1,000 agricultural workers	
Region	1979/81	1998/00	1979/81	1998/00	1979/81	1998/00	1979/81	1998/00
EA & P	0.12	0.11	36.5	38.1	1117	2346	2	2
E & CA	0.16	0.57	10.6	10.7	1445	339	67	101
LA & C	0.32	0.26	11.8	13.9	587	895	25	36
ME & NA	0.29	0.19	25.8	37.3	422	787	12	24
SA	0.23	0.15	28.7	39.9	360	1065	2	5
SSA	0.32	0.24	4.0	4.2	158	130	3	1

Source: World Development Indicators (2003)

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FARM-Africa (Food and Agricultural Research Management-Africa) is an international non-governmental organisation, established in 1985, that aims to reduce poverty through developing innovative approaches to natural resource management in Africa, working in partnership with small-scale farmers and herders in Ethiopia, Kenya, South Africa, Tanzania and Uganda.

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Established in 1985, Harvest Help provides practical support to rural communities in southern Africa, helping them to improve their livelihoods through sustainable farming and increased self-reliance. Harvest Help's vision is a world in which rural communities, especially in southern Africa, are free from poverty and insecurity and have the skills and resources to improve their own livelihoods.

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The Centre for Development and Poverty Reduction conducts research into economic, social, institutional, environmental and technological issues affecting poorer countries and the livelihoods of poor people within them. Working with other departments in Imperial College, staff have particular interests in the development and implementation of policies and technologies for sustained improvement of the livelihoods and economies of rural communities in Africa, Asia and Latin America.

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