



THE FUTURE OF SMALL FARMS: SYNTHESIS PAPER¹

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EXECUTIVE SUMMARY

This paper addresses the question: Do small farms have a future in the developing world? The case for rural development is easy to make: the large majority of the poor live in the rural areas of the developing world. Even with urbanisation, this will not change for at least another 20 years. Although some of the rural poor may be helped by transfers from cities, for most any improvement in their incomes will depend on generating more and better jobs in rural areas.

Agriculture is likely to be central to rural development and rural poverty alleviation. Farming has a high potential to create jobs, to increase returns to the assets that the poor possess — their labour and in some cases their land, and to push down the price of food staples — important when so many of the poor are net buyers of food. Historically, few countries have industrialised successfully without a prior development of their agriculture. Recent comparisons made across countries show that increases in agricultural productivity are closely related to poverty reduction. In most rural areas, moreover, there are few alternatives to farming as a large-scale source of jobs. The opportunities for mining and tourism are restricted to locations with mineral deposits or natural assets; while rural manufacturing finds it difficult to compete with urban factories.

Nevertheless, some changes seen in the last quarter century make agricultural development more difficult than before. The prices of most commodities have fallen on world markets. The better opportunities for green revolution packages of improved seeds and fertiliser have been taken up, while there are doubts about the ability of research to provide major technical advances. In some areas soil fertility has been lost, water tables are falling, and climate change may mean increasingly adverse weather. Parts of Africa face significant impacts from the HIV/AIDS epidemic. Finally, current policy preferences prevent the state from taking as active a role in fostering agricultural development as it did in the past.

How much these changes hinder agricultural development varies by context. The paper considers different country situations, varying by the prospects for minerals, manufacturing and agriculture. In most cases, agriculture proves central to development efforts, either a leading sector or a supporter to other sectors.

Should agricultural development efforts emphasise small or large farms? In terms of efficiency, small farms typically make intensive use of land by using much labour — since the costs of supervision of household labour are low. Self-provisioning saves costs of marketing. Large farms, on the other hand, have lower costs when transacting with the outside world in procuring inputs, marketing produce, and accessing credit.

As regards equity and poverty reduction, small farms are preferred to large. Smallholdings are typically operated by poor people who use much labour, both from their own households and of their (equally or more) poor neighbours. Moreover, when small farm households spend their incomes, they tend to spend this on locally-produced goods and services, thereby stimulating the rural non-farm economy and creating additional jobs.

The changes reviewed above affect both small and large farms, and more or less equally. But other developments may pose more severe challenges for smallholdings. Where new technologies require more capital inputs, mechanisation, or high levels of education, these may disadvantage smaller farms.

More worrying are the implications of changes to marketing chains. Supermarket operators are becoming increasingly important in parts of the developing world. The supermarkets

require stricter standards for the quality, consistency, and timeliness of supply. They may also require the ability to trace consignments back to source to confirm how they have been produced (credence). Supermarkets expect their suppliers to adjust rapidly to changing consumer demands. Small-scale, under-capitalised and often under-educated farmers find it particularly difficult to meet these requirements, especially those of traceability and credence, even if family labour is often well suited to delivering quality products.

Will small farms be marginalised from the new supply chains? Much depends on whether they grow produce where credence matters, and whether the supermarkets can obtain their supplies from large farms. When the supermarkets can deal with a few large farms, they will: when credence is less important or there are no alternatives to small farms, then smallholders are likely to become part of the evolving supply chains. Equally important is how quickly supermarkets come to dominate food supply chains. Supermarkets thrive in growing economies, so that as their control of marketing increases and some small farmers are excluded, the chances are that new jobs are being created for them in non-farm activities.

What are the policy implications? Policy for smallholders needs to vary by context. In some cases, smallholder development promises both to drive or sustain growth as well as to deliver reasonably equitable development outcomes. In other cases, policy-makers need to consider whether there are social reasons to support small farms. Where this is not the case the policy agenda becomes one of social safety nets for the poor, and facilitating good exits from farming for small farmers. Looking at smallholder development for growth and equity, a contemporary agenda would have three central elements, as follows.

One is getting the basics in place. These include ensuring that the macro-economy is stable, and that public goods — rural roads, rural education and health care, agricultural research and extension — are funded by the state. The basics also include good governance for agricultural and rural development: ensuring the rule of law in the countryside; providing opportunities for resolving disputes, especially over land; and making any public interventions in food and credit markets as transparent and predictable as possible.

A second area is that of encouraging farmers to follow demand and to improve marketing systems. Improving marketing systems so that farmers receive a better share of market prices may involve upgrading transport infrastructure and systems, providing credit to traders and processors, and forming farmer associations for bulk marketing.

There are also questions about how to respond to high variability of prices in markets, both between seasons and across the years. This may be something that requires public intervention in markets, but others would argue for improvements to private marketing systems, with for example incentives to invest in storage.

The third element would be that of institutional innovation in the provision of inputs and services. As has been seen only too clearly in the last two decades, markets — however much liberalised — often fail in rural areas. Critical problems are those of information on the intentions and character of small farmers and of overcoming complementary coordination problems in the delivery of input, financial, technical and output marketing services needed for small farm intensification. Institutional innovations are needed to overcome these failures, but who will take the initiative? The public sector generally lacks the experience, aptitude and incentives to do this. Private companies, NGOs and farmer associations may also lack experience, but they have the incentive and may be able to work more flexibly than public agencies. But the public sector could provide some support for innovations.

In conclusion, the case for smallholder development as one of the main ways to reduce poverty remains compelling. The policy agenda, however, has changed. The challenge is to

improve the workings of markets for outputs, inputs and financial services to overcome market failures. This calls for innovations in institutions, for joint work between farmers, private companies and NGOs, and for new, more facilitating role for ministries of agriculture and other public agencies. New thinking on the role of the state in agricultural development, wider changes in democratisation, decentralisation and the introduction of participatory policy processes, plus a renewed interest in agriculture amongst major international donors do present opportunities and give grounds for hope that greater support can be delivered to enable to small farm development. But unless key policy makers adopt a more assertive agenda towards small farm agriculture, there is growing risk that there will soon be a dramatic increase in rural poverty and waves of migrants to urban areas that could overwhelm available job opportunities, urban infrastructure and support services.

I. INTRODUCTION

Of the developing world's 3 billion rural people, over two thirds reside on small farms (less 2 hectares) of which there are nearly 500 million (see Box A for definition of small farms). These include half of the world's undernourished people, three-quarters of Africa's malnourished children, and the majority of people living in absolute poverty (IFPRI, 2005). Moreover, despite recurring predictions that small farms will soon disappear, they have proved remarkably persistent. Indeed, the area operated in small farms in the developing world appears to be increasing rather than reducing, and the average farm size fell in large parts of the developing world during the second half of the twentieth century (Figure 1). The importance of farming in household incomes has declined for many small farms but the number of rural households who use farming as a platform for their livelihood strategies continues to grow.

Agricultural growth that improves productivity on small farms has proven to be highly effective in slashing poverty and hunger and raising rural living standards, as demonstrated in large parts of Asia during the Green Revolution. Moreover, most of the countries that have failed to launch an agricultural revolution remain trapped in poverty, hunger, and economic stagnation. But the conventional conclusion that developing countries should continue to invest in their agricultural development and in small farms in particular, is being challenged.

The challenge begins with the role of agriculture itself. Agriculture has become a relatively minor sector in many successfully transforming countries and is now seen as less important for growth and employment creation than other more rapidly growing sectors. Moreover, globalization has led to an explosion in international agricultural trade, reducing prices and increasing competition in agriculture around the world, making it more difficult for farmers in countries with poorly developed agricultural sectors to compete in either their traditional export markets or their own domestic markets for food and feed.

Even in countries where good prospects for agricultural growth remain, it may no longer be the case that small farms have a promising future. In successfully growing countries, many small scale farms disappear as their workers are attracted to higher paying opportunities in other more rapidly growing sectors of the economy, and farms become fewer and larger. History shows that this exit pattern contributes to national economic growth and helps avoid widening income gaps between rural and urban areas. But part of the global challenge we are seeing today arises because it must happen on an unprecedented scale and with unprecedented speed. Over 2 billion people live in developing countries whose per capita incomes are doubling every 10-15 years, and this is leading to enormous pressure for millions of small farms to find exit strategies. This will require rapid growth in nonfarm employment opportunities, perhaps more than most countries can hope to generate or than can be handled without serious social dislocations and environmental degradation.

But this is only part of the threat to small farms that many see today. New driving forces, particularly falling prices for most of the agricultural commodities that small farmers grow – especially food staples; intensified international competition and the vigorous entry of supermarket chains into some developing world markets where exacting new demands are made on potential suppliers for quality, consistency and timeliness; the scourge of HIV/AIDS; and mounting pressure on natural resources from population growth, all pose serious challenges to the viability of small scale farming, even in countries that are not growing rapidly.

Just how serious are these threats to small farms? Under what conditions do small farms have a desirable future in which they can seize new opportunities within the context of changing

markets and provide the basis for rural livelihoods that generate incomes above the poverty line, with little risk of slipping back into poverty? And for those that do not, what alternatives opportunities can be created and what policy interventions are needed to help manage the transition to fewer and larger farms while avoiding worsening poverty and social inequalities at regional and household levels?

This paper addresses these issues. It is based on literature review and the deliberations of an international workshop on the future of small farms convened at Imperial College's campus at Wye, Kent, England in June 2005 by the International Food Policy Research Institute (IFPRI), Imperial College London and the Overseas Development Institute (ODI).

II. THE ROLE OF AGRICULTURE

Small farms are important players in most developing countries, accounting for significant shares of agricultural output and national employment, hence their future is linked to future possibilities for the agriculture sector. This role is itself an issue of some debate at the present time and so we begin with an assessment of the agricultural context in which the small farm debate must be resolved.

Contending Views

The historical record shows that other than a few city or island states almost no country has ever achieved rapid economic growth at the early stages of development without substantial growth of its agriculture. However, as the impacts of globalization and trade liberalization are felt around the world and as many countries have grown out of low-income status, there is a growing sense that the role of agriculture must also change and that this has important implications for agricultural development strategy.

Key arguments made for and against agriculture are summarized in Table 1.

Table 1: Summary of the Debate about the Role of Agriculture

Type of Argument	Case for Agriculture	Case against Agriculture
<i>Engine of growth</i>	Agriculture is a large enough sector in many countries that its growth can make a real difference to rural living standards. Moreover, agriculture has powerful growth linkage effects on the rest of the economy, including providing a growing demand for nascent industries.	Agriculture has become a relatively small sector in successfully growing countries and other faster growing sectors should now be prioritized. In many poor countries where agriculture still dominates, its low productivity and unfavourable market prospects undermine its potential. Moreover, agriculture's growth linkages are weaker in today's liberalized economies and may not be any larger than the linkages associated with

		employment intensive manufacturing and services.
<i>Alternatives to agriculture</i>	Many poor countries do not have viable alternatives to agriculture. Their manufacturing sectors are small and internationally uncompetitive and their service sectors are demand constrained.	Trade liberalization and FDI has opened up new opportunities for developing countries to become early exporters of manufactures and some services, and to rely more on low cost food imports.
<i>Technical feasibility</i>	Modern science is opening up new opportunities to increase agricultural productivity, even in countries and regions that have not benefited much from new technologies in the past.	The best technology opportunities have already been exploited and agricultural research now faces diminishing returns in the better agricultural areas and costly and risky prospects in lagging regions. Modern intensive farming also leads to environmental degradation in many developing country situations. Shift towards private funding of research means that problems of poor farmers are less likely to receive priority.
<i>Poverty impact</i>	Agricultural growth has proven to be powerfully pro-poor when based on small farms and the products they grow, especially food staples.	Changes in market systems mean that there are limited market opportunities for small farms today and the prices of the products they grow are at historic lows. The combination of lower prices and smaller farm sizes reduces the direct poverty impact of agricultural intensification. The rural poor have also diversified away from agriculture as their main source of livelihood. Commercial farms and high value market chains offer better prospects for creating employment and reducing poverty.

<i>Policy environment</i>	Structural adjustment programs have removed the worst of the biases against agriculture and opened the way for more successful agricultural investments.	There is no tolerance today for the kinds of big public spending on agriculture, including subsidies, that characterized the green revolution and which some think are needed in Africa today. Many countries also lack the governance and administrative capability to implement ambitious agricultural development programs
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Some of the differences in this debate can be resolved by recognizing that there is no single role for agriculture, and country context in terms of access to international markets, natural resources and stage of development plays an important role in defining opportunities and constraints and hence roles for the agricultural sector. Context is also important in determining whether agricultural growth will be pro-poor or not.

Stage of Development

Agriculture dominates the economy of most poor countries and historically has played an important role in launching an economic transformation. But its role changes with the economic transformation of a country, particularly as national per capita income grows. This transformation has several important implications for agriculture and the rural economy:

- Agriculture's shares in national income and employment fall sharply as countries grow richer and diversify, even though agricultural output and employment typically keep growing until quite late in the development process. This means that agriculture becomes progressively less important for driving growth in national income and employment and that the baton passes to other more rapidly growing sectors like manufacturing and services.
- As per capita incomes rise, labour becomes more expensive relative to land and capital and small farms begin to get squeezed out by larger and more capitalized farms that can capture growing economies of scale. There is an exodus of agricultural workers.
- As per capita incomes rise, consumers diversify their diets and demand higher value livestock products, fruits and vegetables and relatively less food staples. They also demand higher quality products, and more processed and pre-cooked foods. Urbanization accentuates these patterns, and also places a high premium on market access, especially for perishable products (Pingali 2006).

As a result of these changes, farms become larger, more commercial and more specialized in higher value products. Many small farms disappear, while others adapt either by specializing in high value niches in which they can compete, or by becoming part time farmers.

Seen in this dynamic context, arguments against prioritising small farm agriculture and food staples make sense once the transformation of a country is well underway, and the focus should shift to larger farms and high value products. Opportunities for small farms and agricultural workers to leave agriculture also increase with economic growth, but not

necessarily at a sufficiently rapid rate to prevent widening income gaps. Policy attention must then shift to managing their exit.

Table 2. Role of agriculture during the early stages of development, by country context

Land Distribution	Agricultural Productivity Potential	Nonagricultural Engines of Growth		
		Minerals	Manufacturing	Limited
<i>Unimodal</i>	<i>High</i>	Agriculture as secondary growth sector. Means of spreading the benefits from minerals to a broad rural base.	Agricultural growth can speed up manufacturing development by freeing up labour and capital, reducing food costs and supplying raw materials for agriculture based industries.	Lead sector for growth and poverty reduction.
	<i>Low</i>	Means of spreading the benefits from minerals to a broad rural base	Subsistence for the rural poor.	Overall economic prospects bleak but exploitation of niche agricultural opportunities important for growth. Subsistence for the rural poor.
<i>Bimodal</i>	<i>High</i>	Possible secondary growth sector.	Provide low cost food and raw materials for agriculture based industries.	Lead sector for growth.
	<i>Low</i>	Subsistence for the rural poor.	Subsistence for the rural poor.	Overall economic prospects bleak but exploitation of niche agricultural opportunities important for growth.

Location and Resource Endowments

While agriculture generally plays its largest role in the early stages of development, its potential contributions to economic growth and poverty reduction are affected by the resource endowments of a country and its access to international markets. Table 2 summarizes many accepted perceptions of agriculture's roles during the early stages of the economic transformation, differentiated by type of country context.

Countries with mineral resources may have the opportunity to earn significant export revenues and government income without agricultural development. In practice, minerals have proved a curse for many poor countries, benefiting just a small segment of the population and contributing to corruption and conflict while leading to a high currency exchange rate that penalizes tradable sectors like agriculture (the Dutch disease problem). The potential role of agriculture in such countries depends on its productivity potential, the size of the mineral revenues and how they are managed. Where productivity potential is good, it may be possible to invest mineral revenues in roads, irrigation and drainage, research and extension to promote a competitive farm sector despite high exchange rates. A good example is Indonesia where oil earnings allowed heavy public investment in agricultural and rural development. Where, on the other hand, productivity potential is poor, agriculture will remain extensive, functioning as a subsistence reserve for those on the land; unless intensification is aided by heavy subsidies that may be affordable if the mineral economy is sufficiently prosperous (e.g. Norway and some of the Gulf States). The benefits to the poor will be greater given an equitable (unimodal) distribution of land.

Some countries that are favourably located (e.g. on a coast) and have good access to international markets at low cost may have good prospects for developing urban-based export oriented industries at an early stage. Unless these industries are to be limited to entrepôt activity, then it is likely that agriculture will play an important part in their development. Agriculture will probably be an important initial source of capital and foreign exchange as well as supplying most of the labour for factories. Moreover, the early stages of manufacturing may be based on processing farm production.

In countries with low agricultural potential, agriculture will inevitably play a smaller role, particularly if there are minerals or potential for export manufacturing or tourism. The most challenging cases are countries that have low agricultural potential, no minerals and limited prospects for alternative growth sectors. Agriculture in these countries is likely to be first and foremost a subsistence reserve where the poor can build livelihoods with little dependency on the state, particularly when land is distributed equitably. That is not to say that there will not be some farming that is competitive, at least on the domestic market. Even countries where the land resources are generally poor for farming contain some pockets of land with reasonable soil and a water supply. Prominent examples here are Sahelian countries that have established themselves as major cotton exporters in the past two decades, as well as developing a modest level of irrigated rice production.

Poverty Outcomes

In situations with an equitable (unimodal) distribution of land, agricultural growth can be powerfully pro-poor. It not only raises small farm incomes and employment, but also contributes to lower food prices and generates strong growth linkages in the nonfarm economy which in turn help the poor. This role is greater in countries with good agricultural productivity potential.

Asia's green revolution demonstrated how agricultural growth that reaches large numbers of small farms could transform rural economies and raise enormous numbers of people out of poverty (Rosegrant and Hazell, 2000). Recent studies also show that a more egalitarian distribution of land not only leads to higher economic growth but also helps ensure that the growth that is achieved is more beneficial to the poor (e.g. Deininger and Squire, 1998; Ravallion and Datt, 2002)⁵.

In contrast, agricultural growth has proven much less pro-poor in countries that began with an inequitable distribution of land (unimodal). Good examples of this case can be seen in many parts of Latin America, South Africa and Zimbabwe.

Impact of Globalization

In summary, agriculture's past roles have included those of: leading growth sector in countries with good agricultural potential, especially if there are limited alternatives; important sector for spreading the benefits of minerals to a broad rural base; and providing a subsistence base for many of the poor until such time that they can find alternative livelihoods. These roles are context specific and understanding these relationships helps resolve part of the contemporary debate about the future role of agriculture.

However, contention remains about how globalization is affecting these different roles. Rapid growth in international agricultural trade, low world prices and increasing competition in agriculture around the world, are making it more difficult for farmers in countries with poorly developed agricultural sectors to compete. The pressure on developing country farmers is exacerbated by the hefty subsidies that farmers receive in most OECD countries⁶. In this environment, some experts such as Maxwell and Ellis ask if it is realistic to continue to prioritize agriculture in poor countries (Maxwell et al., 2001; Ellis and Harris, 2004). This question is especially important for countries in the early stages of development that do not have sufficient minerals or initial manufacturing potential to provide alternative engines of growth of the scale required to launch an economic transformation. Much of Sub-Saharan Africa falls in this category.

The debate centres on four reasons for no longer prioritizing agriculture in poor countries (see also Table 1).

First, the agricultural sector in many poor countries (especially in Africa) has fallen so far behind the rest of the world in terms of its productivity that it would be very difficult and expensive to bring it up to levels at which it could compete in the market at today's low prices. Countries might better take advantage of trade liberalization and private sector capital flows (FDI) to develop new industries and rely on food imports as needed.

⁵ There is a large econometric literature that uses cross-country or time series data to estimate growth-poverty elasticities by sector. These studies generally find high poverty reduction elasticities for agricultural productivity growth, especially in the early stages of development and relative to other sectors. For example, Thirtle, Lin, and Piesse (2002) in a cross-country study estimate that a 1 percent increase in crop productivity reduces the number of poor people by 0.72 percent in Africa and by 0.48 percent in Asia. In India, Ravallion and Datt (1996) have estimated the elasticity of poverty reduction with respect to agricultural value added per hectare at 0.4 percent in the short run and 1.9 percent in the long run, the latter through the indirect effects of lower food prices and higher wages.

⁶ The World Bank (2002) estimated their total value at about \$330 billion per year.

Second, the growth linkages emanating from agricultural growth are much weaker in today's more open economies, especially in small countries. For example, when imports can enter freely food prices will be determined more by border prices than domestic agricultural production, and industry can sell directly into foreign markets without having to wait for growth in domestic demand.

Third, the rural poor have diversified away from agriculture making agricultural growth less important for poverty reduction.

Finally, there is no tolerance today for the kinds of big public spending on agriculture, including subsidies, that characterized the green revolution and which some think are needed in Africa today. Many countries also lack the governance and administrative capability to implement ambitious agricultural development programs.

Agricultural development may be difficult and more so than in the past, but this does not necessarily imply that other sectors are easier options. Launching manufacturing based industries for export is also challenging at a time when countries like India and China are flooding world markets with cheap goods, especially for countries that do not have easy access to markets, face high transport costs and/or cannot attract much FDI. For many poor countries, especially in Africa, there may simply be no alternative to farming as an activity capable of creating jobs and raising the incomes of the poor on the scale required. This point is made by Fafchamps et al. (2001). Reviewing the prospects for economic growth in Africa, they favour manufacturing industry owing to its record of potential growth of as much as 10% a year, when agriculture rarely grows at more than half that rate. But they recognise that only a few countries in Africa have the conditions where rapid growth of manufacturing on a substantial scale can be expected in the short term.

Others place greater hope on the services sector, which is growing quite rapidly in many countries, including Africa. A problem with the service sector is that it largely depends on the domestic market for its demand and unless per capita incomes are increasing then demand will remain stagnant. Where this is the case, as in many African countries, new service sector jobs are likely to be low productivity activities that simply supplement, rather than replace, existing incomes -- what Lipton (2004) calls 'jobs of distress'. The better jobs are often driven by government employment (including the military and by services directly linked to foreign aid (e.g. servicing expatriates and project activities). Unless Africa can generate rapid growth in service sector exports (e.g. information technology or tourism) then the longer term prospects for the service sector ultimately depend on alternative engines of growth like agriculture to increase domestic demand.

There are also important questions about the costs of not developing agriculture. If agricultural development is bypassed in favour of other sectors, it may mean that food and raw materials are only available at high cost, thus increasing the costs of industry and other activities. While it may be argued that in a world with more open trading regimes, most countries can import sufficient supplies of agricultural output if necessary, this will not be the case for three important groups of poor countries:

- the half dozen or so most populous countries (home to the majority of the world's poor) whose total food needs dwarf world trade volumes,
- landlocked countries, and
- countries with low foreign exchange earnings.

Moreover, to ignore the agricultural sector in the absence of other opportunities is to condemn the rural majority to poverty. This may then lead to heavy expenditure on welfare programmes: protection of the very poor and destitute in rural areas can be an expensive business. Ignoring agriculture may also fail to utilise and develop human and other resources in rural areas. It may also invite political instability. Historically, those countries that have marginalised large sections of their rural populations have had to contend with enduring social inequalities and political tensions that few nations would choose to have. South Africa would be a good example, as would most Latin American countries with the exceptions of Costa Rica, Cuba and possibly Mexico.

The costs and difficulties of agricultural development may be more difficult than in the past, but they are not necessarily overwhelming. Modern science is opening up new opportunities to increase agricultural productivity, even in countries and regions that have not benefited much from new technologies in the past. Developments in IT and energy generation can also overcome some of the constraints of poor infrastructure. As a result of structural adjustment programs and liberalization of agricultural markets, many countries have also created a more enabling environment in which the private sector and civil society can play a greater role in agricultural development, reducing the burden on the state. The difficulties are also affected by the kinds of agricultural development that is pursued, particularly whether small farms and the rural poor are to be at the core of the strategy, and the kinds of political support that can be marshalled. We return to these issues after reviewing the small farm debate.

III. THE CASE FOR AND AGAINST SMALL FARMS

Advantages of Small Farms

Where agriculture may play a central role in development, this does not necessarily imply that small farms should have an equally central role. What, then, are the arguments for basing agricultural development on smaller farms? Two principal considerations arise, one a matter of efficiency, the other concerning equity and poverty.

Efficiency

The efficiency argument for small-scale agriculture is based upon an extensive and long standing empirical literature that has investigated the ‘inverse relationship’ between farm size and production per unit of land. This shows a common tendency for larger farms to yield lower gross and net returns per ha of land per year than smaller farms. These results are generally strongest in Asia where land is scarce compared with labour.⁷

The causes of the implied diseconomies of scale are summarised by Lipton (2005b):

Economies of scale in agriculture may apply in input supply, processing of harvests and in transport: but for most farm operations, economies of scale are weak, and there may well be diseconomies that apply once production exceeds the scope and capacity

⁷ The evidence for the inverse relationship (IR) is not undisputed — there are particular difficulties with definitions of farm size and with measures of productivity. However where studies have tried to refine definitions of size and productivity (for example, looking at size in terms of land area per worker and at differences in productivity per ha with an adjustment for land quality), the IR has often been strengthened (Lipton, 1993).

of the family farm.⁸ But the balance of these two opposing forces lies with smallness, at least in the developing world.

In other words, scale of farming leads to different transactions costs for different operations. Poulton et al. (2005a) summarise these as shown in Table 3. The implication of this is that when labour costs are an important part of agricultural costs, small farms may have significant advantages over larger units. Conversely, once agriculture becomes more intensive in transactions beyond the farm gate — buying in substantial quantities of inputs, and selling most of the output, larger farms may have the advantage. Thus small farms have the edge for less technologically advanced agriculture with low labour costs, but as an economy develops and wages and the use of capital intensive technology increase, then the advantage shifts to larger farms.⁹

Table 3: Transaction Cost Advantages of Small and Large Farms

	Small farms	Large farms
Unskilled labour supervision, motivation, etc	√	
Local knowledge	√	
Food purchases & risk (subsistence)	√	
Skilled labour		√
Market knowledge		√
Technical knowledge		√
Inputs purchase		√
Finance & capital		√
Land		√
Output markets		√
Product traceability and quality assurance		√
Risk management		√

Source: Poulton et al. 2005

⁸ The commonly cited cases apply to the quality of labour input, which in turn can be a major contributory factor towards the quality of the final product. Household members working on the farm have the motivation to work diligently and flexibly. This is a particular advantage with farm work, since so many operations require care and attention, and a willingness to adapt quickly to changing conditions. In comparison, factory work is less demanding since much of the quality of work is defined by the machinery. On a larger scale farm, the costs of supervising and coordinating labour rapidly escalate.

⁹ Small farms' more efficient use of labour arises as a result of lower transaction costs and some of these, relating to greater self motivation and lower supervision costs, arise as a result of the low opportunity costs of labour for poor farmers and hence their 'self exploitation' (Dyer, 1991 and 1996). Under such circumstances marginal returns to labour may be lower than on large farms, though total unskilled employment and labour earnings should be higher.

Has economic development tipped the scales from small to large farms? Apparently not yet in most countries, to judge by the evidence of the decline in farm sizes in the developing world (Lipton 2005b). Figure 1 shows how farm sizes have fallen in many developing countries over recent decades; just as they have been rising in most OECD countries. Figure 2 illustrates the trend for selected developing countries. While the declining farm size reflects population growth causing the sub-division of farms, were there economies of scale, then the operated unit size would not necessarily fall, since it would make more sense to rent out small plots to larger operators. But, as Lipton comments, such cases are rare: most tenancy has the opposite effect as parts of larger farms are let out to smaller operators.

An alternative explanation is that land markets are imperfect, so that less land than expected is transferred temporarily or permanently to reflect underlying optimal scales of production.¹⁰ On the one hand, imperfections may encourage large landowners to retain their land under their own operation. Selling prices for land may be inflated well above the discounted value of the future production, on account of the value of the land as collateral against bank credit, the social prestige of land ownership, or the expectation that land prices will rise.

On the other hand, there are forces that may dissuade owners of small plots from selling or renting out their lands. People may retain and manage their own farms rather than renting them out for cultural reasons (Singh, 2005). Imperfect labour markets and unemployment may make own cultivation of small pieces of land more attractive than renting out even if returns were higher on larger farms.

Both large and small landowners may also be reluctant to rent out fields for fear of not being able to regain their land either quickly or if ever.

If this alternative interpretation is correct, then the declining average farm size in developing countries does not demonstrate any superior economic efficiency of small farms. However, it does demonstrate that even tiny landholdings remain a valued component of a diversified livelihood strategy in the context of highly imperfect land, labour and capital markets.

Equity and Poverty

As regards equity and poverty reduction, there is a strong case for preferring small to large farms. Small farms are typically operated by poor people who use much labour, both from their own households and of their (equally or more) poor neighbours. Many farm surveys have shown that the smaller the holding, the more labour per unit area is applied (Cornia 1985, Heltberg 1998). If there were no transactions costs in labour markets, this would not happen: but given the costs of supervising hired labour, larger farmers tend to employ fewer workers than would otherwise be optimal.

Moreover, small farm households have more favourable expenditure patterns for promoting growth of the local nonfarm economy, including rural towns. They spend higher shares of incremental income on rural nontradables than large farms (Mellor, 1976; Hazell and Roell, 1983), thereby creating additional demand for the many labour-intensive goods and services that are produced in local villages and towns. These demand-driven growth linkages provide greater income earning opportunities for small farms and landless workers among others.

¹⁰ Were land, labour and capital markets perfect — with all parties secure in their rights, with complete information on the economics of production, no costs of negotiation and equal access to capital — then we would expect movements in land from larger to smaller units to correct the inverse ratio. The persistence of the inverse ratio suggests that less land is transferred than would be economically optimal.

For example, in North Arcot district, Tamil Nadu, India between the early 1970s and the early 1980s modern varieties of rice were introduced leading to a 50% increase in regional rice production over a decade. In this case, for every extra hundred rupees of income generated in farming, another 87 rupees were generated in the local non-farm economy, creating significant additional income and employment opportunities for the poor in the local towns and villages (Hazell and Ramasamy 1991). Small farmers and landless labourers, for example, doubled their household income over the decade, with important shares coming from off-farm employment and rural nonfarm sources. Importantly, about 80% of the income increase in the rural nonfarm economy was attributable to consumption linkages and only 20% to production links with agriculture.

Changes and Threats to Small Farmers

The above arguments are well known and widely accepted. What concerns some observers — see, for example, Maxwell 2003, Ellis 2005 — is that in a changing world, the prospects for smallholders are deteriorating. Conditions for small farms have changed considerably since the green revolution of the mid-1960s to the 1980s. Contemporary challenges include changing production methods and increased concentration in supply chains; low world prices and more open markets to international competition; changes in R&D systems; environmental degradation and climate change; the impact of HIV/AIDS; and changes in the policy environment.¹¹ Most of these challenges affect both large and small farms: but do they apply more strongly to small farms? If small farm households were more threatened, this might leave them trapped in poverty, or provoke massive and premature migration from rural to urban areas. We therefore now discuss those challenges which may pose particular difficulties for smallholder farmers.

Changing Production Methods and Greater Market Concentration

The efficiency in land use of smallholders may be undermined by changes in production methods and supply chains. Changing production technology affects economies of scale. Green Revolution technology, centred on seeds, was largely scale neutral; small farmers could participate, especially as new rounds of crop breeding made the modern varieties less variable in yield and thus less risky.¹² Where new technologies involve higher capital inputs, mechanisation, or require high levels of education, however, these may disadvantage smaller farms unless explicit action is taken to assist small farms to reduce their transactions costs when interacting with input suppliers, bankers, and traders.¹³ Many high value crops require

¹¹ Although it could be argued that some of these challenges were present in the later agricultural transformations in China and Vietnam, or were specifically addressed by policies and public investments.

¹² As noted earlier, small farmers tend to be disadvantaged relative to larger farmers by increased market transactions for inputs, finance and outputs (but not for labour). Green revolution technologies increased input use, finance demands, risk and outputs per ha (favouring larger farms efficiency) but also labour demands (favouring smaller farms efficiency). These mixed benefits to small and large farms are consistent with the observation that the inverse ratio appeared to weaken in the early stages of the green revolution as large farmers adopted new technologies first, but was then often re-established in green revolution areas as new technologies were adopted on smaller farms.

¹³ Dorward et al. (2004) argue that such interventions were critical to successful green revolutions in the past, supporting medium and small farmer access to finance and seasonal inputs and, to a lesser extent, output markets. We discuss these issues in section 3.

considerable up-front cash investment in seeds, fertilizers and pesticides. Yet small farms are less able to obtain farm credit than large farms or to obtain inputs at comparable prices.

Second, and more worrying, are the implications of changes to marketing chains. Supermarket operators or their agents are becoming increasingly important in parts of the developing world — especially in Latin America. Buying power is being concentrated in a few hands. The supermarkets require stricter standards for the quality, consistency, and timeliness of supply and may also require the ability to trace consignments back to source and to affirm the conditions under which it has been produced, in terms of use of pesticides, organic cultivation, use of child labour, or animal welfare. They also often require the ability to adjust rapidly to changing consumer demands with new investments in equipment and knowledge. Small-scale, under-capitalised and often under-educated farmers find it particularly difficult to meet the quantity, timeliness, traceability and flexibility requirements of the new supply chains, even if family labour is well suited to delivering quality products. Meeting the requirements for credence characteristics — those that cannot be proved by examining the produce, but relate to production methods such as pesticide use — can be particularly onerous for smallholders: auditing and certification costs have strong economies of scale (Raynolds 2004). By and large, smallholders have yet to find widely replicable institutional solutions to the new demands. (Boselie et al. 2005, Reardon and Timmer, forthcoming)

The importance of these challenges to smallholder farmers depends on several considerations. One is how quickly supermarkets are capturing the marketing chains, particularly those large domestic channels that deliver food to households of modest means. This seems to have happened rapidly in Latin America, parts of South-East Asia, and there are signs of the same in China. It appears to be a much more patchy and slower process in Africa and South Asia. Box B considers this point. A tentative conclusion is that the pace of advance of the supermarkets will continue to be rapid where supermarkets have gained a significant foothold: that is, in the industrialising and middle income countries of East and South-East Asia and Latin America. In other regions and above all in Africa and South Asia, however, the advance may be quite slow. Given the large fractions of the population of these countries still living on small farms, the idea that supermarkets will rapidly spread — and thereby possibly closing down their marketing options — may be exaggerated. That said, it is devilishly difficult to predict such changes since key processes are discontinuous and non-linear.

Box B: The rise of the supermarkets					
Data on supermarkets’ shares of retail food sales are incomplete. Different sources, moreover, report different data; sometimes owing to differences in the definitions of supermarkets. As Table B.1 shows, the supermarkets’ share of retail food sales varies greatly. As might be imagined, the share tends to grow with urbanisation and incomes. But there are also some significant regional effects, such as the very low shares seen in South Asia.					
Table B.1: Supermarket shares of retail sales of food, %					
	Earlier	Year	2001	c 2002	2015 projection

Nevertheless policies promoting parallel adoption of mechanisation by larger farms often discriminated against small farms.

Africa, North & Middle East					
Egypt				10	13
Morocco				5	15
Tunisia				5	18
Turkey				37	45
Africa, South of the Sahara					
Kenya				10	16
South Africa				55	83
Asia, East & SE					
China				11	27
China, urban	30	1999	48		
Indonesia	20	1999	25		
Korea	61	1999	65		
Malaysia	27	1999	31		
Philippines	52	1999	57		
Taiwan	65	1999	69		
Thailand	35	1999	43		
South Asia					
Bangladesh				1	8
India				2	9
Pakistan				1	3
Latin America					
Argentina	17	1985	57	54	61
Brazil	30	1990	75	49	76
Chile			50	62	77
Colombia			38	47	58
Costa Rica			50	55	63
El Salvador				54	68
Guatemala	15	1994	35	35	44
Honduras				42	54
Mexico			45	45	61
Panama				50	65
Paraguay				35	38
USA					
	5 to 10	1930	80		
Sources: The first three data columns come from Reardon, Timmer & Berdegue 2005, the fourth and fifth from Traill 2006. In some cases the two sources of data do not tally.					
For the projection, Traill uses Un projections of urbanisation and incomes in 2015, and assumes complete openness to foreign investment.					
Traill (2006) looked at the determinants of supermarket shares: increased incomes and urbanisation increase the share, as does income inequality — presumably since the rich are more likely to shop in supermarkets. So too does female participation in the labour force. The more open an economy is to foreign direct investment, the more the supermarket share of retail food					

sales: an effect that may not only come from transnational retail corporations entering local markets, but also since competition and demonstration effects can stimulate national supermarket chains.

Supermarkets seem to have increased their shares of retail food sales in the developing world very rapidly since the early 1990s. Will this continue? Traill makes projections of likely shares in 2015 using projections of likely urbanisation and incomes, and assuming the economy to be completely open to foreign investment. The pattern is reasonably clear: those economies where supermarkets already have 40% or more of sales will increase their shares by 10–20 more percentage points: but those countries that have low coverage, their shares will rise by smaller amounts, generally less than 10 percentage points. It seems, then, that the speed of advance of the supermarkets is uneven; and where they have not yet gained one third or more of retail food sales, the speed of advance may be quite slow over the next decade.

Another important (and related) question is whether the supermarket buyers have alternatives to dealing with smallholders. In cases of bimodal land distribution, the buyers may be able to obtain the supplies they need from a relatively small number of large-scale growers, thus cutting down on transactions costs. Where, however, supermarket buyers have no alternative to sourcing supplies from smallholders — because there are insufficient large farmers in a country and importation is uneconomic or restricted by import regulations — they have sometimes proved willing to invest in technical assistance and credit systems to improve the quantity, quality and reliability of supplies (Reardon et al. 2005).

A typology of situations can be constructed to assess the prospects for smallholders (see Table 4). This differentiates along two axes. The vertical axis separates those goods where credence attributes matter little — as in many staple foods and traditional export crops — from those where credence matters — typically in higher-value produce such as horticulture and livestock¹⁴. The horizontal axis shows the difference between situations where buyers have to deal with smallholders since land distribution is relatively equal, and those where land is unequally held and buyers can deal with large farmers exclusively.

Table 4: Commercial interest in sourcing supplies from small farmers

	Demand for output from small farms & inequality in farm structure	
	Unimodal land distribution — high demand for smallholder produce	Bimodal land distribution — low demand for smallholder produce

¹⁴ Note that, where credence attributes are not insisted upon, small farms can thrive as suppliers of horticultural produce, because of their advantages over large farms in terms of labour quality and motivation (Reardon et.al. 2005).

Comparative advantage of small farms	High — credence attributes not important	1	2
	Low — credence attributes important	3	4

Source: Poulton et al. 2005

Staples and traditional cash crops tend to be in cells 1 and 2, with opportunities for smallholders to compete, especially in cell 1. By contrast, commodity chains for higher value produce are increasingly located in cells 3 and 4. The well-documented cases of smallholder exclusion from evolving marketing channels occur particularly in cell 4 (for example Carter and Barham 1996, Dolan et.al. 1999) and sometimes also in cell 2 (Latin American supermarket systems summarised by Reardon and Berdegue 2002), whilst the few documented cases of success for smallholders in zone 4 tend to involve some form of donor or NGO support and subsidy. Indeed the best known — Hortico in Zimbabwe (Henson et.al. 2005) — has unusual features and has apparently recently collapsed owing to the overvalued exchange rate.

The main question is, will the supermarkets and other high volume buyers turn the staples chains into those with high credence attributes?

Supermarkets are most likely to try to change supply chains when there is strong demand for foods from a thriving market — a situation associated with economic growth and rising incomes. Such circumstances are promising for small farms as they are likely to offer expanded opportunities for selling farm produce outside supermarket chains. They also offer increased demand for labour in non-farm activities: a boon for marginal farms where households already depend heavily on off-farm sources for their incomes.

In Africa, it is an intriguing observation that supermarkets have penetrated furthest where there is access to large farms (South Africa, Zimbabwe, Kenya, Zambia).¹⁵ Where there are few large farms, and assuming restrictions on importing supplies, supermarkets will either not prevail or will have to enter into arrangements with smallholders.

The ability of small farmers to supply export and local high-quality/high-value horticultural supermarkets chains is much more questionable — but this is a lost opportunity more than a threat. Even here, however, history offers some hope. When global buyers began to source tropical produce from smallholders in the developing world, one hundred or more years ago, similar challenges of quality and consistency were faced. In most cases, solutions were found and much of the tropical exports came from small farms. Large-scale plantations were, for most products, the exception rather than the norm — apparently since economies of scale

¹⁵ It may nevertheless be premature to conclude that it is the presence of a large farm sector that has permitted this growth. An alternative explanation, consistent with discussions in earlier sections of this paper, is that a productive large farm sector has supported agro-industrial development, such that a larger urban middle class now exists in these countries than in many others within the continent, providing the necessary demand for supermarket growth.

applied only in processing, but not in actual production. (Hayami, 1996, 2000). Again policy may be important here if it can encourage (rather than deter) buyers or large scale producers to search for innovations that will draw in smallholder producers.

It is not yet clear how current changes will affect small farms; and almost certainly the impacts will differ considerably by context. The policy challenge, however, is clear: how to make the institutional innovations that will allow at least some small farms to overcome increased transactions costs and take advantage of the emerging supply chains.

Decline in Commodity Prices and More Open Domestic Markets

The prices of most agricultural commodities have, in real terms, been falling in the long run. Moreover, some price falls seen in the last quarter century seem unusually sharp; see Appendix A for charts of the real prices of key agricultural commodities. This shows dramatic falls during the 1980s followed by further decline or at best fluctuations around a static position. Increased openness of domestic markets also means that producers are much more exposed to competition from imports

The consequences for all producers are clear: if they cannot raise their productivity or otherwise reduce their unit costs of production faster than prices fall, they will lose income. How much smallholders are more vulnerable to falling prices than larger farmers is a moot point, hinging largely on whether small farmers produce at higher cost than larger operators. Evidence on this is scant: data on costs of production on different sized farms are not regularly collected in most developing countries and in any case estimates of land and labour costs for such calculations are fraught with difficulties. Cross-country comparisons of costs for particular products may act as a proxy for farm size, but such are not easy to make since national surveys have different ways of defining and recording costs, and sometimes also use different conventions for presenting summary measures. However, in the cotton sector, West African (smallholder) producers are believed to be amongst the lowest cost in the world. Arguments for the inverse relationship might also suggest that smaller farms are on average lower cost producers.

Notwithstanding smallholders' present costs of production, they may be less able to adapt to falling commodity prices than large farms, for two reasons. One, since marginal costs of capital are generally considered to be higher for small farms than large, they may be more disadvantaged where development requires increased capital investment in purchased inputs or equipment. Unfortunately this is the case for most agricultural development opportunities with the potential to drive very significant increases in productivity.

Two, smaller farms may also be disadvantaged if prices are more variable — because they are less able to insure themselves against price risk and because they are less able to access capital to take them through low prices within or between seasons. Large farms are less disadvantaged by fluctuating prices as they are more able to take advantage of individual years when prices are good.¹⁶

The converse is the question of how much small farmers could benefit from higher commodity prices if these were to be achieved through world trade reform. Small farms' difficulties in accessing services and credit means that they are often constrained in their

¹⁶ There is a more general point here regarding large farm advantages in coping with variability – they are also likely to do better from years of good weather and yields if access to seasonal capital and storage facilities allows them to store produce from good harvests until prices improve. Small farms without storage facilities and capital are more likely to be forced to sell soon after harvest when markets are glutted and prices low.

ability to take advantage of higher prices by expanding production. Exceptions to this include the limited number of areas where (a) it is still possible to expand the total land area planted, or (b) contract farming systems provide smallholder growers with all the services that they need.¹⁷ Large farms, on the other hand, with better access to markets, information and capital will often be better placed to take advantage of any price gains.

Agricultural Research

There are concerns that research systems in developing countries are generating fewer innovations to raise yields than applied a quarter century ago. Funding to the international agricultural research centres has fallen in real terms. Moreover, the centres have devoted more of their resources to investigation of yield protection (against pests, water problems, etc) than yield increases. Similarly, researchers have been asked to look as much at issues such as natural resource management and gender, as plant productivity.

Fewer innovations for yield increases affect all farmers, large and small. But there is one way in which smallholders may be harder hit. There has been a dramatic shift in the balance of research funding, from public to private funded research, particularly in biotechnology where there is the greatest potential for more dramatic advances. This change in the funding of research is disadvantageous to smaller farmers as private research lacks incentives to address their concerns (Pingali and Traxler, 2002) and focuses more on the needs of and opportunities for larger farmers.

Environmental Degradation and Climate Change

Farming modifies the local environment causing substantial damage under certain circumstances — although in other cases it can also improve the environment. Soil erosion, soil degradation, desertification, salination, deforestation, loss of biodiversity, depletion of groundwater aquifers, and pollution of watercourses are all possible consequences of some farming practices. The results are losses to society as a whole and rising costs of farm production.

Evidence of what is happening is, however, patchy. Historically, careful studies of changes to soil and water quality have usually had to be carried out on a small scale, although the development of near infra-red spectroscopy (Shepherd et al. 2003) looks set to change this. Extrapolation from such studies to make estimates for larger areas is fraught with problems.¹⁸ In addition, studies of environmental change tend to focus on damage and do not always take into account improvements made by farmers such as soil conservation works, tree planting and the like.

Climate change represents a global phenomenon to which farming contributes in part and to which it is especially vulnerable — since most farming depends upon the weather. While the science of climate change may be reasonably well established in broad outline, the precise

¹⁷ Thus, Gillson et. al. (2004) found that African cotton production, especially that in Tanzania and Zimbabwe, was highly responsive to the world cotton lint price: indeed more responsive to prices than US production. In both cases, however, production responded with a one-year lag — by which time world prices had often changed again. This highlights the disadvantage that smallholders face relative to large farms in terms of market intelligence.

¹⁸ For example, soil erosion measurements are usually made from plots that measure less than one tenth of a hectare. Extrapolating the results from such plots to a river basin does not take into account that much of the soil washed off one area is retained in some other part of the basin where it is deposited as silt. There are even some cases of farmers deliberately encouraging soil erosion from hillsides to improve the soil of their valley-bottom lands.

impacts of processes that play out over decades are as yet only vaguely discernable. For example, attempts to predict changes in rainfall for different (large) regions of the world have very large margins of error. At the scale of countries and major regions within them, much more work is needed to improve prediction of the impact of climate change, but there is increasing evidence that crop production will be hardest hit in tropical areas, particularly in Africa (Hulme et al. 2001; Royal Society, 2005).

The impacts on small farmers of both environmental degradation and climate change are usually assumed to be more severe than for larger holdings.¹⁹ The grounds for this are taken to be the lack of access to human, social, and financial capital and information that small farmers have compared to larger farmers. This is plausible, but not proven, and it might equally be argued that larger farmers who have heavy investments in fixed capital are also very vulnerable to changes in the environment. Smallholders whose major asset is their labour power may be able to adapt their production patterns and practices to new environmental conditions more easily.

Again, the evidence on the relative impacts of these changes on small and large farmers is limited.

The Impact of HIV/AIDS

While the threat of HIV/AIDS is near universal, in Eastern and Southern Africa the pandemic has been most prevalent to date. HIV infection typically runs at 10% or more of the adult population, reaching almost 40% in Botswana and Swaziland; and large numbers are dying — in all of Africa South of the Sahara, between 2 and 2.5 million persons died of the syndrome in 2003 (UNAIDS 2004).

The immediate effects²⁰ on the farming of households affected include loss of labour to sickness, death and caring; and erosion of capital and assets to pay for drugs, treatment and transport to hospital. For the households in question, the consequences may be less land tilled, less use of purchased inputs, and crop substitution — from cash to food crops for subsistence (and survival), from crops with high peak demands for labour to those less demanding of labour. Cash crops are particularly likely to be abandoned when adult males fall sick, since men typically assume responsibility for such crops and have the contacts to market the produce. Agricultural skills and knowledge, including highly specific knowledge of the local ecology and plants, may not be passed down the generations. (Mutangadura et al. 1999, Jayne et al. 2004)

HIV/AIDS can cruelly expose gender imbalances: widows often find they have to struggle to maintain their rights to land held in the name of their deceased husbands. They may lose contracts for cash crops. They are less likely to get access to credit or extension advice than did their late husbands.

Within the wider community, mutual support networks may wither in the face of an epidemic that creates heavy additional demands that exceed either the capacity or willingness of the unaffected population to respond. Loss of leaders and other key members of the community may undermine the working of local organisations and institutions.

¹⁹ Climate change impacts extend beyond agriculture to include other sectors such as health where poor and vulnerable communities are likely to be hit hardest (IPCC, 2001).

²⁰ See Jayne et al. 2004 for one of the most comprehensive reviews of the effects of HIV/AIDS on agriculture.

The broad outline of impacts is well rehearsed: more precise estimates, and the way in which the impacts at levels from household to village to region and country interact is less clear. The evidence from rural communities is still thin.²¹

Some plausible ideas about the effects on overall farming systems and agricultural sectors may not apply. For example, while individual households may lose labour, rural populations will continue to rise, so that overall labour supply will probably not fall. The calls already made for turning the attention of agricultural research and extension to labour-saving innovations may be appropriate for individual households, but less necessary for the wider community.²²

The impacts on afflicted households may vary considerably by household, depending on who is sick and dies — loss of household heads²³ and those with earning power create more hardship than those of others; and on the assets that the household has — impacts can be severe on households that have few. Some events recorded may wrongly be attributed to the epidemic. For example, recent shifts in Eastern and Southern Africa in cropping from grains to tubers may arise from changing factor prices, not from HIV/AIDS.

The most dire predictions, as seen in the New Variant Famine hypothesis (de Waal & Tumushabe 2003) that sees households and communities losing assets to the point when shocks to the system are likely to result in outright famine, do not seem to be borne out by observations from Zambia, where, despite HIV prevalence of 17% of adults, the lowest quartile of smallholder households have not reduced their area tilled, their crop output or lost assets in the period 1990–2003. (Jayne et al. 2004).

Responding to the epidemic's challenge to agriculture may require above all, an intensified effort to raise farm productivity — through expanding the menu of technical innovations; plus redress of gender biases in land rights and in access to extension, education and links into marketing chains. In large part, the agenda is not new: but the epidemic makes it so much more important to succeed, and draws attention to issues that long needed more concerted action.

Are smallholders more at risk? In the early stages of the epidemic, small farmers may have been less at risk, since the virus was most likely to affect the urban, the mobile, and those with higher incomes. Subsequently the epidemic has spread into rural areas, including some of the more remote ones, leaving small farmers equally at risk as other groups.

Are the impacts of the epidemic on smallholders more severe than on larger farmers? Some smallholders may be particularly affected: those that are poor and lack assets. Studies to date (Mather et al. 2004) show that poor households lacking assets, savings, and other means to cover the costs of the disease are more vulnerable to reduced output, loss of productive assets and eventual destitution.

But perhaps the most salient point about the impact of the epidemic is the sharp discrimination that it exerts. Those households affected by the disease may incur heavy losses

²¹ Jayne et al. 2004 is the main source for the arguments that follow in this section.

²² This has probably always been the case: within any village, households have different relative endowments of land, labour and capital; differences that factor markets, even when functioning reasonably well, completely even out. Hence there has long been a demand for a wider range of technical options to suit such differing circumstances.

²³ Recent research reports that the majority of deaths are not necessarily heads of household or their spouses (Mather et al. 2004).

of all kinds: their more fortunate neighbours may be little affected.²⁴ The impact of the disease is highly uneven.

Changes in the Policy Environment

Since the 1980s the international community has moved away from supporting government intervention in agricultural development. Although this was a ubiquitous feature of successful green revolutions (Dorward et al., 2004a), the high fiscal costs associated with many marketing and input subsidies became an escalating burden as governments proved unable to phase them out once they had achieved their initial purposes. India, for example, currently spends about US\$10 billion per year on subsidies that are largely unproductive (Dorward et al., 2004b). Similar problems persist in many other Asian countries. In Africa, early green revolution successes like hybrid maize proved unsustainable because of their high fiscal costs, contributing to eventual debt crises and stagnation in many of the countries where it spread (Smale and Jayne, 2003).

The shift in preferred policy from extensive interventions to a narrower state role, leaving private actors in the market to provide inputs, services, credit and marketing has left many smallholders at a disadvantage, since they face higher transactions costs in the markets than larger operators.

Threats to Small Farmers: Summary

Not all of the changes that might be thought to be particularly harmful to small farmers are necessarily any worse for them than they are for larger scale farmers. But there are some clear threats to small farms that emerge. In large part they arise from market failures, themselves amplified by the policy retreat from intervention that has left the private sector operating within markets as the main actor in input supply, financial services, marketing and even in technical advice and innovations. If smallholders are to survive and prosper, then they have to find ways to meet new demands in supply chains, and to obtain inputs, credit, and technical knowledge from private agents at competitive prices with large scale farms. A key question arises as to how far the public sector should intervene in helping small farms access markets, technologies and support services rather than leaving everything to the private sector. How much one judges that ways can be found for the public sector to play a useful role is one of the key differences between those who believe that small farmers have a future and those who do not.

IV. STRATEGIES FOR SMALL FARMS

Debate about the future role of agriculture and the viability of small farms continues and will probably not be resolved until sufficient new evidence emerges from the post-globalized era to enable rigorous hypothesis testing. In the meantime, policy makers must make strategic decisions about development priorities and their actions will themselves have an important impact on the final outcomes for small farms. In this section we discuss strategic options and how the continuing debate impacts on these options.

²⁴ Indeed, they may conceivably benefit from those affected selling livestock, land or other valuable assets at distress prices.

Roles for Small Farms

In section II we reviewed the role agriculture can play in different country contexts (see Table 2). Table 5 takes this analysis a step further and highlights the key roles that small farms might play in each type of context. Two key roles are identified. One is a growth or development role. This arises when agriculture itself has a growth role to play and when commercially oriented small farms are efficient and can compete in the market. Because many small farmers are also poor, these can be ‘win-win’ opportunities for growth and poverty alleviation. Such opportunities are most likely to arise in countries with reasonable agricultural potential and where land is already distributed equitably.

Countries starting with large mineral or urban-based manufacturing sectors will have high exchange rates and ready access to low cost food imports, so small farm growth opportunities are likely to be constrained to high value domestic markets. But in countries where agriculture is the lead growth sector, small farm growth opportunities will primarily arise in the domestic markets for food staples and in high value export markets, at least during the early stages of development when the domestic market for high value products is still small.

A second role for small farms arises from its potential social contributions. Small farms can provide a way for governments to spread the benefits from a large mineral or urban-based manufacturing sector during the early stages of development when most people are still engaged in agriculture. As economies grow, small farms can also serve as a useful reserve employer until sufficient exit opportunities exist, a role that can be especially important in fast growing countries regardless of their primary engine of growth. Finally, small farms may provide a social safety net or subsistence living for many of the rural poor, even when they are too small to be commercially viable. These social roles are most important in countries with poor agricultural productivity potential, a bimodal distribution of land, or which start with a large minerals or urban-based manufacturing sector. These social roles do not necessarily require that small farms be commercially viable, and in fact subsistence oriented small farms may be the most appropriate ones to target.

As the economic transformation proceeds, small farms have a shrinking role to play in all kinds of countries. Growth opportunities become more limited and the small farms that survive find niches in high value markets or become part time farmers. Small farms also serve as a reserve employer that retains workers until sufficient exit opportunities arise in the non-agricultural sectors. This role can be especially critical in fast growing economies. It is also a tricky role as it can lead to government support policies that keep too many people in agriculture for too long, as happened in many OECD countries.

Table 5: Priorities for small farms by country context

Land Dist.	Agr. Prod. Potential	Early Stages of Development			Later Stages of Development.
		Nonagricultural Engines of Growth			
		Minerals	Mft.	Limited	All

<i>Unimodal</i>	<i>High</i>	Commercial opportunities for small farms selling high value products in domestic market Social value in retaining small farms to spread mineral wealth and provide subsistence for the rural poor	Commercial opportunities for small farms to sell food staples and high value products in domestic market Social value in retaining small farms as a reserve employer	Commercial opportunities for small farms in export crops, food staples and some high value products.	Remaining small farms gradually get squeezed out and those that survive focus on high value products and part time farming Social value in retaining small farms as a reserve employer until sufficient exit opportunities have been created
	<i>Low</i>	Social value in retaining small farms to spread mineral wealth and provide subsistence for the rural poor	Social value in retaining small farms as a reserve employer and provide subsistence for the rural poor	Opportunities for small farms to exploit niche agricultural opportunities Small farms provide subsistence for the rural poor.	
<i>Bimodal</i>	<i>High and Low</i>	Social value in retaining workers in agriculture and provide subsistence for the rural poor	Social value in retaining small farms as a reserve employer and provide subsistence for the rural poor	Opportunities for small farms if land redistributed, otherwise small farms that exist exploit niche opportunities Social value in retaining workers in agriculture and to provide subsistence for the rural poor	

Role of Government Interventions

Should governments intervene to support small farms? There is less debate about this issue when considering social roles since even the most ardent free market advocates only expect market solutions to provide efficient outcomes and not necessarily equitable or poverty

reducing outcomes. Direct support to subsistence oriented small farms may be a more cost effective alternative to other forms of income transfers and social safety nets. For example, food aid, a common response to distress from donors, typically costs more than US\$250 for each tonne of cereals delivered in rural areas, compared to typical smallholder production costs of US\$100 or less.²⁵ But this will not always be the case. Moreover, one also needs to be concerned that support policies for non-viable small farms do not encourage too many workers and poor people to stay in agriculture or for too long.

The need for governments to support commercially oriented small farms to exploit growth opportunities is less obvious. In such situations, it might seem that governments should stand back and let market forces hold sway in driving agriculture and small farm development. In theory, this should ensure that the most efficient types of agriculture, commodities, regions and farm sizes prevail. The primary role of policy interventions would then be to provide an enabling economic environment for market led development. This would typically mean providing stable and undistorted economic incentives and essential public goods and services.

Although widely favoured in much contemporary development thinking, a problem with this approach is that there are many institutional and market failures in poor countries and these can lead to discriminatory and inefficient outcomes. For example, if market failures penalize small farms over large in accessing markets and inputs, then unfettered markets may favour large farm outcomes that are less efficient as well as less equitable than those that could result from small farm led growth. In this case, targeted policy interventions that correct the underlying market failures might be win-win for efficiency and equity.

There are a wide range of failures in input and output markets in developing countries and many of these are linked and spill over from one market to another. Agricultural development requires a process of sustainable intensification in which farmers combine land, labour, technical skills and information, purchased inputs, and fixed and working capital to produce outputs for sale. If they are to invest in sustainable intensification they need to be assured of reasonably reliable access to a complete set of these factors of production and input and output services, on reasonable terms - if one element of the set is missing then investments in all the others will be lost or significantly reduced.

Analysts differ in the extent to which they believe these complementarities pose a problem for the development of private service suppliers. Conventional liberalisation policy does not recognise this as a problem. Others (for example Poulton et al 2005a) observe that potential service suppliers face very uncertain demand for their services unless farmers are assured of access to other, complementary, services. Such assurance is lacking in poor rural areas which have not yet achieved widespread transition from low input/ output farming unless some external agent either undertakes itself to provide all the important missing services or develops a coordination mechanism for other actors' provision of all missing services. Such mechanisms must be credible to farmers and to all service providers. Without such

²⁵ For Communal Areas of Zimbabwe, the estimated cost of producing one tonne of maize was under US\$80 in 1995/96 (Sukume et al. 2000) — interestingly, the same source computes just under US\$70 a tonne for maize from large-scale commercial farms that usually enjoy better soils than the small farmers in the same ecological zone (NR II in this case).

Imports of maize from the world market usually cost at least US\$220 CIF Harare: if then delivered to rural areas, additional transport and handling costs have to be added.

In Malawi in 2003–2004, an informed advisor on food security claimed that while the import parity price of maize was around US\$250 a tonne, it cost a leading food aid agency as much as US\$450 a tonne to deliver food aid to rural clients, a cost that includes those of targeting.

mechanisms, it is argued, private investors will not invest significant capital in the development of agricultural service businesses, and will only provide opportunistic agricultural services that do not require significant investment in specific assets (dedicated fixed costs). These arguments are supported by observation that successful green revolutions (involving staple crops) were generally associated with some state activity in service coordination (Dorward et. al. 2004), that intensive cash crop production by small farmers is generally developed through contract farming, interlocking systems or complementary coordination by supply chain facilitators and/or champions (Best et al, 2005) and that it is hard to find examples of sustainable intensification of small farms without such mechanisms (Poulton et al., 2006).

If complementary coordination is important, then some problems in service delivery cannot be addressed by focussing on individual services: specific attention needs to be given to establishing mechanisms for complementary coordination. The challenge in this, and opportunities for developing different types of mechanism, are particularly affected by differences in market characteristics for different kinds of product. In broad terms there are potential gains for private companies in taking on the costs and risks of complementary coordination for small farm production if (1) high fixed costs in processing or other downstream costs provide strong incentives for firms to have secure high volume purchases, (2) small farms are important suppliers (because they are lower cost suppliers than large farms, because there are political benefits in dealing with small farms, or because land tenure systems mean that there are no larger farms to source from – see Table 4 and associated discussion) and (3) the company has some degree of monopsony in buying farmers' produce so that crop purchases can provide some degree of collateral for loans for seasonal capital and thus some protection against strategic default by farmers.²⁶ Conditions (1) and (3) are often related in that high fixed costs lead to economies of scale and represent an entry barrier to small scale buyers. They therefore encourage smaller numbers of larger buyers in a more concentrated market. Larger buyers are then more likely to be able to access the capital and develop the organisational capability to deliver low cost services to large numbers of small farms. Where these conditions are lacking, however, private sector companies are unlikely to provide complementary coordination mechanisms and these mechanisms must be provided by other actors.

Large scale success in the past has required large scale interventions by governments, but African experience with such interventions has often been disappointing, with high costs and few gains to show for these costs. There are few if any examples of large scale and effective coordination mechanisms in staple crop production that have not involved the state. A key challenge to small farm development in poor rural areas is therefore the development of new coordination systems and new, complementary roles for governments (including local government and Ministries of Agriculture), civil society organisations, farmer organisations, and large and small scale agribusiness firms. Such mechanisms are being developed and tested on a small scale, with mixed success (see for example Poulton et al, 2005b) but much greater efforts are needed here in adaptive policy research.

How should policy support for small farms change over time?

Table 5 implies that the need for particular types of policy support should vary by country context and stage of development. The poorest countries and rural areas, at a very low stage

²⁶ This can also be achieved by horizontal coordination between buyers who agree to share information about farmers who default on loans (Stockbridge et al., 1998).

of development, are characterised by low road density, poor roads, poor telecommunications, poor human health, lack of irrigation infrastructure, and lack of productive agricultural technologies. They also lack a developed and diversified monetary economy, the markets for agricultural inputs, outputs and finance are very 'thin' (with small and unreliable traded volumes), and the business environment is, with some understatement, difficult - with poor information (on prices, technologies, markets and other potential market players), difficult and weak contract enforcement, and high risks - not only in production and prices but also in contract enforcement and in access to input and output markets and to financial and transport services. In such conditions there are strong needs for investment in public goods, in infrastructure, agricultural research and extension, and in the development of institutions supporting business and market activity. Market conditions of poor rural areas are also likely to encourage a low level equilibrium trap of complementary coordination failure in the provision of services to small farms, and particularly services for small farm production of staple crops.

Successful agricultural development which provides public goods and overcomes coordination failure should, however, lead to the establishment of thick markets and, with time, these should be able to provide effective complementary coordination without the need for non-market arrangements: policies promoting such coordination are then no longer needed, and indeed are likely to inhibit market development.

Dorward et al (2004) analyse the successes and failures of supply side state led policies and demand side market liberalisation phases of agricultural policy in terms of the sequencing and effectiveness of attempts to address public good, complementary coordination and market development problems. They describe a common pattern of government policy in successful green revolutions in terms of two active policy phases which first 'establish the basics' (with investments in public goods to develop technologies to raise small farms' potential productivity) and then 'kick start markets' (with coordinated complementary investments to improve small farmers' access to financial and input and output market services necessary for technology adoption). Once large numbers of farmers have successfully adopted the new technology with sustained participation in financial service, input and output markets then these markets can attract private sector investment, allowing governments to withdraw – although they often find this difficult.

Government Effectiveness

The above analysis draws attention to the important challenges facing policy interventions to support small farm development. Not only are complex interventions needed at early stages of development, but these need to be adjusted and changed as development proceeds.

Critics of small farm development are doubtful whether many governments have the capability to effectively implement these kinds of agendas. A key question for any intervention is whether the net economic and social benefits of intervening are sufficient to justify the costs. In many countries administrative and technical capacity is weak in government and particularly in ministries of agriculture. These weaknesses have been exacerbated by structural adjustment programs and market liberalization programs which neglected rather than reformed many public institutions serving rural areas. This poses challenges for any government interventions facilitating supply of services to small farms, whether these interventions are restricted to the supply of services with public good characteristics or include a wider coordinating role, though the challenges will be different. In some cases small farm development policy might be more costly and challenging than some alternative development strategies, based for example, on delivery of health and education

services, and must therefore be justified on the basis of significant win-win benefits or poverty reduction (Maxwell et al., 2001).

Small farm proponents must therefore include early reform and strengthening of key public institutions at the core of their agenda. This will often require overcoming vested interests, otherwise new forms of inefficiencies and rent seeking simply replace old. New innovations may be needed. For example, increased donor support of key public sector investments could come from new financing arrangements that empower the users of public services (e.g. vouchers, user fees and other co-financing mechanisms) and with appropriate institutional reforms to improve mandates and performance. There is also need to form new partnerships between the public, private and NGO sectors for the provision of public services. Even though government must pay for many of these goods and services, it does not mean that the public sector has to deliver them. Recent years have seen considerable success in using NGOs and community based organizations to deliver targeted assistance to the poor, and private firms can be contracted to build and maintain schools, health centres, roads and the like. Contracting out arrangements with other parties can be much more cost effective, and may offer better possibilities for involving local people and communities. The types of partnerships desired will vary by sector and function, with many more opportunities to diversify supply arrangements for education and health services, for example, than provision of rural roads and market regulation.

The Politics of Assisting Small Farms

Although there are country contexts where government support for small farm development is clearly warranted, this does not mean it will or can happen. Successful intervention also requires that governments have the interest and capacity to mobilize the support that is needed. Political will is the fundamental precondition for agricultural investment and/or policy reform. Decision makers (senior politicians and bureaucrats) have to decide to prioritize agricultural investment over competing investment options and/or to take on the task of reforming policy, which may provoke opposition from some quarters. They, therefore, have to be persuaded of the benefits or necessity of doing this.

The Green Revolution followed serious commitment to agriculture by Asian and Latin American governments who not only invested heavily in the necessary rural infrastructures and technologies but also implemented major policy and institutional reforms to support agriculture.

In China, national interest considerations were important in generating the agricultural reforms that commenced in 1978. Two decades of policy failures during the Great Leap Forward and the Cultural Revolution had weakened the economy and damaged the credibility of the political leadership. Economic reform was initiated in 1978 in the agricultural sector because of a "perception at the top that stagnation of agricultural productivity was a bottleneck hindering further development of the overall economy" (Gulati et al., 2005, p 12).

Similarly, in India national interest considerations were important in generating the major investments of the Green Revolution era. These investments were undertaken in response to the country's precarious food security situation coupled with its reluctance to bow to the political pressures that accompanied acceptance of PL480 food aid from the US. Ideology – in the form of Nehru's advocacy of science for agriculture (which preceded the food aid issue) – also played a role (Visvanathan 2003).

In both India and China small commercially oriented small farms were major beneficiaries of the public interventions, particularly land policies, grain marketing and support services and agricultural R&D.

In Latin America there was also significant government commitment to agriculture, but small farms never received the same priority as in Asia. This was largely a reflection of the prevailing and highly inequitable distribution of land and the powerful entrenched interests of the landed class (Lopez, 2004).

In many Asian and Latin American countries there is continued public support and investment in agriculture, but major political economy challenges have arisen in cutting back subsidy support to agriculture in the Green Revolution heartlands now that the developmental job of "kick starting" markets has long been accomplished. Vested interests and widespread opposition in rural areas have become major impediments to adapting the policy agenda to changing economic conditions, even though reorienting public expenditure away from subsidies towards expenditures on key public goods - such as rural roads and agricultural research - would provide a greater stimulus to agricultural growth and future small farm opportunities.

In Africa, agriculture is regularly referred to as the "backbone of the economy" in African political discourse yet the share of the national budgets devoted to agriculture remains consistently well below that in Asia (Fan and Rao, 2002)²⁷. Even when significant sums are spent, it tends to be on subsidy programmes rather than on long-term investments in productive capacity. Moreover, despite the structural adjustment programs, many African countries have yet to fully implement the needed policy reforms because of the resistance of entrenched political and bureaucratic interests that retain control of policy levers that are useful for patronage or rent-seeking purposes. Meanwhile, as budgets have contracted, long-term investment has been increasingly left to donors, whose own funding for the agricultural sector has been in decline.

Overall, the political economy prospects for pro-smallholder agricultural development are not that favourable in any region today. But a number of changes are underway in the development agenda that have the potential to modify this story in many poor countries (Birner and Resnick, 2005). These are democratisation, decentralisation and the increasing reliance on participatory policy processes (for example PRSPs). The impact of these changes on the orientation of agricultural policy (pro- or anti- small farms) is as yet unproven, but there may be opportunities to be seized.

Democratisation may squeeze opportunities for private rent-seeking in the long-term²⁸ and ultimately also strengthen the voice of small farm households simply by virtue of their

²⁷ Agriculture has recently received a higher political profile in Africa. In 2003 the Heads of African States of the African Union declared (the Maputo Declaration) that they would allocate up to 10% of their fiscal budgets to agriculture by 2008, and African governments are also working together on the Comprehensive Africa Agriculture Development Programme (CAADP) through the New Partnership for Africa's Development (NEPAD). It remains to be seen whether these initiatives will lead to any significant increase in investment and policy support for agricultural development and small farms.

²⁸ This will depend, inter alia, on the rules governing party funding under the evolving political dispensations.

numbers. However, the long-term could be long indeed. In Many countries, the formal structures of democracy (e.g. parliaments and parliamentary elections) may be instituted long before they really become the centre of power and decision making. In the meantime, the need for presidents or ruling groups to now win regular elections may actually strengthen the incentives for the exercise of patronage.

Decentralisation also offers promise for more effective local support to small farms in the long-term, although a degree of central control needs to be maintained to ensure the continued provision of national-level public goods, such as agricultural research investment. According to Foster et al., 2001, agro-ecological heterogeneity means that solutions to many agricultural development problems should be sought at decentralised, rather than central, level. We would add that effective management and coordination of agricultural service provision can only really occur at local level, which is also where much of the relevant information is available for holding front-line service providers accountable for their performance. The major risks entailed in decentralising the planning and management of agricultural service provision include the under-resourcing of decentralised administrations (hence no implementation capacity for local plans and service delivery) and the danger that decentralised planning processes (see below) will be captured by local elites (Bardhan, 1996).

In many countries where small farm development is important for poverty reduction, participatory policy processes are being introduced at a number of levels, including economy wide (e.g. PRSPs), (sub-)sectoral and local. Multi-stakeholder deliberations on policy design and implementation are particularly relevant to the agricultural sector where a distinguishing feature is the large number of stakeholders involved, both within government (where relevant ministries might include Livestock, Forestry, Water Resources, Roads and Finance, as well as Agriculture) and outside (Foster et al., 2001). In theory, they allow policy design to draw on a wide range of available expertise and information. Moreover, whilst pro-reform forces are generally weak, these could be strengthened if policy "spaces" are created that give non-governmental stakeholders the right not just to contribute to policy formulation, but also to hold public agencies accountable for their performance in delivering on agreed actions. A factor that is likely to be important in determining the success of such "spaces" is the extent to which participants use them to seek a consensus on ways forward for their (sub-)sector, as opposed to using them to propagate and entrench conflicting viewpoints. Regular "deliberative fora" (Hall and Soskice, 2001) may in themselves help to forge consensus, even where participants begin with polarised views. However, the challenge may be greater in situations of major inequality (e.g. pitching unions of peasants and the landless against large landholders or corporate interests in Latin America) or when the focus of discussion is a staple food system rather than an export cash crop system.

Reviews of first generation PRSPs (e.g. Cromwell et al., 2005) indicate that agriculture - indeed, (rural) productive sectors more generally - has often been under-emphasised in these documents, though where responsibility for this lies (domestically or with donors, whose preferences tend to influence what is included in the documents) is less clear. This reinforces the point that the impact of new policy trends on the direction of agricultural policy is as yet unproven.

Similarly, at sectoral level, the current consensus is that sector-wide approaches (SWAps) have yet to be as effective in agriculture as in social sectors (Foster et al., 2001). However, the need to get multiple domestic stakeholders to work together and to achieve greater

coordination amongst donors supporting the agricultural sector means that attempts to evolve more flexible SWApS will continue.

At sub-sectoral level, multi-stakeholder deliberative fora have made a useful contribution to strengthening the performance of southern and eastern African cotton sectors (Tschirley et al., 2006). Key elements of success would appear to include the relatively small number of key stakeholders involved and the reasonable coincidence of interests across stakeholders within export cash crop systems.

As noted above, there would appear to be potential to build on ongoing administrative decentralisation programmes to establish participatory, local agricultural development planning processes that both respond flexibly to the agro-ecological diversity across administrative units and provide a framework for achieving coordination across service providers in a liberalised market context. This potential has yet to be realised, however, not least because of the weakness of decentralised administrations in many countries.

What are the implications of the foregoing discussion for those seeking to promote pro-smallholder agricultural reform in developing countries?

For technocratic elements within state bureaucracies, one implication would seem to be that, early on in the reform process, reformers should push for the creation of both national and local fora at which discussions can begin about ways forward for particular sub-sectors or areas. As already noted, these fora should also enable private sector, farmers' and NGO representatives to begin to hold public agencies to account for their performance in delivering on agreed actions, thus beginning to strengthen the voice of those pushing for reform outside of government. This is particularly important in Africa, where political scientists are pessimistic about the ability of other measures to push neo-patrimonial political systems in a more developmental direction.

Donors are more influential players in policy making in Africa than in much of Asia or Latin America. Even in Africa one has to accept the limitations to the effectiveness of donor pressure when strong, domestic political interests are threatened (de Renzio, 2006). Nevertheless, the leverage that comes from providing 40% of a government's budget cannot be entirely ignored! Furthermore, after a period of declining expenditure on agriculture and rural development by major donors (and many national governments), there is welcome evidence of a commitment to reverse this from several donors (e.g. DFID, OECD/DAC), although this still needs to be translated into action²⁹. This represents a major opportunity to encourage more favourable agricultural policies in Africa, although the leverage that comes from additional resources needs to be used wisely. In particular, supply driven increases in funding for public sector agricultural agencies could undermine any incentive that they have to reform themselves or to adopt more effective, pro-small farm policies. Rather, therefore, donors should make credible (and coordinated) commitments to reward better governance within such agencies with additional resources.

Given the importance of local context in defining appropriate institutional arrangements to support smallholder agricultural growth, conditionality might better be focused on process,

²⁹ In Africa, a similar commitment has been made by national governments through the African Union (Heads of State and Government of the African Union, 2003)

rather than on the adoption of particular policy reforms³⁰. As noted above, where good process is defined to include the inclusion of private sector, farmers' and NGO representatives in policy setting and monitoring of implementation, this serves the dual purpose of creating conditions necessary for appropriate institutional innovation and of strengthening the hand of proponents of reform within the broader battle for pro-smallholder agricultural policy. Such principles can be applied at both national level (e.g. through SWAps) and at local level (through competitive funding windows to which a wide range of stakeholders, including local administrations, are eligible to apply).

An additional priority for donor funding in the sphere of agricultural and rural development is to support farmer organisation development. Strong farmer organisations are valuable both for service delivery and also for advocacy, both at national level and at local level, where they could be an important counter-weight to the power of local elites in decentralised planning processes. However, one also has to recognise that the effectiveness of farmer organisations is critically dependent on their own internal governance and management. Significantly increasing external funding for such organisations could lead to formation of weak organisations, in much the same way as it could undermine the incentives for public sector agencies to reform their organisation and management.

Finally, there are debates over modalities for agricultural support, given the (uneven) shift towards direct budget support linked to PRSP processes. The perceived neglect of agriculture within first generation PRSPs has led some to see moves towards greater donor reliance on direct budget support as a threat to agriculture, even though some African governments might like to spend more on agriculture than their major donors. One domestic reason given for the low priority given to agricultural investment within both PRSPs and national budgets is the technical weakness of many Ministries of Agriculture, which reduces their success in getting "their" issues listed as national priorities and in competing for scarce budget allocations with better organised Ministries such as Health and Education³¹. Given the complexities of agreeing a reform agenda for the agricultural sector set out above, we suggest that further efforts are required to develop sector-wide approaches for agricultural reform as a prerequisite for effective participation by Ministries of Agriculture in PRSP production and MTEF negotiations³².

³⁰ C/w Paarlberg suggestion at workshop, which was that funding should reward measurable outcomes in terms of delivery of specific public goods. This approach is better than making aid funding conditional upon the adoption of orthodox reform policies. However, it still underplays the importance of coordination and the development of appropriate institutional arrangements in encouraging smallholder agricultural growth.

³¹ Greater agreement between governments and donors about central role for public delivery of basic health and education services makes it easier for these ministries to develop and present a compelling case for funding to Ministry of Finance.

³² A counter-argument to this is that the most effective weapon in persuading Ministries of Agriculture to "get their act in order" is to allow their funding to be cut through PRSP and MTEF processes until they are forced to change their attitudes to reform. However, given the political impetus to preserve some level of expenditure for Ministries of Agriculture and the chance of coordination failures preventing a more persuasive "act" from emerging, a more direct approach to sector capacity building and policy development is arguably more appropriate.

V. CONCLUSIONS

Do small farms have a future in the developing world? This paper has summarised and taken forward the debates around the importance of agriculture and specifically small farms in promoting growth and poverty reduction in developing countries. Agriculture, and small farms have played a major role in development and poverty reduction in the past, but changing global conditions and donor policies, and the characteristics of today's poor countries are widely acknowledged as making this much more difficult now.

The paper develops a typology of country contexts in which the differing roles and needs for small scale agriculture development are considered. This helps clarify current debates regarding (a) the potential for small farm development as a driver of growth and poverty reduction and (b) the roles of governments and the private sector in promoting such development.

What are the policy implications? Policy for smallholders needs to vary by context. In some cases, smallholder development promises both to drive or sustain growth as well as to deliver reasonably equitable development. In other cases, policy-makers need to consider whether there are social reasons to support small farms. Where this is not the case the policy agenda becomes one of social safety nets for the poor, and facilitating good exits from farming for small farmers. Looking at smallholder development for growth and equity, a contemporary agenda would have three central elements, as follows.

One is getting the basics in place. These include ensuring that the macro-economy is stable, and that public goods — rural roads, rural education and health care, agricultural research and extension — are funded by the state. The basics also include good governance for agricultural and rural development: ensuring the rule of law in the countryside; providing opportunities for resolving disputes, especially over land; and making any public interventions in food and credit markets as transparent and predictable as possible.

A second area is that of encouraging farmers to follow demand and to improve marketing systems. Improving marketing systems so that farmers receive a better share of market prices may involve upgrading transport infrastructure and systems, providing credit to traders and processors, and forming farmer associations for bulk marketing.

The third element would be that of institutional innovation in the provision of inputs and services. As has been seen only too clearly in the last two decades, markets — however much liberalised — often fail in rural areas. Critical problems are those of information on the intentions and character of small farmers and of overcoming complementary coordination problems in the delivery of input, financial, technical and output marketing services needed for small farm intensification. Institutional innovations are needed to overcome these failures, but who will take the initiative? The public sector generally lacks the experience, aptitude and incentives to do this. Private companies, NGOs and farmer associations may also lack experience, but they have the incentive and may be able to work more flexibly than public agencies. But the public sector could provide some support for innovations.

In conclusion, the case for smallholder development as one of the main ways to reduce poverty remains compelling. The policy agenda, however, has changed. The challenge is to improve the workings of markets for outputs, inputs and financial services to overcome market failures. This calls for innovations in institutions, for joint work between farmers, private companies and NGOs, and for new, more facilitating role for ministries of agriculture and other public agencies. New thinking on the role of the state in agricultural development, wider changes in democratisation, decentralisation and the introduction of participatory policy processes, plus a renewed interest in agriculture amongst major international donors do

present opportunities and give grounds for hope that greater support can be delivered to enable to small farm development. But unless key policy makers adopt a more assertive agenda towards small farm agriculture, there is growing risk that there will soon be a dramatic increase in rural poverty and waves of migrants to urban areas that could overwhelm available job opportunities, urban infrastructure and support services.

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Box A: What do we mean by ‘small farms’?

Definitions of small farms vary. The most obvious measure would be farm size, and several sources define small farms as those with less than 2 hectares of crop land. In similar but less precise vein, others describe small farms as those with ‘limited resources’, a definition that includes land as well as capital, skills and labour.

Other authors emphasise, variously:

- the ‘low technology’ often used on small farms,
- dependence on household members to provide most of the labour, and
- subsistence orientation, where the primary aim of the farm is to produce the bulk of the household’s consumption of staple foods.

Context matters as well: a ten hectare farm in many parts of Latin America would be smaller than the national average, operated largely by family labour, and producing in first instance for subsistence — making it a small farm by most criteria. The same sized holding in the irrigated lands of West Bengal, on the other hand, would be well above the average size for the region, would probably hire in much of the labour used, and produce a significant surplus for sale. In this case, the ten-hectare farm would be described as medium if not large, and probably seen as ‘commercial’ as well.

Small farms and marginal farms

Some of the debate on small farms is confused by the proponents having in mind different kinds of small farms. Those optimistic about the prospects for smallholder development have in mind small farms that are large enough to provide one or more full-time jobs for the household, and capable of generating enough income — albeit in combination with some off-farm work, especially in the slack season for farming — to escape poverty. How large is ‘large enough’ in this case? The answer might be as little as one hectare for irrigated land, and as much as three hectares for rainfed crop land.

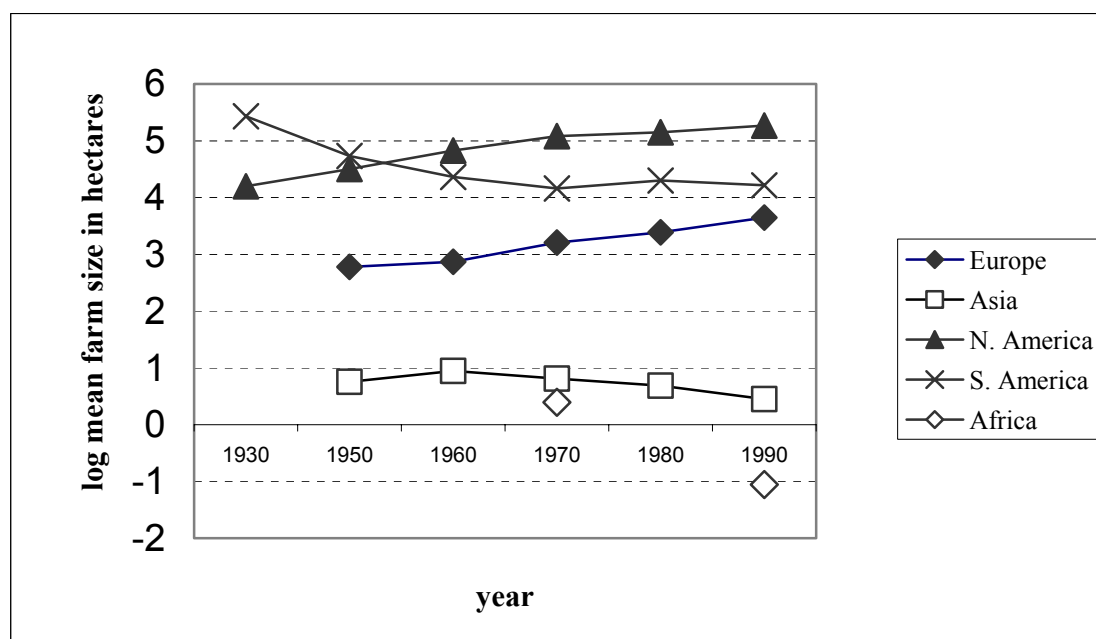
Other observers have in mind that many small farms are smaller than these sizes, and are incapable of providing enough work or income to be the main livelihood of the household. These are perhaps better termed ‘marginal farms’, a term in standard use in India for holdings of less than one hectare.

Very small or marginal farms in some countries make up the majority of all holdings — in India, for example, farms of less than one hectare comprise 62% of all holdings, and occupy 17% of farmed land.

Development strategies for these different kinds of small farms may be rather different, with correspondingly different policy implications — a point that will be taken up in section two of this paper.

Source on definitions: Nagayets 2005

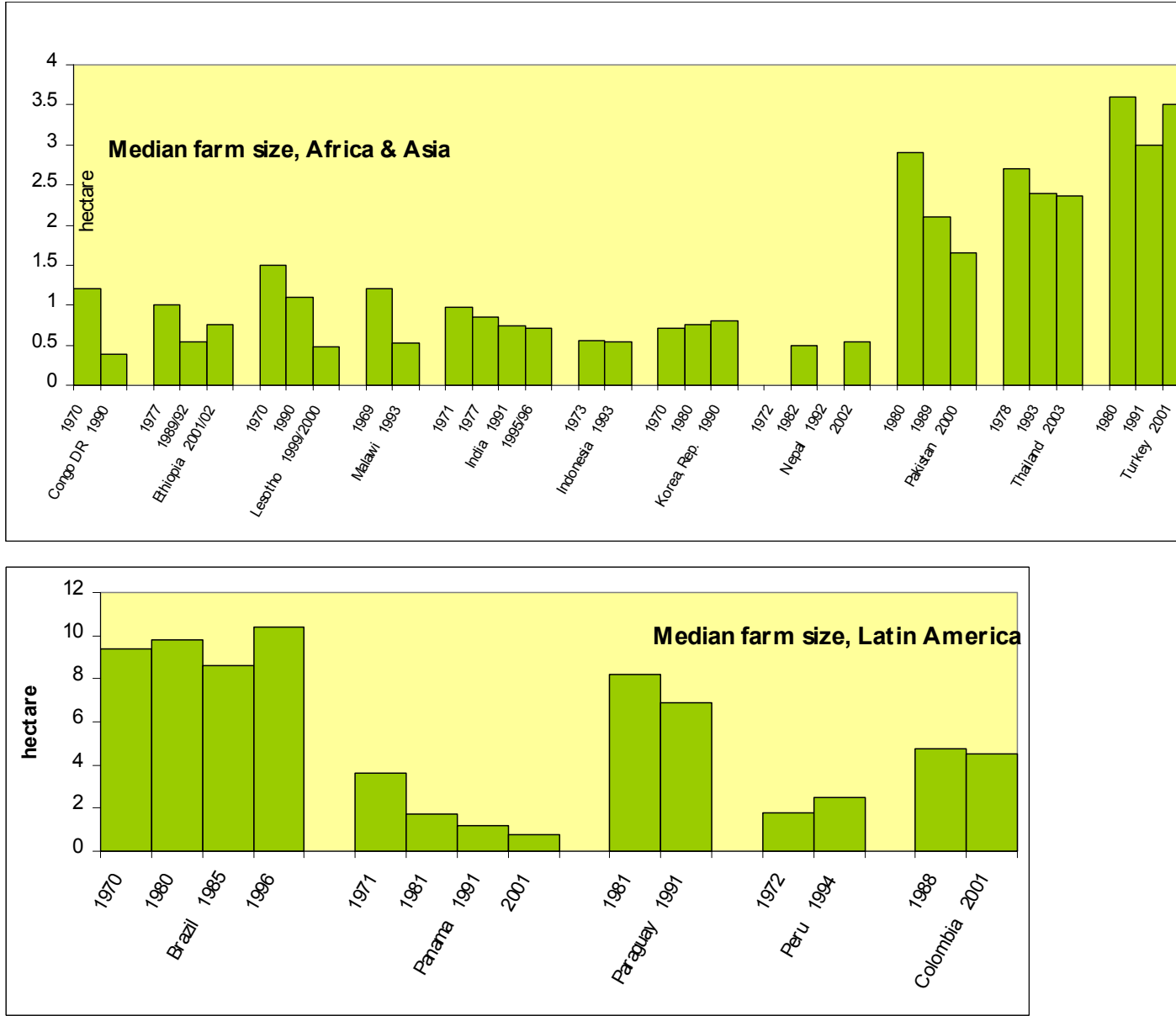
Figure 1: Mean farm size by continent, 1930-1990



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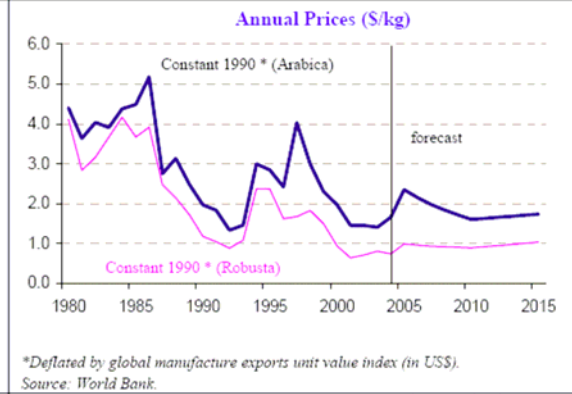
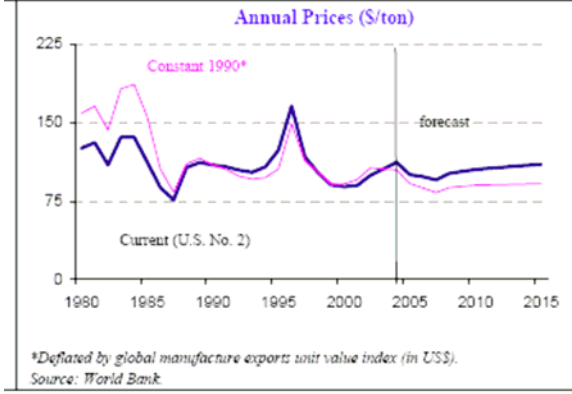
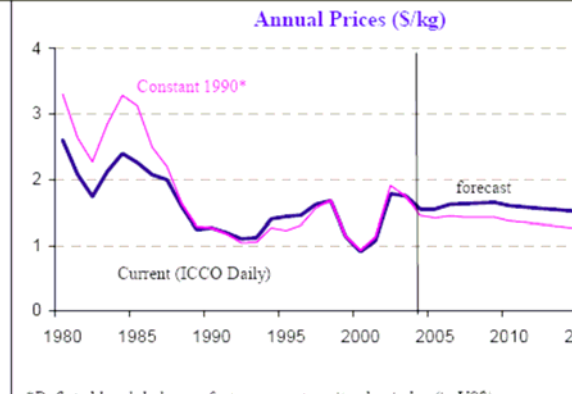
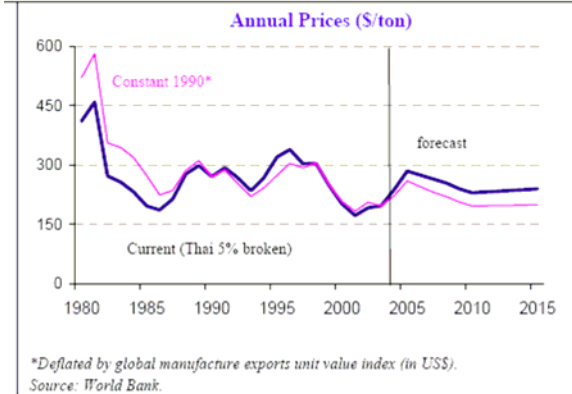
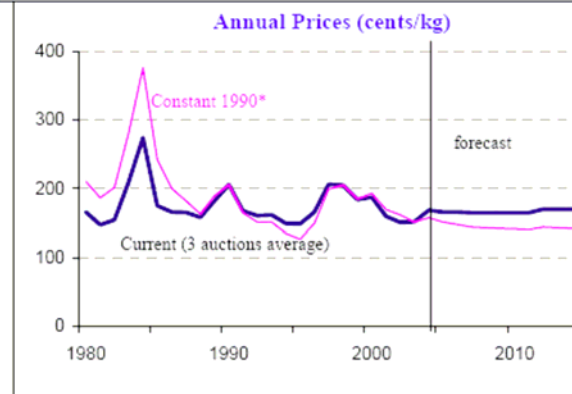
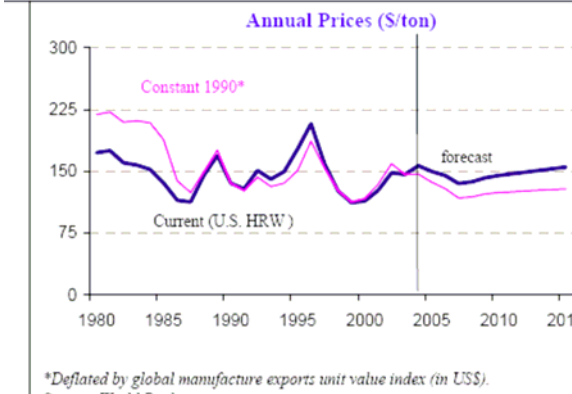
Source: Eastwood, Lipton & Newell 2004

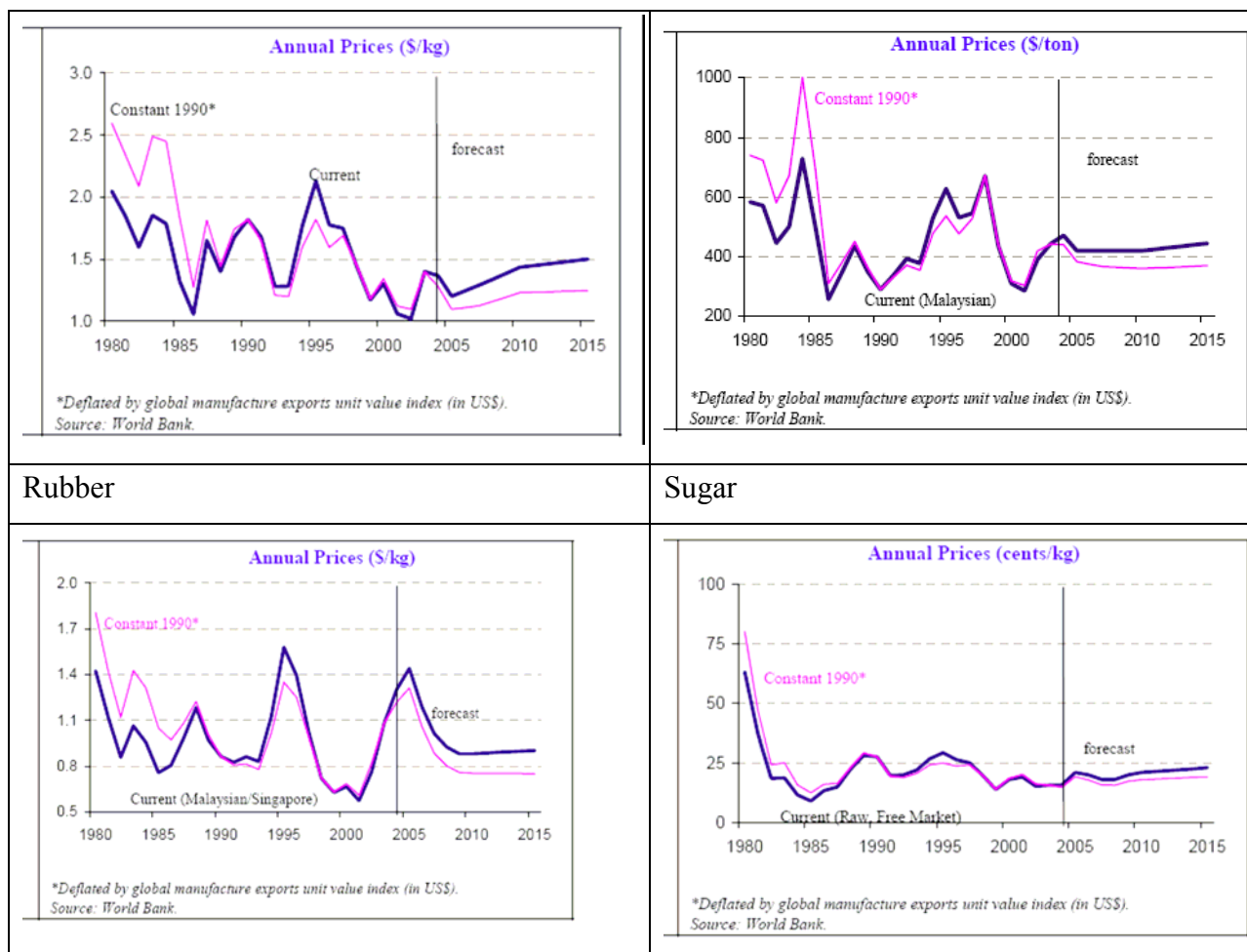
Figure 2: Median farm sizes in the developing world



Source: FAO Data from agricultural censuses

Appendix A: Trends and forecasts for prices of key agricultural commodities

Beverages	Cereals
Coffee  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.	Maize  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.
Cocoa  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.	Rice  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.
Tea  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.	Wheat  *Deflated by global manufacture exports unit value index (in US\$). Source: World Bank.
Others	
Cotton	Palm Oil



Source: World Bank commodity briefs