



World Vision

POLICYREPORT

Island nation or global citizen?

SOLVING THE FOOD CRISIS BY HELPING SMALL SCALE FARMERS

October 2011

A World Vision Australia **Advocacy and Policy Research** Publication



Preface

This *Island Nation or Global Citizen?* paper is the first in a series of policy reports from World Vision Australia that seek to provide guidance to a key current international issue by combining insights from a global expert and World Vision's experience working with 100 million of the world's poorest people. It continues our long-standing series of reports looking at how the Australian Government, Australian development NGOs and the Australian people can make a difference around the globe.

The world today is suffering its second recent food crisis and reductions in hunger have stalled. In East Africa millions are experiencing famine conditions – I have just been to the refugee camps in Kenya to try to convey the urgency of this issue to people in Australia. Around the world almost 1,000 million people are hungry and almost 200 million of these are children under five – this is a long term, silent emergency.

Since 2008 global bodies have begun to focus on food and agriculture, and upcoming meetings of the UN, CHOGM and the G20 will all be considering how to reduce hunger and improve nutrition for people in poorer countries.

It is widely recognised amongst policy makers and governments that greater assistance for farmers is critical – particularly for small scale farmers who make up the bulk of the poor and hungry in most developing nations. But how can we best help support the millions of small scale farmers around the world?

In this paper Steve Wiggins, from the Overseas Development Institute in the UK, proposes a clear strategy. The work that World Vision is already doing with farmers around the world is also highlighted.

I hope that policy makers, development staff and members of the public interested in the issues of food security and rural development find this paper an accessible and thought provoking resource.

Tim Costello

CEO, World Vision Australia



SUMMARY

Food prices are at near record levels around the world, there is a famine in East Africa and progress on MDG 1 – to reduce hunger – has stalled.

The World Vision International Partnership is working in almost 100 countries to try to improve food security and nutrition. We work in partnership with farmers, families and communities on the ground and at national, regional and global levels to ensure that policies and practices minimise hunger and maximise nutrition. Our special focus is on the first 1,000 days of each child's life from conception to age two, as these are the most critical for physical and cognitive development and establish the fundamentals of lifelong nutritional security.

World Vision has pushed for food and agriculture to be a focal issue of CHOGM and we are making four recommendations to the G20 to facilitate improved food security and nutrition for the world's poor:

1. Work with governments, the UN, other transnational bodies, civil society and the private sector to develop a global strategy and mechanisms that ensure early and effective response to prevent acute food insecurity and malnutrition.
2. Ensure that agriculture and food security policies and programs include improved nutrition outcomes for women and children as a key objective.
3. Implement systems and mechanisms that reduce extreme and volatile food prices by increasing market transparency and reducing the impact of biofuels on food prices.
4. Provide increased and better coordinated support for small scale farmers.

Recommendation four above has been echoed by many food security, agriculture and nutrition experts – but why is small scale farming so important and what sort of support is required? The purpose of this report is to answer that question.

Steve Wiggins has been working on agricultural and rural development in Africa and Latin America for almost 40 years and is a Research Fellow at the Overseas Development Institute (ODI) in the United Kingdom. In his paper, which forms the body of this report, Steve explains why the role of the 430 million small scale farmers in the world is so important to rural and broader national development and proposes a clear strategy to support rural development in general and small scale farmers in particular.

His recommendations, which World Vision Australia supports, provide a framework for countries, multilateral agencies and NGOs to analyse rural development needs and clear guidance for priority action to help small farmers.

The recommendations are:

1. **OECD countries need to reform their agricultural policies** that reduce returns to developing world farmers, such as export subsidies, high tariffs on processed agricultural produce, and payments to farmers that encourage production beyond what the market would demand. Policies to encourage biofuels need review, especially inflexible mandates on volumes of production.
2. Developing country governments, donor countries and NGOs should **continue to increase their support to agriculture and for smallholder development**. Donors need to provide that support in line with Paris Declaration principles – to assist national efforts with minimal conditions.



3. **Governments should stimulate agriculture through attention and investment in fundamentals:** creating a rural environment that encourages investment and innovation and removes obstacles to these; **providing rural public goods** – roads, investments in people, research, appropriate technologies and extension – and **resist spending on other things** (such as subsidies) that might detract from these fundamentals; and address failures in rural markets. Policy does not have to be perfect: making progress with these fundamentals almost always pays off.
4. Most of the agenda is straightforward, but addressing market failures such as reducing transaction costs in rural financial systems, or strengthening the property rights of poor people, is not. Therefore encourage FAO with IFPRI to **review experiences, synthesise lessons and spread cross-country learning**. NGOs and other civil society organisations also have an important role in assisting farmers to address market failures and in documenting and disseminating lessons.
5. **Climate change and water scarcity will become ever more critical** in the next two decades. Fund research into solutions, begin pilot programs, and make sure we learn from them. OECD countries need to commit the funds necessary to meet the challenge of climate change.
6. **Support the poorest, especially women.** Ensure their rights are observed and that well targeted social support is available where necessary. NGOs can play a key role in advocating for the needs of the poor and helping farmers work together to meet their needs.



Simple strategies can boost productivity: In Mozambique labour is scarce. Cultivating a hectare of land by hand can take as long as a month. However, with oxen, a hectare of land can be plowed in five days. To help farmers become more efficient World Vision introduced a program of animal traction and training. To enter the program farmers were required to pay \$324 and at the end they received a pair of young oxen, a plough and cart. While the program was subsidised the willingness of poor farmers to pay such a high entry fee demonstrated their interest and commitment. After one year farmers made an average of \$309 from ploughing and transporting activities. In fact the transport in rural areas of Mozambique is so scarce that transporting grain and other goods to market became a big income earner. Several farmers were also able to purchase more cattle with their earnings.



BACKGROUND TO THE CURRENT FOOD SECURITY AND NUTRITION SITUATION

Around 1,000 million people are now hungry and 200 million children in the developing world are chronically malnourished. MDG1 – to halve the proportion of people who suffer from hunger – is far off-target and progress seems to have stalled.¹

While there had been evidence for some time that progress on food security was too slow, steep food price rises in 2007-08 brought international attention to the issue.

In its December 2007 *Food Policy Report*, the International Food Policy Research Institute (IFPRI) talked of 'The world food equation, rewritten'. Both the speed of price increases in the main global food staples, and the extent of the price rises, forced a re-examination of the basic drivers of world food demand and supply. This examination of the causes of the 2008 food crisis is still underway. In part this is because the importance of various causes is being reassessed as new data and analysis becomes available. But it is also because the food crisis since 2010 has entered a second phase which reinforces the precarious and deteriorating food security position of many people on the planet.

Before considering the causes of the crisis, it is worth clarifying the concept of food security. Current thinking emphasises four main elements – availability, stability, access, and utilisation:

- Availability is about the productive capacity of agriculture and the effectiveness of markets to provide incentives to increase production.
- Stability relates to the ability of people to consume adequate food on a sustained basis. Hence it focuses on income volatility and the adequacy of savings or other reserves to act as buffers against food scarcity.
- Access is concerned with the ability of individuals to have control over the resources (including legal and social as well as economic) necessary to ensure a nutritious diet.
- Utilisation relates to the health, safety, nutrition and quality of food that allows people to actually benefit from the food that is available to them.

The food crisis which came to prominence in 2008 initially had greatest impact on food access, but has affected all the dimensions of food security.

Some basic data

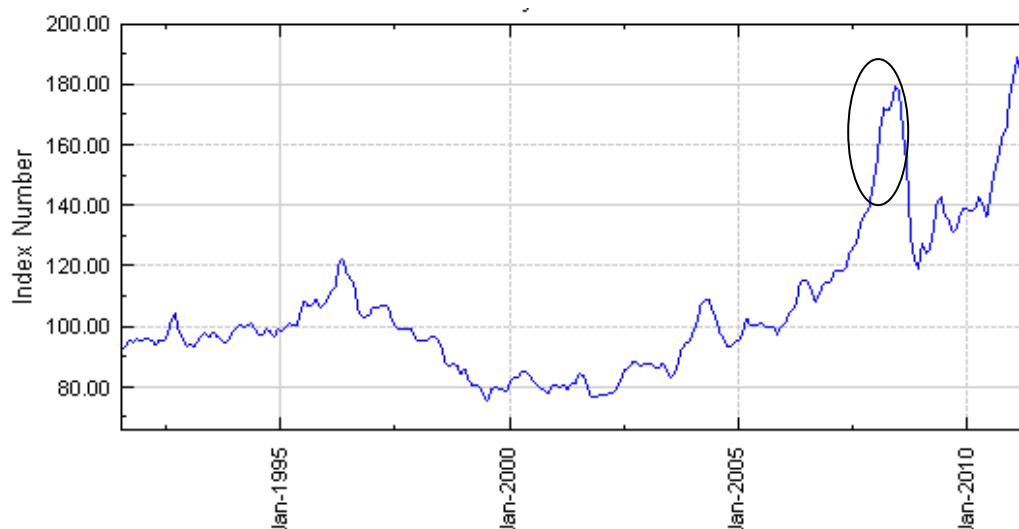
The scale of the price shock that peaked in 2008 is readily apparent from Figure 1, as is the second round shock that started to build from mid 2010.

The increases in the prices of staple foods varied, but all recorded substantial rises. From January 2005 to their respective peaks in 2008, wheat (hard red winter) prices rose by 186 percent, maize (US No.2 Yellow) by 199 percent, and rice (Thai 5 percent broken) by 252 percent. The prices of important regional staples also increased. For example sorghum prices rose by 191 percent over the period, and barley by 174 percent. As can be seen in Figure 1 prices did not return to previous low levels after 2008 and they have now climbed back again to similar peaks.

The increases in food price rises have been part of a wider commodity price boom. The boom is unusually broad based, and includes energy (coal, oil and gas), metals, fertilisers, and a range of industrial crops. In many of these commodities, the 2007-08 boom was also unusually strong, with price increases typically well above the average of earlier booms.

¹ UN MDG Report 2011

Figure 1 Global Food Price Movements



Source: Index Mundi. Commodity Food Price Index, 2005 = 100. Includes Cereal, Vegetable Oils, Meat, Seafood, Sugar, Bananas, and Oranges Price Indices

A complex phenomenon ...

The initial assessment of the food price crisis drew attention to a range of contributing forces including:

- Extremely low global cereal stocks.
- The actions of speculators on global commodity markets, who assumed that rising prices would continue.
- Expansion of biofuel production. A range of studies have estimated biofuels have contributed as much as 30 percent of the increase in food prices (IMF, FAO, IFPRI).
- Very inelastic supply responses in the short-term. IFPRI estimated that while global demand for grains increased by 8 percent from 2000 to 2006, prices rose by around 50 percent.²
- Export restrictions by a number of food exporters including India, Indonesia, Thailand, Kazakhstan and Vietnam in an attempt to keep domestic prices down.
- Climate change, as apparent in the severe drought episode in Australia and the Ukraine. Unprocessed food exports from Australia in 2007 were down 29 percent on 2006.³ The lack of water for irrigation meant that the area planted to rice in Australia was the smallest since the industry commenced in the early 1920s.⁴ Drought in the Ukraine in 2006 and 2007 reduced wheat production and saw the introduction of export bans.
- The impact of higher oil prices on food production costs, reflecting the growing importance of oil based inputs into farming (particularly fertilisers, pesticides, machinery and transport).
- Strong income growth, not just in the developed countries and China, but also in a range of poor countries. The IMF estimated that 22 of the 34 most food insecure countries achieved national

² Joachim von Braun op.cit p.5

³ Department of Foreign Affairs and Trade Summary of Australia's Trade http://www.dfat.gov.au/publications/stats-pubs/mtd/australia_trade_0208.pdf

⁴ ABARE http://www.abareconomics.com/interactive/08acr_feb/

income growth of 5-16 percent per annum between 2004 and 2006.⁵ Rising incomes have allowed increased demand for higher protein foods.

- Increasing urbanisation, with a rising share of national populations living in urban rather than rural areas, and demanding rather than supplying food.
- The changing diets of the burgeoning middle classes in China, India and elsewhere who are consuming more meat and dairy products – some of which is produced from grain-fed animals.

The peak in food prices in mid-2008 has continued to be studied. In 2010, Derek Headey and Shenggen Fan reassessed the factors cited as significant causes of the food price crisis in order to better determine their relative importance. On the demand side, they found little evidence that strong growth in China and India contributed much to the price surge, as both countries imported relatively little food. Further, while the energy imports of both countries (particularly China's) had been growing strongly, this was only one of a number of factors causing oil prices to rise. On the supply side, while the long run trend of declining yield growth in cereal production and related falls in investment in agricultural R&D is a genuine problem, neither its scale nor its geographical impact aligned with the food price crisis as it played out in 2007-2008. Similarly, Headey and Fan found little hard evidence that either low grain stocks or greater speculative activity in agricultural futures markets were major reasons for the price surge.

More convincing are four sets of forces:

1. Strong demand for maize for biofuels, which influenced not only maize prices but also the prices of close substitutes including wheat and rice.
2. A weak US dollar and strong foreign currency reserves in some countries which encouraged demand and put upward pressure on US dollar prices.
3. High oil prices which raised fertiliser, food production and distribution costs.
4. Some shorter-term events, notably drought in some major wheat producing areas, and some trade shocks, notably India's ban on rice exports.

... With complex outcomes

Sharp rises in the prices of basic foods inevitably hit the poor hardest, as the poorest people spend two-thirds or more of their income on food. The food crisis has probably pushed around 100 million more people into extreme poverty, living on US\$1.25 or less a day. However, the impact of high food prices cannot be seen simply as an across-the-board reduction in real income. Higher food prices have different impacts on different groups. As the World Bank has noted:

Despite widespread concern about the impacts of high food prices on poor people and social stability, little hard information appears to be available on actual impacts on poor people. The overall impact on poverty rates in poor countries depends on whether the gains to poor net producers outweigh the adverse impacts on poor consumers. Whether higher food prices improve or worsen the situation of particular households depends importantly on the products involved; the patterns of household incomes and expenditures; and the policy response of governments.⁶

Modelling by the World Bank⁷ has helped quantify the diversity of these impacts. Using growth in key food commodity prices between 2005 and 2007, two World Bank economists found that while the aggregate impact was negative on a group of nine developing countries, Vietnam and Peru would likely have benefited. Overall, the poverty rate for the nine countries was estimated to have increased by 3.0

⁵ Quoted in Joachim von Braun 'The world food situation' *International Food Policy Research Institute Food Policy Report no.18* (December 2007) p.1

⁶ Maros Ivanic and Will Martin 'Implications of higher global food prices for poverty in low-income countries' *World Bank* (April 2008)

⁷ Maros Ivanic and Will Martin *op.cit.* pp.15-17 and Table 5

percentage points, but to have fallen by 2.0 percentage points in Vietnam and by 0.2 of a point in Peru. On the other side of the ledger, poverty rates in Nicaragua and Zambia were estimated to have increased by 7.8 and 5.0 percentage points respectively. These findings depend on a number of definitions and assumptions, but do highlight the likelihood of different responses among the diverse group of countries classified as low income. Importantly, the study reinforced the idea that the impact of a global food price shock is considerably more complex than a regional famine episode resulting from adverse seasonal conditions.

The impact of price volatility on food security is also complex. A basic concern about price volatility is that it will discourage farmers, particularly poor smallholders, from increasing production when prices are high out of fear that prices will have fallen sharply by the time their increased harvest is ready for sale. Past episodes of price volatility have typically been short lived, but a recent study has raised the chance of increased volatility in the future. Possible causes include greater climate variability due to global warming, more volatile oil prices (which would affect food prices directly and through their impact on the attractiveness of food-based biofuels) and greater index-based speculation in food commodities. The impact of these various influences will not be apparent for some time, but any sustained increase in agricultural price volatility is likely to make at least some contribution to greater food insecurity.

Despite these qualifications, large and sustained rises in food prices have substantial consequences for the poor communities with which World Vision works.

RESPONSES TO DATE

In response to the 2008 crisis, the United Nations, G8 and G20 all took steps to ameliorate the short term crisis and support longer term solutions.

The Food and Agricultural Organization of the UN (FAO) convened a High Level Conference on Food Security in Rome in June 2008. The conference focused on the challenges of climate change, bioenergy, rising food prices and the drop in agricultural assistance to developing countries. Its concluding declaration called for coordinated action to increase food production, reduce trade restrictions and increase agricultural research.

The G8 Summit in Toyako followed in July 2008. Leaders issued a Statement on Food Security that called for short term relief, access to fertilisers, market liberalisation, agricultural investment and research, and improved infrastructure. The statement announced intentions to form a global partnership on agriculture and food including all relevant actors from rich and poor countries.

Then in 2009 leaders at the G8 Summit in L'Aquila approved the L'Aquila Food Security Initiative (AFSI). The initiative committed to a goal of US\$20 billion investment in rural development in poor countries over three years (later increased to US\$22 billion) from G8 and AFSI partners. Leaders also called for a reduction in trade distortions, strengthened global and local governance, increased financing of agriculture, access to seeds and fertilisers, and greater involvement of civil society and the private sector.

As food prices dropped after their peak in 2008 international attention turned elsewhere, however when prices began to rise significantly once more in 2010 concern about food security lifted once more. Government leaders and officials met in Rome for the World Summit on Food Security in November 2010. The Summit's Declaration pledged renewed commitment to eradicate hunger, reverse the decline in agriculture funding and promote new investment in rural infrastructure and agricultural research. Heads of State and Government agreed to base their commitments on the Five Rome Principles originally launched at L'Aquila: investing in country-owned plans, fostering strategic coordination at national, regional and global level, striving for a comprehensive approach, ensuring a strong role for the multilateral system and ensuring a sustained and substantial commitment to invest in agriculture, food security and nutrition.



Since 2008 there has been some significant action to lift support for agriculture and improve response mechanisms but as of June this year only a little over half of the L'Aquila money had been allocated⁸ and the share of internal aid to food security and rural development remains historically low.

The G20 is now considering recommendations from a range of expert bodies including the UN, World Bank and OECD on strategies to reduce food price volatility, improve agricultural productivity and build food supply resilience. The G20 Development Working Group recently recommended that G20 leaders place smallholder producers at the core of food security policies.⁹

But why are smallholder producers so critical and what policies would actually help them?



Working with nature to increase yields and build resilience: Where appropriate, World Vision assists farmers to rehabilitate their farmlands and cope with the challenges of climate change through Farmer Managed Natural Regeneration. Developed by Tony Rinaudo of World Vision Australia, this approach re-establishes traditional coppicing of trees on farmland which reduces erosion, provides organic matter for the soil and timber for domestic use, and shade and fodder for animals. The practice had been lost to large areas because of poverty and resource pressures, poor land management strategies and a lack of farmer security over land. To date it has transformed millions of hectares of degraded farmland across Africa and doubled farmers' incomes. Farmer Managed Natural Regeneration is low-cost, rapid, not dependent on external inputs, and easily replicated. Here Halidou Gangara from the Maradi Region of Niger inspects his garden showing crops growing right up to the base of the trees.

⁸ 2011 Deauville Accountability Report on G8 Commitments on Health and Food Security.

⁹ 2011 Report of the Development Working Group – Version Post Paris Meeting, September 2011

SUPPORTING SMALL SCALE FARMING

Steve Wiggins, Overseas Development Institute, UK

WHY SUPPORT SMALL SCALE FARMERS?

The need to invigorate agriculture is now widely accepted: the declarations from the G8 summit at L'Aquila and the G20 at Pittsburgh in 2009 make this clear.

Yet despite the large majority of the world's farms being smallholdings – see Box A – there is less agreement that increased agricultural production will come from small farms. Indeed, some doubt the potential of small farms, arguing that they lack economies of scale, capital to invest and know-how necessary to succeed in a globalised and competitive world. Here is Paul Collier (2008) writing about Africa:

... reluctant peasants are right: their mode of production is ill suited to modern agricultural production, in which scale is helpful. In modern agriculture, technology is fast-evolving, investment is lumpy, the private provision of transportation infrastructure is necessary to counter the lack of its public provision, consumer food fashions are fast-changing and best met by integrated marketing chains, and regulatory standards are rising toward the holy grail of the traceability of produce back to its source.

His doubts are often shared by political leaders in the developing world. The suspicion that smallholders are ill equipped for progress – indeed that they are imbued with 'traditional' and conservative attitudes that makes them actively resistant to progress – is longstanding.¹⁰ Many governments have translated these views into low budgets for small scale agricultural development, and worse, the adoption of policies that have not only favoured urban interests but also taxed the peasantry, at times severely (Lipton 1977, Krueger et al. 1991).

Box A What is a small farm?

There is no universally accepted definition of a small farm. 'Small' may refer to number of workers, capital invested, or amount of land worked. Land is the criterion most commonly appreciated, but given the differing potential of land in soil quality and rains, a single measurement hardly captures the sense of limited resources.

With these qualifications, FAO has adopted a two hectare threshold as a broad measure of a small farm. There are roughly 450 million farms in the world smaller than two hectares (Nagayets 2005). They are home to some 32 percent of the world's population: within the developing world, there are 430 million, home to 39 percent of the population. **Half the undernourished in the world, three-quarters of Africa's malnourished children, and most of those in absolute poverty live on small farms** (IFPRI 2005).

Interestingly, while average farm sizes in OECD countries have long been rising, in most developing countries rapid population growth means that rural populations are rising despite out-migration to urban areas, resulting in falling average farm sizes. Hence the number of small farms is, if anything, increasing.

A better way of capturing one of the most important characteristics of small farms – the management of labour – would be to refer to farms operated by families, where both management of the farm and most of the labour come from the household. Family farms can operate quite large areas when operations have been mechanised. Most farms in OECD countries remain household enterprises.

¹⁰ It is no surprise, then, that the term 'peasant' – derived from the French for persons from the countryside – is often used to disparage small farmers.

The case for smallholder development

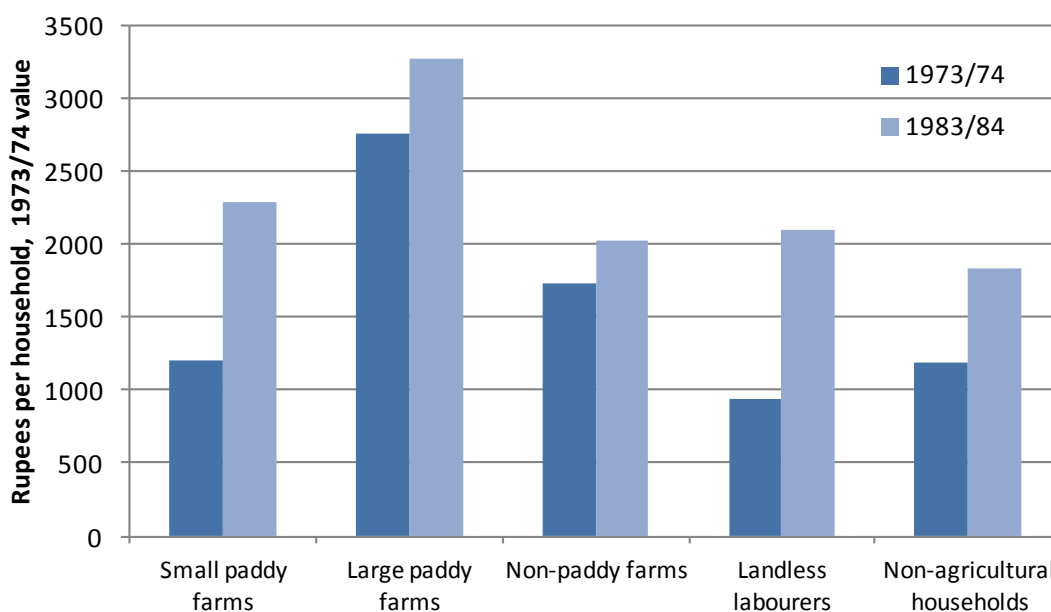
With about 430 million small farms in the developing world, the case for agricultural development based on smallholdings needs to be restated. Three linked arguments are central:

1. Smallholder development can lead to the **direct reduction of poverty and hunger**, given the high incidence – see Box A – amongst those living on small farms. This effect is greater than would apply were increases in agricultural production to come from larger farms, by creating jobs for workers from smallholdings, for the next two reasons;
2. **Small farms use labour more intensively than larger farms.** Farm labour can vary considerably by effort and quality since operations depend heavily on manual skill. Hence hired labour requires supervision, at higher cost than household labour that is effectively self-supervising. Hence surveys repeatedly show that small farms use more labour per unit of land than large farms;
3. Smallholder development can create **strong links to the rest of the rural economy**, both through hiring in extra labour from neighbours at peak times (small farms have lower costs in contracting labour than larger farms) but above all through consumption links. When small farmers spend extra income, they tend to spend locally – on better housing, simple furniture, clothing, entertainment, education for their children, etc – so that jobs are created in the rural economy. See Box B for a remarkable example from the green revolution in southern India. Larger farmers, on the other hand, may spend much of their additional income on goods brought in from urban economies.

Box B Multiplier effects in a rural economy: Tamil Nadu in the 1970s

During the 1970s in North Arcot District, Tamil Nadu modest increases in produce from irrigated farming – as green revolution varieties of rice generated average production increases of 1.5 percent a year over the decade – led to a doubling of real incomes and welfare of the poorest in the surveyed villages, including landless labourers (see Figure B1).

Figure B1 Changes in real incomes, resurveyed villages, North Arcot District, Tamil Nadu, 1973/74 and 1983/84



It appears that increased production of rice, plus the introduction of dairy cattle on a small scale, led to more demand for workers in input supply, in processing and marketing of produce, and in local services and manufacturing to meet the demand of farmers with additional incomes. Moreover, it seems that small farmers withdrew from the rural labour market: their more productive farms now absorbed household labour, while income rises made working for low pay off the farm unattractive. The combination of reduced supply of labour and increased demand for workers meant more paid days and increased wages for landless labourers, thereby generating the remarkable improvements in incomes seen.

These results depended on conditions that applied at that time: for example, it helped that the new rice technologies tended to require more labour since most operations could not readily be mechanised; similarly the dairy development was intensive in labour. In addition to promoting these technologies, the government was at the same time investing in rural roads, electrification, training, and offering subsidised credit – often with grants – to small businesses in rural areas: all of these helped the response to the stimulus of faster agricultural growth. Source: Hazell & Ramasamy 1991

Three arguments are often voiced against focusing agricultural development on small farms, although all can be rebutted. These are:

1. Small farms are inefficient, because smallholders may lack capital and the ability to buy fertiliser, good quality seed, or to invest in irrigation, and so on, or because they are too small to capture economies of scale. Were this the case, **one might expect that yields on small farms would be lower than those on larger farms; but most surveys show the opposite, that yields on small farms are higher than on large farms.** It is also notable that most renting of land is from larger to smaller farms: if larger farms were more efficient this would not make sense. Economies of scale are surprisingly limited in most agricultural enterprises. This is one reason that across the world, the majority of farms are operated by families at the scale they can manage, rather than by corporations farming tens of thousands of hectares.
2. Even if small farms have had advantages in labour management and local knowledge, new technologies may require information, expensive machinery or costly inputs that small farmers cannot afford; while increasing requirements for quality, consistency, timeliness, and traceability through the supply chain favour larger-scale farms. These points are most likely to apply to high-value produce grown for demanding customers using sophisticated technology, as usually applies with flowers, fruit and vegetables.

Clearly these developments can marginalise small farms. In Kenya, the application of EurepGAP codes in 2005 to horticultural produce caused the collapse of exports of baby corn, passion fruit and green beans from small farms enrolled in the DrumNet scheme, since small farmers could not afford the costs of auditing and certification (Ashraf et al. 2008).

Yet not all agricultural produce is subject to such demands: the supermarkets may dominate supply chains in some countries, but not all (Traill 2006). Moreover, when supermarket buyers have no alternative to sourcing from smallholders they have sometimes proved willing to invest in technical assistance and credit systems to small farmers to improve the quantity, quality and reliability of supplies (Reardon et al. 2005).

3. Small farms will decline in the future, so why support them now? In the long run, as seen in most OECD countries, farm sizes grow, the number of farms falls, the share of the labour force working in agriculture shrinks, and indeed the contribution of farming to the economy as a whole falls relative to other sectors.¹¹ Hence to support small farms would seem only to delay the inevitable, wasting resources.

¹¹ A deceptively appealing argument, it overlooks the nature of structural transformations as economies go from being rural and agrarian to urban and industrial. If agriculture is neglected and rapid improvements in farm productivity do not take place, then it is not possible to release factors

While it is possible to change the scale of farming quite dramatically, moving land from smallholders to large-scale farmers, the social consequences can be disastrous since rarely do the large farms provide enough jobs to compensate for the livelihoods lost by former small farmers. Instead the result has usually been either mass migration – think of the clearances of the Scottish highlands, the subsequent emigrations to North America, Australia and New Zealand, or deep poverty for the landless, as was the fate of the English peasants after the waves of enclosures that expropriated land from small farmers in favour of large farmers in from the 17th to the first half of the 19th centuries. Not only were the enclosure and clearances unjust, but also it is questionable whether they were necessary to achieve growth. In New Zealand, for example, the redistribution of land from estates to family farms between 1870 and 1910 arguably accelerated agricultural growth while creating a more equal and politically stable society (Hawke 1985, Sutch 1942).

Rapid concentration of land is neither necessary nor desirable. Since agrarian structures will change over decades, in the meantime, policies are needed for small farmers to allow them to earn livelihoods – and to allow those whose farms will become full-time commercial operations in the future to invest and innovate to lay the bases for commercialisation and intensification. How this may happen is the subject of the next section.

POTENTIAL PATHWAYS OF AGRICULTURAL DEVELOPMENT

Two scenarios for the future of rural areas in developing countries can readily be imagined. One is a frequently invoked nightmare. Agriculture stagnates, rising rural populations work ever smaller plots more intensively but to limited effect. In the process they degrade soils, clear forests, overdraw aquifers. As the resource base declines, impoverishment accelerates. Millions of former farming households migrate in desperation to the cities, creating huge slums of poor people searching for the few jobs on offer.

The alternative sees thriving agriculture that produces staples at low cost as well as higher value foodstuffs and industrial crops, thereby increasing food supply, providing raw materials for industry, and generating a surplus for exports to earn foreign exchange. Farmers spend increased incomes and thereby stimulate the rest of the rural economy, as well as providing a market for infant domestic industries. Productivity rises on farms, allowing labour, capital and land to be transferred to manufacturing and services.

Urbanisation takes place at a moderate pace. Those migrating from rural to urban areas do so having made an informed choice: they have a decent living in the rural areas, but can see better paid jobs in the towns and cities. Migration from rural areas goes to a broad-based urban hierarchy where there are many thriving small towns and secondary cities, rather than a megalopolis; these centres helping serve their regions, so that development is reasonably spread across the landscape. To complete the ideal, rising farm productivity allows farmers to invest in their land, to conserve resources and maintain ecological functions.

Clearly the latter is better than the former. Before considering how it may be achieved, a review of rural differentiation will show that the latter is so much more achievable if agricultural development is broad-based, with a major role for small farms.

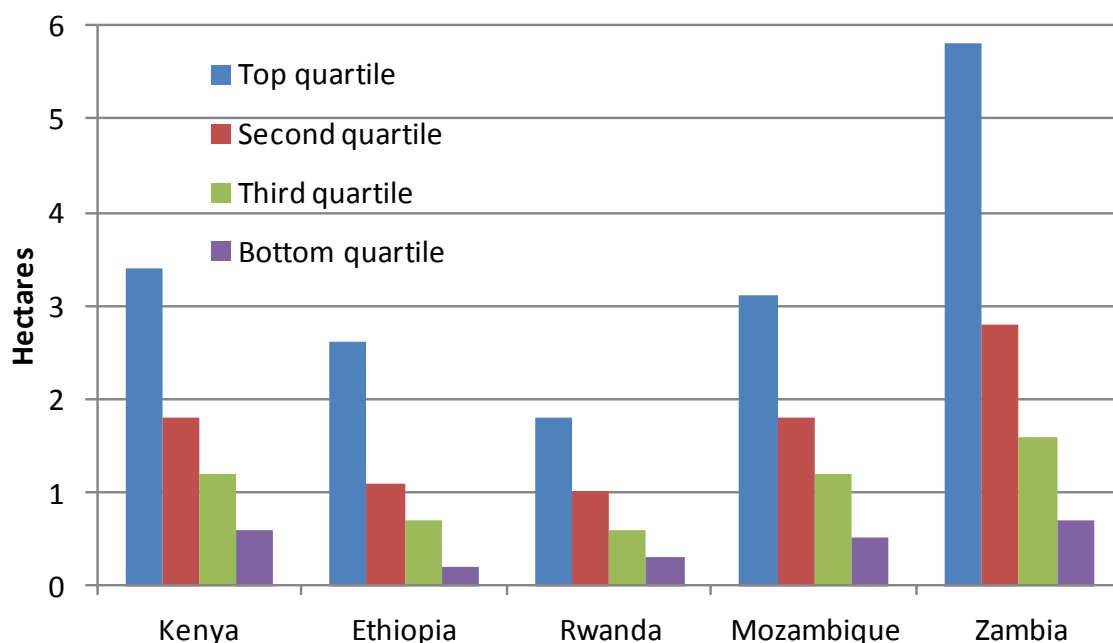
Rural differentiation

Surveys in rural areas of the developing world repeatedly show considerable economic differences between households. For example, **even in relatively egalitarian rural societies – as applies in much of Africa or the ejidos of Mexico – access to land is often remarkably uneven.**

of production to allow urbanisation and industrialisation (Timmer 2009). Hence the paradox of agricultural development: the more rapid and successful this is, the faster agriculture becomes a small part of the economy.

Gini coefficients¹² of land access are rarely less than 0.7 while those for livestock are often higher – implying high degrees of inequality. Figure 2 provides a dramatic example in five countries of eastern Africa. When farmers are sorted by per capita land size, generally only the top quarter of farm households have two or more hectares: often 50 percent or more have less than one hectare, and the bottom quarter have half a hectare or less per household.

Figure 2 Land distribution amongst small farmers in East and Southern Africa, late 1990s. Average land sizes for farmers by quartiles



Source: Derived from Jayne et al. 2005 reporting results of surveys of small farmer communities in the 1990s

It is therefore not so surprising that income differences between rural households can be quite high. For example, surveys of 28 rural regions in seven countries carried out in late 2007 and early 2008 (Losch 2009) found only 8 out of 28 regions with Gini coefficients of household incomes less than 0.4.

Across the world, it seems, rural households have differing access to land, labour, capital, education and so on that allow some better options and returns for their effort than others. Several frameworks have been proposed to look at the policy implications. The OECD (2006) has classified rural households into five 'rural worlds', namely: large commercial farms, smallholders who produce commercially, smaller farms mainly devoted to subsistence, landless labourers, and households barely surviving that need social assistance. The World Bank (2007) in its flagship World Development Report for 2008, *Agriculture in Development*, proposes that rural households have three pathways out of poverty: agriculture, non-farm jobs, and migrating. Equally simply, Dorward (2009) sets out **three options for rural households**:

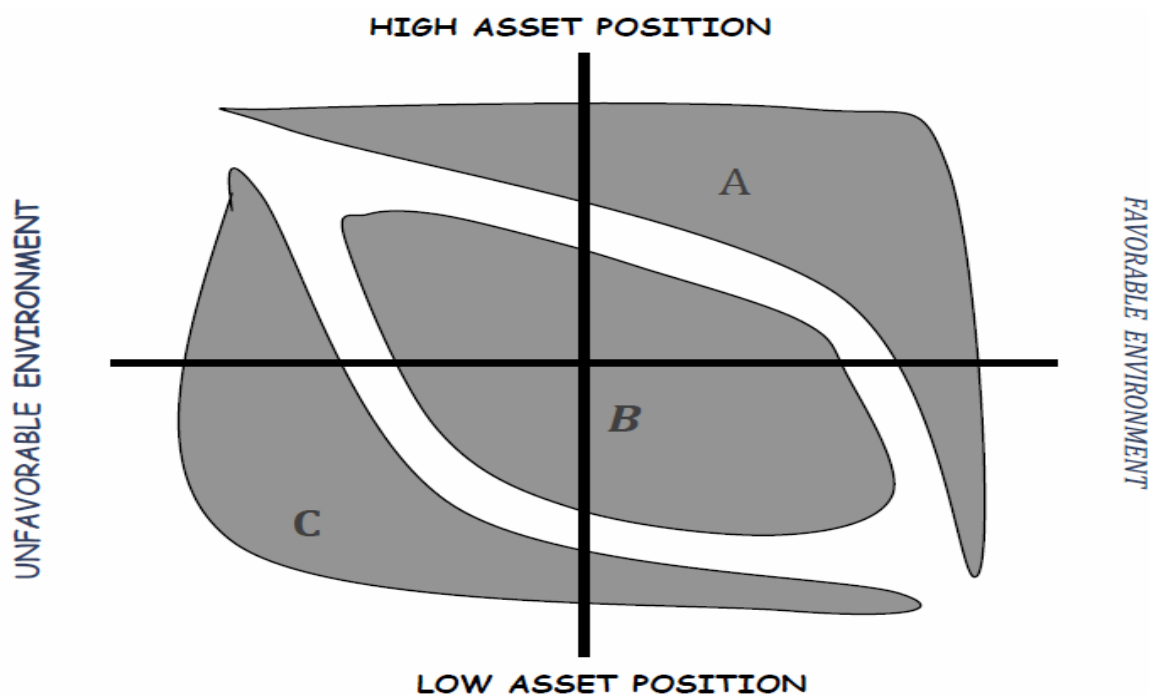
- **Stepping up** - intensify farming through improving transport, facilitating access to inputs and credit, investing in technology and through farmer organisations;
- **Stepping out** - into the non-farm economy by more education and skills, better health care, and providing potential migrants with information on opportunities, conferring on them transferable rights as citizens and facilitating remittances; and,
- **Hanging in** - providing social protection for those who have few assets and options, investing in technology for food staples to allow them to make best use of their small plots, and making sure that the next generation get a better start than their parents through primary health care, infant nutrition, and schooling.

¹² A Gini coefficient is a measure of inequality between 0 and 1 – the closer to 1 the greater the inequality.

In these schemes, it is implicit that **only some households that currently farm will be full-time small farmers in the future**. The question is: how large a share of the current farming population might this be? Looking at Figure 2, and imagining that in most areas – peri-urban excepted – it will be difficult to run a full-time farm on less than two hectares, suggests that one quarter or less of the rural population can look to a future with an intensified small farm that provides a living for the household.

A more detailed estimate comes from the work of RIMISP, the Latin America network for Rural Development. They divide family farms into three categories, defined by household assets and the environment of the household, the latter a combination of market access plus physical conditions for farming – see Figure 3.

Figure 3 RIMISP’s types of family farms in Latin America



Source: Berdegú & Fuentealba 2011, based on Berdegú & Escobar 2002

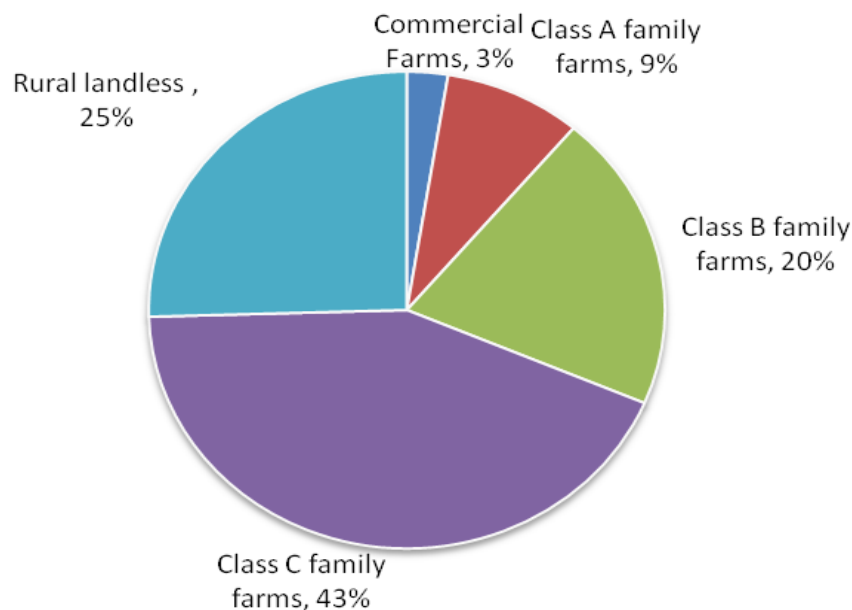
Note: A = Consolidated household farms; B = Transitional household farms; C = Subsistence household farms

Class A farmers (consolidated households) have the assets, access to market and natural resources to produce more, commercialise and escape poverty in the short run. Subsistence households in Class C, in contrast, have fewer options: they lack assets, access to markets and good natural resources to farm their way out of poverty: most of their income comes from off-farm labouring, migration, and transfers. That said, for this group, farm production may be critical to survival, especially when opportunities off the farm are scarce. In between are the Class B farmers, households that have some assets, access to market and natural resources. Given some public support to overcome their current disadvantages, they may be able to join the Class A households as full-time small farmers.

RIMISP (Schejtman 2008, Soto Baquero et al. 2007, cited in Berdegú & Fuentealba 2011) have estimated the number of rural households that may lie in each of these groups for twelve Latin American countries,¹³ to which may be added households that operate large commercial farms and the landless. Figure 4 shows the resulting distribution of the nearly 19.5 million rural households living in the twelve Latin American countries in 2008. The striking result is that no more than one third of rural households have a reasonable prospect of leaving poverty as full-time farm households. Most of those in the other two-thirds need other options to complement whatever farming they do.

¹³ Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Nicaragua, Paraguay, Peru & Uruguay.

Figure 4 Estimated Distribution of Rural Households in Twelve Latin American Countries, 2008



Source: Calculated using data from Berdegué & Fuentealba 2011, FAOSTAT data on rural populations

Ponder the implications, if these proportions are roughly correct. If agricultural development in these twelve countries were to rely on large commercial farms alone, then only 3 percent of households will operate farms: the other 97 percent have to find work on those farms, or off farms. If the most favoured Class A smallholdings can be developed as well, then 12 percent of households would operate farms and 88 percent would have to find work on those farms, or off farms. If all those small farms that have sufficient potential can also be developed, adding Class B farms, the ratio becomes 32 percent to 68 percent.

How many jobs are likely to be created rurally in these three cases, and hence how many rural households might be forced to seek jobs in the cities? The multiplier from family labour of farms to jobs for others would need to be 32, 7.3 and 2.1 in the three cases. The first two multipliers are so large as to be unlikely: were agriculture to develop along the first two lines, then either large-scale migration from rural to urban areas or a large pool of rural unemployed, living in dire poverty, would be the likely outcome. It thus seems that only the third option, where mid-resource producers are able to generate an on-farm living, will generate enough jobs. Therefore if we want to allow rural people to escape poverty we need to help broaden the base of agricultural and rural development.

Even in this case, only one third of rural households would base their livelihoods on full-time farming. What then happens to the remaining households, and above all to the Class C households who farm, but with too few assets or in difficult environments? Class C farming households will not necessarily abandon their farms, even if they are insufficient in size, productivity or location to provide the household with a living. Most likely they will farm what little land they have, using most of it to grow staples, vegetables, perhaps produce some milk, eggs, and chicken – all largely for household consumption. As and when incomes rise from off-farm work, these households may sell off or rent out their land to neighbours who are full-time farmers.

This, then, sets a two-part policy agenda: how to promote smallholder development, including the Class B (ie mid-resource) households; and how to stimulate linkages in the rural economy so that agricultural development helps create decent jobs for the rest of the rural population.



POLICY FOR SMALLHOLDER DEVELOPMENT

Understanding policies for agricultural and rural development

There are many ways to classify policies for agricultural and rural development, most often by sub-sector or topic such as irrigation, agricultural research, etc. Here I will use a scheme that orders policies hierarchically, beginning with the more general – and potentially most powerful – and running down to more specific policies, as follows:

- Improve the rural investment climate: law, order, macro-economic stability, competitive exchange rate, relatively low interest rates, business regulations that do not deter investors, taxes modest in impact but broadly shared, etc.;¹⁴
- Provide public goods: physical infrastructure – rural roads, electricity, perhaps large-scale irrigation and drainage where applicable; human development – education, water and sanitation, health; and public knowledge through research and extension;
- Remedy failures in rural markets.¹⁵ Farmers and rural businesses often face difficulty in obtaining inputs and credit from commercial providers, since transactions costs can be high. Some intermediaries in rural areas have monopoly power by which they extract undue returns. Rights to land may not always be secure, discouraging investment in the land and its conservation. Each of these can mean that investment and innovation does not take place, even when it would be profitable. Remedying these failures may involve promotion of institutions such as contract farming or land registration; co-operation by farmers to reduce transactions costs; or even direct state action to replace the market where it does not function;
- Transfer working or investment capital, in the form of grants or subsidies in inputs and capital goods, to (usually small-scale, often informal) producers on grounds of failure of credit markets or poverty of producers; and,
- Transfer payments for consumption, in kind or cash, to households in need.

The list descends from measures likely to benefit everyone, to those that can be increasingly focused on geographical areas, or groups of people, to those that can be directly delivered to specific households or individuals. Higher order policies can be seen as necessary, but not sufficient, conditions for the advancement of different rural groups. The administrative costs of policy tend to rise moving down the list: it requires little administrative effort to adjust exchange or interest rates; while delivering cash transfers to specified households may need a small army of staff.

Which policies are most appropriate to different households in rural areas? These policy categories can then be matched against the needs of the different groups: the three types (A, B, and C) of family farms discussed with the landless added to Class C, plus large-scale commercial farms and the chronically poor households where no-one can work on account of age, severe disability or sickness. Figure 5 uses a matrix of policy categories against groups of households to show how this may be done.

¹⁴ Recall the strong arguments mounted in the 1980s about the chronically unfavourable investment climate faced by many smallholders at the time, on account of 'negative protection' – in the form of overvalued exchange rates, heavy industrial protection, onerous taxes on export crops, and the heavy costs of some public marketing boards (see Schiff & Valdés 1992).

A plea for an encouraging rural investment climate should not be read as a pitch for very low taxes, no regulations, and public subsidies to private enterprise. The key here is to remove the more egregious obstacles to investment, such as rampant inflation, insecurity, threats of expropriation, red tape, and very high taxation.

¹⁵ Strictly speaking, providing public goods responds to a market failure since private enterprise will not otherwise supply these in adequate quantity. Market failures also include externalities – perhaps the main case in rural areas arises with environmental harm; as well as social inequity: the final category of policies in the scheme, transfers, responds to this concern.

Figure 5 Policies mapped against household groups

	<i>Large-scale commercial farms</i>	<i>Class A family farms</i>	<i>Class B family farms</i>	<i>Class C family farms + landless</i>	<i>Chronically poor</i>
Rural Investment Climate					
Rural Public Goods					
Correct Market Failures			Private Sector Approaches	Private or State Action	
Transfer Working or Investment Capital to Producers					
Transfers to Consumers					

Action required in blue. Source: Own construction

Priority policies for smallholders

It can readily be appreciated that there is **no single package of policies for smallholder development: different households, with varying access to land and other assets, in different environments will have different needs.** That said, the classification makes some things clear. Six points stand out, as follows.

1. An encouraging rural investment climate and supplying rural public goods such as rural roads and agricultural research are necessary but not sufficient conditions for agricultural and rural development

These measures simply have to be in place if private and co-operative initiatives are to be rewarded. The good news is that most of what needs to be done here is straightforward: the objectives are widely agreed, while the ways to achieve them are reasonably well understood. In the case of many of the measures to ensure an encouraging climate for investment, financial costs can also be low – although the cost in political capital may be higher.

It is not for nothing, then, that Berdegú & Fuentealba (2011) argue for these two measures with a passion. In Latin America they believe that those who have been left out of agricultural booms have been marginalised more by context, rather than by their lack of assets. They state:

A key proposition of this paper is that the performance and the development potential of smallholders, depends to a very significant degree on the characteristics of the proximate context in which they make decisions. While this statement is not controversial, it is nevertheless true that the vast majority of the smallholder development programs and policies are aimed at improving the assets of the farm, of the farm family or of the farmer, with little effort to changing or influencing contexts.

[Berdegú & Fuentealba 2011]



The same applies to other parts of the developing world: when agricultural development has faltered, amongst the main factors responsible are almost always contexts that discourage investment – including conflict – and lack of rural public goods.

The more favoured enterprises and households, large-scale commercial farms and Class A family farms, need little more from the state than these two fundamentals to invest, innovate and raise incomes. As one moves from the more favoured to the least favoured groups, the range of measures that may be needed increases – as shown in Figure 5.

2. High transactions costs, insecure property rights, and monopoly power – market failures – hammer the rural poor

Poor households suffer more from market failures than others.¹⁶ The poor and disadvantaged are most likely to face high transactions costs when dealing with banks, input suppliers and traders; they are most likely to be exploited by monopoly power, since they have few options to circumvent monopolistic intermediaries; they are least likely to have secure rights to the land, water and forests they use. Women farmers often suffer disproportionately, since their rights to land are often less well established than those of men, while they often suffer in market deals for lack of education, language, social ties, information, and prejudice against women.

Large-scale enterprises, in contrast, face fewer and less severe market failures and in any case have the resources to correct or work around them. Some Class A farm households may be similarly fortunate. For everyone else in rural areas, overcoming or at least mitigating market failures is the challenge. It may be possible to correct them by working with the private sector; for example by linking small producers to larger enterprises to obtain inputs, credit or reliable buyers – an approach much in fashion with donors at the moment. Contract farming is a good example of a concrete manifestation of this – see Box C.

An alternative is collective action by small farmers, by forming associations to cut down on transaction costs and to develop countervailing power to monopolists. Given past experience with co-operatives, the difficulties and dangers should not be underestimated; but they should not be exaggerated either – some have come to believe that farmer co-operatives always fail.

It may be tempting just to replace the market by direct state supply of credit, insurance, inputs, and marketing services. Again, past experience shows many failures of public agencies providing these services. Too often they have been prone to ineffectiveness, inflexible, slow to react to changing circumstances, bloated with high staffing, weighed down by political demands, and eaten out by corruption. None of these are inevitable: some state agencies have performed admirably – for example, the Kenya Tea Development Authority – and some have been reformed to become effective agencies – Ghana's cocoa marketing board, Cocobod, for example. The ingredients for making state agencies work are well known: able management, clear leadership, a close focus on a limited remit of core functions, and so on. But getting these in place and avoiding the many pitfalls demands leadership, good judgment and the willingness to learn from mistakes.

¹⁶ For some, observing the difficulties of agricultural and rural development in rural Africa, market failures are so severe that they constitute poverty traps: farmers are too poor to afford fertiliser, cannot get credit, and hence produce low yields that condemn them to poverty (Sachs et al. 2004, CPRC 2008). It is not clear, however, that the failures are always quite so severe: for other observers, they are more often sand in the machine, slowing development, rather than spanners that bring it to a halt.

Box C Contract farming

Small-scale growers may farm on contract to buyers and processors who provide farmers with inputs, technical assistance and marketing, in return for an assurance of getting regular supplies from them. Processors usually have access to sufficient capital to advance inputs since they have low transaction costs with banks. In a good contract scheme, both parties have incentives to make the deal work. Processors get their supplies without having to incur the costs and risks of agriculture, while small farmers, who often lack access to credit, get inputs, know-how, and a ready market at a guaranteed price.

Many instances of contract farming can be found across the developing world, usually for higher value products. In Cambodia, for example, *Angkor Kasekam Roungrœung (AKR)*, contracts rice farming. A family business that mills and exports fragrant rice, AKR gives farmers a special variety of seed and provides technical assistance on rice as well as on feeding fish, cows and natural fertilisation through more than 100 field workers. It promises to buy up the output at a guaranteed price with a subsequent bonus depending on market conditions at time of milling. By 2008 around 45,000 farmers with an average holding of 1.7 hectares, organised in groups, were contracted (Cai et al 2008, ACI/CC 2006, interviews by Wiggins 2008).

In Senegal, a private firm, *NOVASEN*, mainly owned by Senegalese and French investors, contracts 32,000 farmers (2000) to grow sweet groundnuts – *Arachide de Bouche* – for confectionary exports. A review of impacts (Warning & Key 2005) found that the programme recruited wealthy and poorer farmers equally. Contract farmers' incomes significantly increased, with multipliers for economic growth, infrastructure and employment in the region.

Success in contract farming depends on there being a good business opportunity, one that neither contractor nor farmer could easily seize without the participation of the other. This is possible when small farmers have secure land rights, but have limited options to sell to other buyers. It depends on the market being reasonably stable and the promised price being close to the spot market value.

Contract farming often does not need government intervention. Such schemes bring together small farmers with often large businesses, and the inevitable imbalance of resources, information, and sometimes political influence, can be abused. Hence a useful public role – for government and NGOs – is ensuring that farmers' land rights are secure, that farmers have access to information on technology and markets, and farmers are helped to negotiate a fair deal (Vermeulen & Cotula 2010).

Governments may further encourage contracting by facilitating contacts, and providing information including model contracts. Government may choose to monitor, supervise or regulate contracts. It may go as far as to underwrite promising schemes, guaranteeing returns to investors and farmers; providing key public goods, such as roads; or even subsidising the initial investments.

3. There are few trade-offs between promoting agriculture and the rural non-farm economy

Measures that favour agriculture and those that promote the rural non-farm economy overlap: both need a favourable investment climate and rural public goods, both face similar market failures in access, for example, to credit and inputs.

Where the needs of the different sectors differ, such as with agricultural research or rural business services, these tend to be services that are less expensive than programmes such as providing rural roads, education and clean water.

Hence there is little need to worry about how much to favour agriculture as compared to other rural enterprises: this is largely a false and unhelpful dichotomy when debating policy.

4. Transfers and subsidies to producers can be dangerous: use with great care (if at all)

When poor rural households cannot get access to credit, it is tempting to resolve the market failure by simply transferring the resources to them, either as a grant or through a heavy subsidy. There are times and places when this may be justified: but they are few and far between (Brooks & Wiggins 2011). The dangers of such transfers are all too apparent. They can be costly, costs often rise through time, and once

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in place they can be very difficult to end, even when the original aim of the transfer has been met. Above all, they divert funds that should be going to rural public goods.

Surveys of nine countries in Latin America show that the bulk of the budgets for agricultural development from 1985 to 2000 were spent on private goods and transfers to the detriment of the supply of rural public goods. To make matters worse, in some countries the transfers go not to poor households where they may be justified as correcting social inequality, but mainly to large-scale enterprises (de Ferranti et al 2002). In India, subsidies on rural electricity, fertiliser and irrigation water rose during the 1990s to represent over 15 percent of the national budget: more than India spent on public education. It may be no coincidence that as this happened, spending on public goods in rural areas fell – and so did the rate of growth of agriculture (Chand & Kumar 2004).

Hence the recommendation is that any subsidy programme should be 'smart': targeted to those producers who really need the subsidy on grounds of market failure or social equity, delivered in ways that do not undermine the development of private markets for inputs and financial services, and limited in time.

5. Subsistence farmers, often part time, need technologies that require little capital and entail low risk

If Class C farm households remain in farming, as many will for the short and medium terms, what policies do they require? In large part, the same as apply to other smallholders: a favourable investment climate, public goods, and mitigation of market failures. But they would also benefit from the public supply of technology appropriate to them: technology to develop staples and small-scale animal keeping that requires little capital, entails low risks and preferably economises on labour as well. These are likely to be intermediate technologies that do not necessarily produce high yields.

Gains here may be unspectacular compared to potential yields given optimal inputs, but of great value to households living in poverty with small plots. For a poor household with only half a hectare to sow, going from harvests of 400kg to 800kg of grain can make the difference between buying in grain for 9 months, to buying only for 3 months – based on a household of five persons with annual average consumption of 200kg grain. This would make a huge difference to the livelihoods of such households. In many areas where yields are low owing to lack of access to inputs and technical knowledge, it would not be difficult to achieve such increases through simple means.

6. The chronically poor need policy support at different levels

The poorest and most vulnerable rural households require support at several levels if they are to escape poverty. While it is easy to see that transfers may be necessary to help poor households where no-one is in work, the importance of higher order measures may not be sufficiently appreciated. Some measures that do not involve directly working with the rural poor can be very important. In Mexico in the mid-1990s, interviews with poor and near-poor villagers showed how hard they were hit by macro-economic shocks that dramatically raised costs of living, or led to loss of jobs, or eroded the value for savings (Wiggins et al. 1999).

Encouraging links from agriculture to the rest of the rural economy

Agricultural growth can reduce rural poverty directly by raising the incomes of small farmers; but much of its effect is indirect, through linkages that benefit poorer rural households with little or no land. How can vigorous links from farming to the rest of the rural economy be promoted?

To repeat the earlier argument, links are likely to be stronger when increases in agricultural production come from small farmers, because they are more likely to spend additional income on goods and services produced by local artisans and businesses, and because they are more likely to intensify production through hiring labour than by using machinery. It is thus important to include Class B rural households in

agricultural intensification and commercialisation; and correspondingly important to mitigate the market failures that could prevent this.

Linkages will work better if non-farm businesses can respond to extra demand. Rural public goods help: electrification can help set up workshops; investing in people means a local workforce that is healthy, literate and numerate. Measures to reduce the transactions costs that prevent smallholders getting credit or insurance can work for small rural businesses as well.¹⁷

Adding more: greening agriculture

The discussion so far omits an important consideration: conserving the environment and meeting the increasing challenges of climate change and water scarcity. These have been left aside until this section partly to keep matters relatively clear and partly since this is a major topic in itself.¹⁸

Agricultural development to date has harmed the environment from both intensification and extensification: the former seen in salination and drawdown of groundwater, pollution from chemical runoff, loss of biodiversity; the latter in clearance of forest and wetland, soil erosion and degradation, and also loss of biodiversity. Policies are needed to redress such harm, to meet the challenges of a changing climate, and to mitigate agriculture's considerable contribution to global warming.

Technically, there are answers, either proven or under development. Many come from the work done under the broad umbrella of agro-ecology. Getting farmers to change methods, however, is every bit as challenging as the technical issues. Policy options for conservation, adaptation and mitigation include *regulation, incentives, and information and education*. Each of these have their advantages and disadvantages, with some more appropriate to some problems than others. When effective policies have been deployed, they often combine elements of one or more of these areas. As might be imagined when dealing with natural resources, blueprints do not exist: solutions need to be tailored to particular localities.

To be a little more specific, what may soon be on the agenda for farmers, herders and fishers in developing countries? Regulation may become much stiffer on conversion of valued habitats such as tropical forest, peat and wetlands. Restrictions on groundwater pumping are likely to be tightened. Incentives that internalise external costs and benefits are likely to be brought in, including, on the debit side, taxes on greenhouse gas emissions and charges for water; while on the credit side, payments for environment services such as conservation of forest, biodiversity and for carbon capture, and tax breaks on the development of renewable energy sources. In some cases, there may be scope for the creation of markets in carbon and water, although this can easily be overplayed.

The key question for this paper is whether these sorts of environmental policies will undermine or require substantial adjustment of the policy agenda set out above. The simple answer is 'no'. The environmental agenda is often complementary. More effective forms of irrigation that deliver optimal water to the root zone, timing and placing fertiliser for maximum effect on plant growth, conservation tillage to minimise soil disturbance, agro-forestry to capture carbon and recycle nutrients – are cases where yields can be increased and some costs reduced thereby improving farm returns, while water is saved, pollution from excess nitrogen reduced, soil erosion and emissions avoided.

That is not to say that there may not have to be some major adjustments in developing world farming. For example, producing food grains through irrigation in parts of Asia by overdrawing groundwater cannot be sustained. Better would be for those lands, close as they are to cities, to be used for high-value perishables grown in agro-ecological systems where nutrients are recycled rather than allowed to pollute, while grains are shipped in from farming systems that are less intensive but environmentally sustainable.

¹⁷ Linkages may also be stimulated by public procurement. When a primary school is furnished, who makes the desks and chairs? Ministries of education often contract out such business centrally with large-scale orders that can only be fulfilled by urban factories. Local carpenters have little chance of bidding for such work. In the State of Ceará, northeast Brazil, procurement policy was changed in the late 1980s to give small local workshops a chance: the result was the creation of a rural industrial cluster (Tendler & Amorim 1996).

¹⁸ For a comprehensive discussion of this agenda, and how it relates to the full range of policy concerns in agriculture and food, see Foresight 2011.

It is easy to be pessimistic about the changes needed. But consider this: farming across the world has seen wave after wave of innovation and change in the last 150 years. Most farmers are doing things rather differently to the way their grandfathers did. Australian farmers have repeatedly learned from experience in 'a brown land of long dry spells' (Cary 1992) – and to good effect. As Cary adds,

'...we are never likely to have a single management system for cropping that endures forever.'
(Cary 1992, 279)

Learning and adaptation, rather than finding some elusive blueprint, are thus key to sustainability.

Controversies and practical considerations

Agricultural development can be surprisingly controversial. Why? Agriculture is unusual in the breadth of considerations, and indeed expectations, that it attracts. Two features contribute. First, agriculture remains the world's most common job, and especially so for poor households. Moreover it takes place over very large areas. For many low income countries it is the backbone of the economy and the main source of export earnings. Hence any and all the aspirations of development – economic growth, employment, poverty reduction, environmental sustainability, regional development and gender equity – are often expected to be the objects of farm policy. That's a lot to live up to.

Second, technically there is often considerable uncertainty about how to reach some objectives. Rural systems both natural and human are often complex, the full workings of which are often only apparent after intervention. Some things – such as conserving soil or remedying the failures in rural financial markets – are difficult to plan in advance and require more of a learning approach (Korten 1980). These two features combine to fuel debates over both ends and means.

Hence it is not surprising to find intense discussions over issues such as the degree of protection versus free trade in agriculture, acceptable technologies with genetic modification the main bone of contention, the extent to which the state should intervene in markets and directly supply, or subsidise, credit and farm inputs. Murphy (2010) reviews some of these controversies, and sees them stemming from different views on the desirability of globalisation and free trade, on the one hand, and the future of smallholders, whether seen as an anachronism that will disappear rapidly or as the basis of a future agriculture, on the other.

The search for policy that is effective and politically acceptable should not, however, obscure a practical lesson in policy-making for smallholders: not everything has to be perfect for policy to work – or, at least, to achieve some valuable objectives.¹⁹ That there are controversies, that some things are difficult, should not dismay those making policy: a great deal of good can be done by getting on with things that are neither difficult nor controversial. Does anyone, for example, dispute the value of better rural roads in Ethiopia; or believe that it is difficult to improve them?

Ghana is a case in point where policies since the early 1980s have allowed its agriculture to be one of the five fastest growing in the world, with widespread benefits for the rural poor: see Box D. There is no exceptional secret in this case: with hindsight, most of what government has done to stimulate agriculture in the last quarter century seems little more than common sense. No-one would claim that Ghana's policies have been perfect, or that the public service has performed particularly well in agriculture or rural development in general. Perhaps the key point is that few mistakes have been made, and that some good has been done.

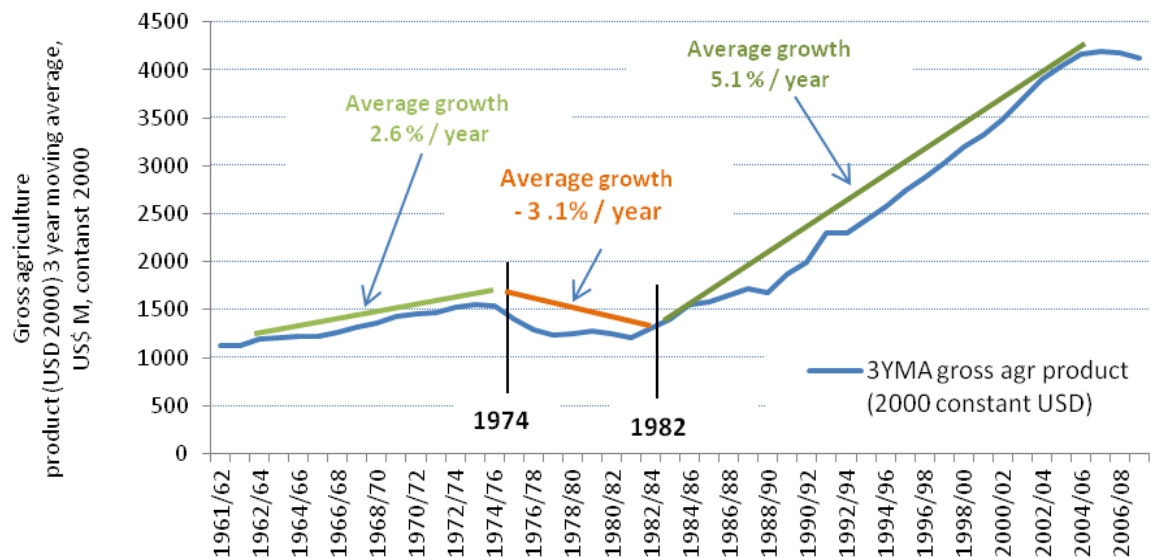
¹⁹ Since agricultural development is so often expected to meet objectives in so many fields, see the argument above; and given that few policies can be shown to meet all aims, then logically almost any agricultural development programme can be denounced for its failure on one criterion or other. This, of course, was the fate of the green revolution. Originally meant to boost cereals output at a time when world population was growing more rapidly than ever before, or since, it was soon denounced as favouring rural elites and harming the environment. This was not helped by some advocates exaggerating what the green revolution might do, and failing to recognise its limits. With hindsight, most observers would see the green revolution as progress, even if some things could have been modified at the time.

Box D Ghana's success in agriculture – and in reducing rural poverty

At independence, Ghana had a bright future. Rich in resources of land, timber and gold, it was the world's leading cocoa producer. It had one of the best education systems in Africa and well before independence in 1957 it was largely self-governing. But the promise vanished as the economy declined, then all but collapsed in the 1970s amidst turbulent politics and interventionist economic policy. Cocoa production, once more than 500,000 tonnes a year, was down to less than 170,000 tonnes by 1983.

Since, then, however, the fortunes of the overall economy and agriculture have turned around. Over the past 25 years, Ghana has ranked among the five top performers in the world in agricultural growth, see Figure D1.

Figure D1 Agriculture production since 1962



Source: Calculations from FAOSTAT dataset

Cocoa has recovered and surpassed its previous production levels; staple food output has risen much faster than population so that by 2005/07 production per person was more than 80 percent higher than in 1981/83; and growth in higher-value vegetables and fruit for domestic and export markets has been encouraging.

Sustained agricultural growth has been accompanied by rapid poverty reduction that saw the share of the population living in poverty fall from 52 percent in 1991/92 to 28.5 percent in 2004/06, with rural poverty falling from 64 percent to 40 percent over the same period. Poverty has fallen particularly sharply for the main beneficiaries of the reforms: cocoa farmers.

Child malnutrition has almost halved since the end of the 1980s, with the share of underweight children falling from more than 30 percent in 1988 to 17 percent in 2008. Ghana should soon become the first country in Africa to achieve the first Millennium Development Goal of halving its poverty and hunger: a wonderful achievement.

Ghana turned its agriculture around primarily through the economic reforms that began in 1983, above all control of hyper-inflation, devaluation of the Cedi that helped exporters such as cocoa farmers, and major reforms of the Cocobod, the cocoa marketing agency that cut costs and passed a much larger share of export revenues to farmers. In addition the government invested in rural roads, electricity and other services. Better technology for cassava and other food crops, developed collaboratively between Ghanaian researchers and their colleagues at the International Institute for Tropical Agriculture in Nigeria, has helped as well.

Overall economic growth has created a vibrant market for local farmers, who have responded with booming production of crops such as yams and tomatoes. Higher rural incomes have reduced poverty and allowed people to improve their diets. Public investments in health and water have also helped reduce child malnutrition.

Source: Leturque & Wiggins 2010



POLICY RECOMMENDATIONS

From this review of the issues, six recommendations emerge:

1. **OECD countries need to reform their agricultural policies** that reduce returns to developing world farmers, such as export subsidies, high tariffs on processed agricultural produce, and payments to farmers that encourage production beyond what the market would demand. Policies to encourage biofuels need review, especially inflexible mandates on volumes of production.
2. Developing country governments, donor countries and NGOs should **continue to increase their support to agriculture and for smallholder development**. Donors need to provide that support in line with Paris Declaration principles – to assist national efforts with minimal conditions.
3. **Governments should stimulate agriculture through attention and investment in fundamentals**: creating a rural environment that encourages investment and innovation and removes obstacles to these; **providing rural public goods** – roads, investments in people, research, appropriate technologies and extension – and **resist spending on other things** (such as subsidies) that might detract from these fundamentals; and address failures in rural markets. Policy does not have to be perfect: making progress with these fundamentals almost always pays off.
4. Most of the agenda is straightforward, but addressing market failures such as reducing transaction costs in rural financial systems, or strengthening the property rights of poor people, is not. Therefore encourage FAO with IFPRI to **review experiences, synthesise lessons and spread cross-country learning**. NGOs and other civil society organisations also have an important role in assisting farmers to address market failures and in documenting and disseminating lessons.
5. **Climate change and water scarcity will become ever more critical** in the next two decades. Fund research into solutions, begin pilot programmes, and make sure we learn from them. OECD countries need to commit the funds necessary to meet the challenge of climate change.
6. **Support the poorest, especially women**. Ensure their rights are observed and that well targeted social support is available where necessary. NGOs can play a key role in advocating for the needs of the poor and helping farmers work together to meet their needs.





Helping women farmers work together to meet their needs and challenge barriers: Florence Muthoni is the Chairperson of Chemi Chemi Women's Group in Rift Valley Province, Kenya. There are 300 women in the group. They meet once a week or as matters arise. After investigating and taking advice on options, the women decided to erect six greenhouses on communally purchased land in order to better control pests and conserve water in their farming. They have received training on using their greenhouses and have managed to source several drip kits which will be used during the dry season to feed their crops. The higher yields available from the greenhouses should not only help supply their own food but also those who don't have food living with HIV/AIDS in the community.



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