Productivity growth for poverty reduction: our approach to agriculture
Preface and call for comment

Opinions are divided on the role of agriculture in development. Recognising this, DFID committed, in its 2003 Agriculture policy paper *Agriculture and poverty reduction: unlocking the potential*, to drawing together views and evidence, via a consultative process, in order to work towards clear principles for agricultural strategies.

This consultative process has included an electronic forum that involved over 550 participants, and the development of 14 working papers (DFID, 2004a-n) that have provided material for this document. Informed by this process, this paper presents our understanding of agriculture’s role in poverty reduction and identifies what DFID needs to do differently to achieve this.

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Executive summary

DFID’s commitment to agriculture

Agriculture has been and will remain a key part of our efforts to reduce global poverty and achieve the Millennium Development Goals. This document shows why we believe agriculture is so important to reducing global poverty and identifies the principles and priorities for agricultural development strategies that will guide us.

We are presenting this document at a time when developing countries and development agencies are reassessing agriculture’s importance to poverty reduction. Agriculture’s relatively poor performance in many of the world’s poorest countries over the past 30 years had led to doubts about its relevance to growth and poverty reduction strategies. But thinking is changing and the international community is increasingly recognising, for example in work of the Commission for Africa and the UN’s Millennium Project, that without a major improvement in agriculture’s performance we are unlikely to meet our commitment to halve the number of people living on less than $1 a day by 2015.

Agriculture at the heart of poverty reduction

Our approach to agriculture is based on the premise that agriculture’s importance to poverty reduction goes far beyond its direct impact on farmers’ incomes. There is a mass of empirical evidence that increasing agricultural productivity has benefited millions through higher incomes and cheaper food. More importantly, it has provided the spur to economic development outside agriculture where growth and job creation are faster and wages higher.

Making the transition to a more diversified and faster growing economy is the key to sustained poverty reduction for the world’s poorest countries. But it is increasing agricultural productivity that has allowed poor countries to make the initial step on to the ladder leading to prosperity. This is particularly the case for labour-intensive, small-scale agriculture with its strong links to growth in other areas. No poor country has ever successfully reduced poverty through agriculture alone, but almost none have achieved it without first increasing agricultural productivity.

Reversing recent disappointing trends in agriculture’s performance is critical if poor countries are to escape the trap of slow growth and poverty. This is particularly true in sub-Saharan Africa, where growth in agricultural output has barely kept pace with population. Productivity has stagnated, slowing wider economic growth and exacerbating poverty with it. In Asia, where so much of the green revolution took place, the rate of growth of agricultural productivity has begun to slow with serious consequences for poverty reduction.

It will be a challenge to increase agricultural productivity in many of the world’s poorest countries. Shortage of land and water and factors such as
globalisation, climate change, an inequitable global trading system, depressed commodity prices and HIV/AIDS create a difficult setting for agricultural development, particularly for small farmers. What worked well in the past may not do so today. Opinion is divided as to whether farmers in the developing world can overcome these challenges. A second green revolution on the scale of Asia’s may not be possible. However, a step change in agriculture’s performance in the world’s poorest countries is possible and must be achieved if millions of people are to escape poverty.

Guiding principles for agricultural development strategies

To maximise their impact on poverty, agricultural development strategies should aim to realise the links between increasing agricultural productivity and growth in the wider economy. Achieving this requires policy and public investment decisions in agriculture to be guided by six principles. They should:

- **reflect the stage of a country’s development.** Increasing agricultural productivity is most critical in the poorest countries in the earliest stages of development. A clear prioritisation of agriculture in public investment allocations and a proactive state role in stimulating and facilitating agricultural development (particularly overcoming market failure) are justified in these countries so that they get on to the pathway to more diversified and faster economic growth.

- **prioritise agricultural development in locations where significant productivity gains are possible and the links to the wider economy are strongest.**

- **focus development efforts on farmers capable of increasing productivity and creating significant additional employment.** Increasing employment will have a direct impact on poverty, but it also generates additional spending which supports growth outside agriculture. For most poor countries this suggests a focus on small-scale labour-intensive farming.

- **focus on demand and market opportunities.** For large parts of Africa the domestic food market represents the largest and most rapidly growing source of demand for agriculture. Elsewhere, where countries or regions are self-sufficient in basic goods, the focus will need to switch to higher value agricultural crops which have greater market potential.

- **make social protection complementary to agricultural growth.** Social protection programmes are vital for ensuring a minimum level of well-being and social security for the chronically poor and vulnerable. Poorly targeted social protection programmes (including the indiscriminate use of food aid) can harm agricultural growth prospects. Attention must be given to identifying ways in which these negative implications can be minimised and to identify new approaches to social protection, including targeted cash transfers that can be positive for agricultural growth by stimulating local markets.
• ensure the sustainable use of key productive resources such as land and water and minimise any adverse impact of increasing productivity on the environment.

Making agricultural development happen

Building on these guiding principles, efforts to accelerate agricultural growth in poor countries should focus on seven priority areas:

• create a supportive policy and operational framework. In many developing countries agriculture has been hurt by overvalued exchange rates, high export taxes and policies that have kept prices low to benefit consumers. Policy reforms addressing these biases have been implemented in many countries, but elsewhere progress on reducing them still needs to be made.

• target public spending more effectively. Strategic public investment in agriculture – particularly in roads, irrigation and agricultural research – is highly effective in increasing agricultural productivity and reducing poverty. But in many countries public spending in support of agriculture is inadequate and often poorly directed. Where appropriate, governments should prioritise spending in support of agriculture and focus it towards important public goods that support private investment and benefit the poor.

• tackle market failure. Poorly functioning markets continue to hinder agricultural development in many poor countries. State intervention, particularly in Africa, has a poor track record, but when markets have been liberalised, the private sector has often failed to fill the gap left when government withdraws. Building effective markets needs actions to reduce the transaction costs and risks that inhibit the private sector. This involves improving infrastructure and communications, and removing burdensome regulations or inconsistent policies. Where markets are very weakly developed, governments may need to play a more direct role in encouraging private sector participation through the use of targeted and time-bound guarantees or subsidies.

• fill the agricultural finance gap. Limited access to finance, particularly short-term seasonal credit, remains a major obstacle to many poor farmers investing and innovating. Financial service providers are often reluctant to meet small farmers’ credit needs and new approaches are needed to meet this unmet demand.

• spread the benefits of new technology. Agricultural research must be effectively funded and research priorities must respond to demand and reflect agriculture’s role in poverty reduction. Efforts are also needed to improve the availability to poor people of knowledge and technology through both public and private sector institutions, and to improve public access to the results of privately financed agricultural research.
• **improve access to land and secure property rights.** Ownership and access to land in many poor countries remain inequitable, reducing agriculture’s contribution to poverty reduction. Efforts are needed to help poor people to buy land and to encourage large landowners to sell it through simplifying legal and administrative procedures and strengthening the financial position of the poor. In addition to measures aimed at increasing poor farmers' land ownership, attention needs to be given to new approaches to land administration that can help provide secure access to land through, for example, leasing arrangements. Special attention needs to be given to improving access to land for the most marginalised people, particularly women and indigenous communities.

• **reduce distortions in international agricultural markets.** Subsidies, tariffs and non-tariff barriers continue to distort patterns of international trade and to depress prices. Continued efforts are needed to ensure their reduction in line with WTO commitments and to assist those countries facing short-term adjustment problems from international agricultural trade reform.

**Following through on our commitments**

Most decisions about agriculture should and will be taken by developing countries within the context of their poverty reduction and growth strategies. Working with development partners in developing countries, internationally and at home, we will work to ensure that the principles and priorities identified in this paper genuinely direct our work. Measuring the impact of this new approach on our actions is important and we intend publicly to take stock at the end of 2006 of how we are performing against the commitments we are making.
1. **Agriculture and poverty reduction**

1.1 **The historical perspective**

1. Agriculture’s contribution to poverty reduction is sometimes thought to be small, because its relative economic importance usually falls when low-income countries successfully develop. This view is misleading. Strong agricultural growth, particularly increased productivity, has been a feature of countries that have successfully reduced poverty\(^1\) (see Box 1.1).

2. This was true for many parts of Asia, where what is now known as the green revolution played a major role in reducing poverty. This contrasts with much of Africa's recent experience, where per capita food production and yields have largely stagnated, slowing overall growth and increasing hunger and poverty (see Box 1.2).

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**Box 1.1 Agricultural growth is good for the poor**

Evidence consistently shows that agricultural growth is highly effective in reducing poverty. Gallup et al (1997) reported that every 1% increase in per capita agricultural output led to a 1.61% increase in the incomes of the poorest 20% of the population. Thistle et al (2001) concluded from a major cross-country analysis that, on average, every 1% increase in agricultural yields reduced the number of people living on less than a dollar a day by 0.83%.

**Box 1.2 Africa and Asia: a contrasting picture of agricultural performance**

Between 1961 and 2001, per capita production of cereals rose by over 50% in the developing world as a whole. But this overall picture masks great regional differences. In sub-Saharan Africa, output barely kept pace with population growth, increasing from 40 to 116 million tonnes. Most of this (probably 80%) came from expanding the area farmed: cereal yields increased by just 50%, from around 0.8 to 1.2 tonnes per hectare and soil fertility has fallen dramatically. This contrasts sharply with Asia, where cereal output tripled from 309 to 962 million tonnes over the same period. This was far above the increase in population, and mostly came from higher yields, which rose from an average of 1.2 to 3.3 tonnes per hectare. The farmed area increased by just 40% over the same period.

Sources: IFPRI (2002); FAOSTAT (2004)

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\(^1\) Agricultural productivity is a measure of how efficiently resources are used in producing agricultural products. When productivity increases, there is an increase in the amount of output for any given amount of inputs used in its production. Productivity gains can be realised through increases in the efficiency with which labour, capital and land are used. In combination, these increases contribute “total factor productivity”, a measure that takes into account all inputs used in production.
3. Rapid increases in agricultural output, brought about by increasing land and labour productivity, have made food cheaper, benefiting both the urban and rural poor, who spend much of their income on food. Poor households typically spend 50–80% of their income on food (Nugent, 2000), including many poor farmers. Bangladesh provides an excellent example of this. Between 1980 and 2000, the real wholesale price of rice in Dhaka’s markets fell from 20 to 11 Taka per kg, bringing major benefits to poor consumers (Smith and Haddad, 2002).

4. In addition, when the conditions are right, increasing agricultural productivity has increased the incomes of both small and large farmers and generated employment opportunities. These increases in income are particularly important because the proportion of people mainly dependent on agriculture for their income remains high: ranging from 45% in East and South East Asia, to 55.2% in South Asia and 63.5 % in sub-Saharan Africa (FAOSTAT, 2004).

5. A large body of evidence shows that higher agricultural productivity in Asia consistently raised farmers’ incomes despite declining market prices resulting from increased output. Small- and medium-sized farmers have not been excluded from these benefits (Lele and Agarwal, 1989, Lipton and Longhurst, 1989). A 1990s survey in India concluded that the average real income of small farmers rose by 90% (Dev, 1998).

6. Increased agricultural productivity has also created employment opportunities on farms, although this did not necessarily result in higher wages (Hazell and Ramasamy, 1991). Cross-country studies indicate that for every 1% increase in agricultural output, it is estimated that farm employment increased by between 0.3 and 0.6 % (Mellor, 2001a). It is not just the landless that rely upon this source of income. Many farmers supplement their incomes by working on the farms of others.

7. But agriculture’s historical importance to reducing poverty goes far beyond its impact on agriculture-based livelihoods. Where agriculture has grown rapidly, higher rural incomes and cheaper food have increased the demand for goods and services produced outside agriculture.

8. These strong linkages or “multipliers” between growth in agriculture and that in the wider economy have allowed poor countries to diversify their economies to sectors where growth is generally faster and labour productivity and wages are higher (Box 1.5). Where agricultural productivity has grown slowly, particularly in sub-Saharan Africa, non-farm activities have also tended to grow slowly and to offer low wages (Haggblade et al 2002).

9. Building livelihoods outside agriculture is vital to poverty reduction. This is particularly important in rural areas, where 70% of the world’s poorest

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2 These growth linkages were first recognised in the 1960s (Johnston and Mellor, 1961).
people live (Ravallion, 2002) and the non-farm economy already plays a major part in people’s livelihoods (Box 1.3).

Box 1.3: The importance of the rural non-farm economy

Across the developing world, as much as 25% of the rural population working full-time is employed outside agriculture, and accounts for 35–40% of rural incomes (Haggblade et al 2002). Case studies in the Indian states of Andhra Pradesh and Madhya Pradesh (Farrington, et al, 2005) show that almost 40% of rural income in surveyed villages came from outside agriculture. This diversification is not confined to the rich – the poorest 20% of the population, on average, earned 30% of their income from non-farm sources. In parts of Africa, up to 42% of total rural income comes from non-farm sources (Barrett et al, 2000; Reardon, 1998) and this trend appears to be increasing rapidly (Bryceson, 1999b).

10. The development of non-farm opportunities will be uneven between regions and over time. To escape poverty, people may have to leave their home areas, either for the season or permanently, and on occasion they may even return to agriculture if growth in the non-farm sector stalls (for example, as in Indonesia during the financial crisis of the 1990s). People may also combine agriculture and non-farm work (Kydd et al, 2004).

11. Over time, the “structural transformation” of poor countries’ economies away from dependence on agriculture lies at the heart of sustained poverty reduction. This relationship is greatest when countries are least developed. At this early stage of development, agriculture typically accounts for a large share of total employment and food represents a major part of poor people’s spending. As the non-farm sector develops, and economies become progressively less dependent on agriculture, the relationship becomes less important overall, but remains significant in some parts of these economies where the non-farm sector is least developed.

12. The nature of productivity changes and the size of farms where these changes take place play an important part in determining the extent to which agricultural growth contributes to wider growth and reduces poverty.

13. Both labour and land productivity increases are central to pro-poor agricultural growth. Furthermore, the relationship between the two is critical and changes as an economy develops. In the early stages of growth, both land and labour productivity must rise in order to reduce poverty, but land productivity must rise faster. This condition is necessary to create additional employment on farms, which benefits the poor and in turn stimulates demand for non-farm goods and services. For innovation to benefit farmers, it must

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3 Part-time farmers often have the advantage of links to urban areas and non-farm earnings to invest in their farms, which can make them very efficient. For example, in Tanzania, a 2001 survey of 310 households showed that agricultural productivity tends to increase as households diversify their incomes (Ellis and Mdoe, 2002).
stimulate the demand for their produce by reducing food prices, but it must also reduce their costs of production by a greater amount.

14. In the later stages of growth, as more employment opportunities outside agriculture become available, labour is increasingly drawn away from agriculture and wage rates for farm labourers tend to rise. In order to maintain an affordable supply of food, it becomes progressively more important to increase labour productivity. Without this, increasing food prices could jeopardise ongoing economic transformation.

15. However, even in rapidly growing developing countries where pockets of persistent poverty remain, agriculture, particularly through farm employment, remains important. For this reason, the general slowdown in the rate of growth of agricultural productivity in Asia has had important implications for poverty reduction. Following the impressive early gains in the 1970s and 1980s, the rate of growth of cereal yields in India, in particular, has fallen, slowing overall job creation with it. Agriculture policies should change to reflect this.

16. Farm size is also important. In the early stages of growth, as the Asian green revolution showed, productivity increases on labour-intensive small farms have had the greatest impact on poverty reduction. Small farms have been able to achieve significant improvements in land productivity.

17. But no less importantly, small- to medium-sized farm households typically spend a relatively high proportion of any additional income on locally manufactured goods and services (Eastwood et al, 2005). This provides an important stimulus to overall demand that is less likely to be provided by growth in output achieved from larger, capital-intensive farms, or indeed other capital-intensive economic activities.

18. Structural transformation inevitably results in agriculture’s share of total output and employment falling. However, there are very few examples of countries that have made this transition without first realising growth in agriculture. Where agricultural growth has stagnated – as in large parts of Africa today – the transformation of economies has stalled, and poor countries have remained trapped in a cycle of slow growth, low labour productivity and poverty. It’s therefore vital to improve agriculture’s performance in many of the poorest countries.

1.2 Looking ahead

19. Half a century ago many commentators saw little realistic prospect of reducing poverty in Asia. The region seemed destined for a future of hunger

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4 City states (like Singapore and Hong Kong) and unusually successful mineral economies (like Botswana) are amongst the only examples where prior agricultural growth has not been critical to economic diversification.

5 Following a fairly rapid decline in the 1960s and 1970s as the non-farm economy grew, agriculture’s contribution to overall GDP in sub-Saharan Africa has remained constant over the past 20 years (World Bank, 2003).
and famine with agriculture offering little potential for growth. However, as history has shown, with a strong commitment to develop agriculture through support to the effective development of irrigation and the adoption of new technologies, agriculture played a major part in Asia’s relative success in reducing poverty.

20. Agriculture’s impact on growth and poverty reduction was greatest when the supply, demand and policy conditions favoured growth in labour-intensive, small-scale farming. Today, the situation in many developing countries, particularly in Africa, is less conducive to this happening. Nevertheless, agriculture can and indeed must undergo the same kind of rapid changes seen in Asia if Africa is to escape the trap of poverty. Achieving this will not be easy.

21. Some of the factors that make increasing agricultural productivity difficult have always challenged agricultural development. They include: very limited access to finance; inequitable access to productive resources such as land and water; poorly-functioning markets; poorly-developed infrastructure and the risks associated with adverse weather and prices.

22. But beyond these issues there are other constraints to raising productivity. Increasing competition for water makes expansion of irrigation more difficult, and international markets have changed greatly since the 1960s and 1970s. In addition, the important links between agricultural growth and economic transformation that were so effective in Asia in the green revolution may not be as strong today. Policy environments have also changed, and HIV/AIDS introduces huge added uncertainty.

23. Opinions on the implications of these differences are divided. The more optimistic (see for example Lipton, 2004 and Hazell, 2004) believe that productivity gains are possible with the right policies and will have a major impact on growth and poverty. Others (such as Maxwell, 2004) argue that conditions have changed so much and so quickly that the potential for small-scale agriculture to play a major role in development strategies is limited.

1.2.1 The physical challenges to increasing productivity

24. Asia’s success in rapidly increasing yields during the green revolution was based largely on irrigated farming systems. In contrast to rain-fed agriculture, irrigation provides a more predictable and responsive physical environment for new technologies, including fertilisers and new crop varieties. Irrigation also gives farmers the opportunity to realise more than one harvest a year (double cropping).

25. The potential for expanding irrigation in Africa is more limited than in Asia during its green revolution. Large-scale irrigation in Africa is likely to be expensive, probably more than three times the cost of comparable systems in South Asia (Rosegrant et al, 2001). While there is scope to bring these costs down and for expanding smaller scale irrigation (for instance, treadle pumps) Africa will inevitably continue to rely heavily on rain-fed agricultural systems.
26. In many parts of the developing world, agricultural potential is being directly jeopardised by the degradation of the natural resource base, including salinisation of land and unsustainable use of ground water.

27. Climate change is likely to further exacerbate pressure on resources. Although it's hard to quantify its impact, it is likely to increase the unreliability of farming systems, particularly in rain-fed areas.

28. Despite rapid population growth, Africa's population density generally remains well below that of Asia even 40 years ago. This limits the size of local markets and increases the per capita cost of providing services. Agriculture is performing better in areas of Africa where population densities are high and that are well connected to markets.

29. Poor transport infrastructure limits market access for many farmers in the developing world. Road densities are critical to intensifying agriculture (Dorward and Kydd, 2003). However in Africa, these are low with respect both to population numbers and to area, averaging just 63km per 1000 square km – about 40 times less than in India in 1973. It is estimated that 60% of Africa’s rural population lives in areas with good agricultural potential but poor access to markets. (Kelley and Byerlee, 2003). In one-third of all African countries, transportation costs account for more than 25% of the total value of exports, and in Uganda they exceed 70% (von Braun et al, 2002). Deficiencies in electricity supplies and telecommunications are widening this “infrastructure gap”.

30. HIV/AIDS presents a challenge to all aspects of development. Although the evidence about the impact of HIV/AIDS on agriculture is limited and often contradictory, it is certainly: affecting the ability of governments to deliver services; affecting the availability of labour (which is a key asset of the poor); impeding the transfer of agricultural skills from one generation to the next; and diverting resources that could be used to boost productivity. Instead, affected families are focusing on surviving and meeting the costs of treatment and burial.

1.2.2. Harsher market conditions

31. Since the 1960s, world prices of most important agricultural commodities including food staples have steadily fallen. Between 1980 and 2003, the prices of agricultural raw materials and food and beverages fell by 60% and 73%, respectively (UNCTAD, 2003). In 2003, coffee and cotton prices were 17% and 33.5%, respectively, of their 1980 real values. From 1997 to 2001 alone, the combined price index of all commodities fell by 53% in real terms (FAOSTAT, 2004).

32. The fall in prices has happened because demand for these commodities grows relatively slowly, while supply has increased rapidly as a result of new technologies and government subsidies given primarily, but not exclusively, to farmers in developed countries (see Box 1.4). While the prices
of important inputs, including fertiliser, have also fallen in real terms, the
decline in international agricultural prices has been even greater. There
appear to be limited prospects for using international commodity agreements
to improve prices by regulating the supply of products entering the market.

33. Schemes such as FairTrade can play a vital role in giving farmers a
greater share of market value. Commodity price risk management can also
help to stabilise prices at farm level. However, the solution to commodity
dependency lies in economic diversification. Achieving this requires
investment in the non-agricultural sector that is most likely to occur in a stable
economy. This indicates the importance of measures to smooth out the
negative effects of volatile commodity prices on export earnings and tax
revenues, through financing facilities such as the European Union’s FLEX
system or the International Monetary Fund’s Compensatory Financing Facility.

Box 1.4. The impact of farm subsidies in developed countries

Across the Organisation for Economic Co-operation and Development
(OECD) countries, governments provided farmers with around $257 billion in
support in 2003.

These payments make up more than 30% of farm revenue in rich countries
and two-thirds of these payments are in the form of price support
(Tangermann, 2003). The prices farmers receive in the OECD are 31%
above the equivalent in international trade. In some instances, they are much
higher: 80% for milk, nearly 100% for sugar and 360% for rice. This leads to
increased production in OECD countries.

Developed countries then tend to dispose of their surplus farm production
through export subsidies, which reduces international prices (Tangermann,
2003).

As a result, developing countries find it harder to export their produce and
local farmers face unfair competition in their markets. While it’s difficult to
make accurate estimates, removing these subsidies could boost rural income
in low and middle-income countries by up to US $60 billion a year (Beghin et
al, 2002).

Freer international agricultural trade will not benefit all developing countries.
The benefits may well be captured by a relatively small number of efficient,
largely middle-income, producers. Furthermore, many developing countries
will lose preferential access to some developed country markets for their
products.

34. Poor farmers are also finding it harder to sell their produce as food
processing, distribution and retailing becomes increasingly globalised. The

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6 For example, the Commodity Risk Management Group.
7 See DFID (2004a) for a discussion of these issues.
appearance of large, international supermarket chains in many developing
countries is leading to new demands on quality, quantity and delivery
schedules. Supermarkets already dominate the retail food markets in most
developed countries, and they are increasingly penetrating markets in
developing countries, too. This trend has been greatest in Latin America,
where supermarkets now account for 75% of all retail food sales. In Africa,
supermarkets now account for around half of all food sales in South Africa,
and 20% of urban food sales in Kenya (Neven and Reardon, 2004).

35. Increasingly stringent product standards are also being imposed for
reasons of food safety or to protect domestic agriculture from imported animal
or plant diseases. This is creating new hurdles for producers in many
important export markets. In order to meet these standards, in some
situations farming is becoming increasingly reliant on the supervision and
control of large buyers and their agents. This is making it harder for small
farmers to access export markets (Barrientos and Kitzinger, 2003), but is less
important in the burgeoning domestic markets.

1.2.3 Links between agriculture and wider growth

36. The strong links between increasing rural incomes and growth in the
wider economy were central to the success of the green revolution in
accelerating economic growth. These links worked well in large Asian
countries, where increased rural incomes were largely spent on locally
produced goods and services.

37. Some commentators (Ellis, 2000b) question whether these linkages
remain as strong today, particularly in Africa. They argue that, in many
situations, additional income is increasingly likely to be spent on imported
consumer goods and agricultural inputs rather than locally produced goods.
This, they believe, limits the impact of agricultural growth on the rest of the
economy, but as we discuss in paragraph 47, the evidence does not support
this. In any case, this would apply to any source of growth, agricultural or not.

1.2.4 Changing policies

38. In contrast to the 1960s and 1970s, development strategies now
primarily focus on market-led approaches. This has been influenced by a
revised view of the market and service delivery role of the state; the need for
fiscal discipline; the weak performance of earlier public spending in many poor
countries; and perceptions that focusing public expenditure on health and
education will bring greater benefits.

39. The withdrawal of the state from direct provision of agricultural
marketing and services has been a key element of these reforms. In many
countries, particularly in Africa, this has contributed to a more challenging

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[8] These challenges can be successfully overcome. For example, Flamingo Holdings, which
employs 10,000 smallholders in Kenya, operates contractual arrangements under which no
more than 25% of acreage per smallholding is given over to producing a cash crop. There is
also a pre-purchase agreement for the crop coming off that smallholding.
context for agricultural growth, as the private sector has not always responded as expected. The past failure of many state organisations is undeniable, but in many instances, the private sector is not providing a viable alternative.

40. Export based agriculture has often been helped by marketing reforms and improved macro-economic conditions (reduced exchange rate overvaluations, lower budget deficits and controlled inflation). In Ghana, devaluation and a reduction in export taxes on cocoa had a positive impact on production. In Burkina Faso, market reforms and devaluation played a significant part in the 250% expansion of cotton production that occurred between 1994 and 2003.9

41. The experience with food crop production is more mixed. Evidence from sub-Saharan Africa overwhelmingly indicates that while liberalisation may have led to higher average prices, this has not been enough to boost production given factors such as high transport costs and reduced access to key services and inputs. In general the impact on crop yields has been marginal at best (Kherallah, et al, 2000). Liberalised markets have also tended to demonstrate greater price volatility.

42. In many countries, public expenditure on agriculture has fallen, often to the point where even basic functions, including regulatory and legal systems and infrastructure, are no longer provided. For example in Uganda between 1982 and 1997, government spending on agriculture fell from 7.4% to 1.5% of total public expenditure (Fan et al, 2004). Important support functions, such as extension and veterinary services, have also contracted.

1.3 Agriculture is the key to poverty reduction

43. Accelerating agricultural growth where it is most needed will undoubtedly be harder than in the past. But with political will, substantial investment and well formulated and implemented policies, growth is possible, and the links between agriculture and economic transformation remain strong.

44. Market prospects may be better than many believe. While there is little hope of reversing the long-term decline in global agricultural prices, increasing demand in India and China – particularly for grain used in feeding livestock – offers some prospect of international prices stabilising (Song, 2004).

45. Domestic and regional markets offer significant growth potential. Africa’s domestic consumption of food staples alone is estimated at around $50 billion a year, which is more than five times greater than the value of its traditional commodity exports. This is expected to double by 2020 (Diao and Hazell, 2004) and includes markets for foods like maize, cassava and legumes that are grown and consumed mainly by the poor. This includes many millions of households that cannot produce or earn enough to meet their food needs.

9 However this success was still heavily dependent on state-led coordination of input, finance and output marketing systems.
46. As Africa currently imports 25% of its food, the potential for substitution also exists. Although international grain prices are at historically low levels, the high cost of transporting food internally means that locally produced grain is still able to retain a market share here. But these high transport and marketing costs also limit access to wider domestic markets for domestic farmers. So on balance, making strategic investments to reduce these costs should help build local markets and make local farmers more competitive.

47. The links between increasing agricultural growth and the wider economy also appear to be strong (Box 1.5). Growth outside agriculture also helps to stimulate the agricultural sector, particularly increasing urban demand for higher value products.

Box 1.5  The importance of agriculture’s growth linkages

Many studies have shown the strength of the growth linkages or “multipliers” between agriculture and the wider economy. Estimates show that on average in Asia, every $1 of additional farm income created a further $0.80 in non-farm income (Bell, et al 1982; Hazell and Ramaswamy, 1991).

Estimates from Africa show that every additional dollar of farm income leads to a further income of between $0.96 in Niger and $1.88 in Burkina Faso elsewhere in the economy (Delgado et al, 1998). Models of the Kenyan economy shows these “multipliers” from agricultural growth are three times as large as those for non-agricultural growth (Block and Timmer, 1994). In Zambia estimates suggest that every $1 of additional farm income creates a further $1.50 of income outside agriculture (Hazell and Hojjati, 1995).

48. For today’s poorest countries, other sources of growth may exist, but few can match agriculture in its ability to reduce poverty and stimulate wider economic growth. For example, mineral wealth has not provided a platform for broad-based poverty reduction and economic growth, as countries like Nigeria and Zambia have shown. Without the increasing incomes and affordable food that a dynamic agricultural sector provides, economic transformation will be slow and economies will remain trapped in a cycle of low growth and poverty.

49. The issue is not one of agriculture growth being superior to that from other sectors, but of it being an essential complement to it, particularly in the early stages of development.

50. The pace of agricultural growth in today’s poor countries will probably be slower than in the green revolution and it will differ between countries, reflecting local conditions. The participation of small-scale farmers will also be more difficult. But agriculture’s potential can be realised and is critical to poverty reduction. Achieving this will require more effective investment and better policies, as we discuss next.
2. Principles for agricultural strategies in poor countries

51. In order to realise agriculture’s full potential to reduce poverty, poor countries’ agricultural development strategies will need to:

i. match the prevailing stage of development and the nature of poverty

ii. focus on places where increasing productivity is possible and linkages to the wider economy are strongest

iii. focus on farms where productivity gains will have the greatest impact on overall growth and poverty reduction

iv. build on market opportunities

v. ensure complementarity with social protection strategies

vi. ensure sustainability.

2.1 Match the prevailing stage of development and the nature of poverty

52. Agricultural development strategies must reflect the fact that agriculture’s role in economic growth and poverty reduction changes as countries develop. The constraints limiting agricultural growth also change as economies develop. This principle has important implications for policy, specifically the role of the state.

53. For the poorest countries in the earliest stages of development, accelerating growth in labour-intensive agriculture is fundamental to reducing poverty and allowing countries to achieve economic transformation. However, at this stage of development, the private sector is often small and weak, and markets for both inputs and products do not function efficiently.

54. If these market failures are not addressed, then investment and innovation, both by farmers themselves and by those providing key services such as seeds, fertiliser, storage, transport and credit, will remain low. This in turn will hold back agricultural growth, slowing the pace of economic transformation and poverty reduction.

55. These arguments make a strong case for the state to play an active role in building and supporting markets. In many successful Asian economies, the state played this role. The state engaged in markets and invested heavily in infrastructure and services in order to get agriculture growing as a means to enabling wider growth and poverty reduction (see Section 3.2). As countries
develop, and the private sector matures, the rationale for the state to perform this function diminishes (Dorward et al, 2004).

56. Agricultural strategies will also need to change over time in order to reflect the dynamic nature of economic development and poverty. In countries where economic growth is good, some sub-regions may lag behind, and agriculture will continue to play an important role for people in these areas.

2.2 Focus on places where productivity can be increased and linkages to the wider economy are strongest

57. As the green revolution demonstrated, growth in agriculture had the greatest impact on poverty when it occurred in areas of higher yield potential. However, this was not simply a function of physical potential. These areas were generally more densely populated than elsewhere and had benefited from investments in infrastructure. Consequently, increasing agricultural productivity directly benefited a large number of poor people and their increased spending contributed to non-farm growth.

58. The principle of focusing on areas that combine yield and linkage potential remains valid for countries in the early stages of development, including most of Africa.

59. Where poor countries are in a more advanced stage of development, for example India and China, this rationale may need to be reconsidered. Many established high-productivity regions in these countries have already benefited from extensive public expenditure to support agricultural development. Productivity growth in many of these regions is now showing signs of stagnation. For example in the Punjab, the centre of the Indian green revolution, growth in crop yields nearly stagnated in the 1990s (Sidhu, 2002). Here public investment in agriculture needs to be refocused and greater attention given to development of the non-farm economy and higher value agricultural products and processes.

60. Evidence is also emerging that, with the right kind of investment, particularly in relation to agricultural research and irrigation, greater productivity increases are possible in less favoured regions than in already developed regions in countries like India and China (Fan and Hazell, 2002).11

61. Fundamentally, however, the logic remains unchanged: the greatest impact on poverty will come from investing in agriculture where significant improvements in productivity are possible, and where these improvements will in turn stimulate wider economic growth through linkages to the wider economy. Directing limited public resources towards agricultural development

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10 DFID (2005) presents the important linkages between agriculture and infrastructure
11 Many “lagging” regions in these countries have been less favourably treated by governments because of political or ethnic divisions. This problem has been exacerbated because agricultural research has also tended to focus on previously successful regions.
where yield increases are less likely or linkages to the wider economy are weak may not be as effective in reducing overall poverty.

62. Policy makers should appreciate that agricultural growth will not directly benefit every person or region equally. It will be up to individual governments and their people to decide how best they can turn the principle described above into reality on the ground.

2.3 Focus on farms where productivity gains will have the greatest impact on wider growth

63. The structure of production, including farm size and the degree of labour intensity, also matters for growth and poverty reduction. People have been debating the relative advantages of small and large farms, in terms of their contribution to growth and poverty reduction, for many years. Evidence shows that the optimal mix of farm size varies according to a country’s stage of growth.12

64. A strong rationale exists for focusing resources on small farms for countries in the early stages of growth where labour is more abundant than capital, and small farms account for a large share of employment. Small farms are no less technically efficient than their larger counterparts (Heltberg, 1998) and increasing their productivity will have a major impact on poverty and growth. However, as countries develop, the advantages of “smallness”, including the efficient use of unskilled labour, are gradually outweighed by the advantages of “largeness”, such as being able to access financial information and information about input and output markets. This distinction is particularly true in sub-Saharan Africa. The small farm sector dominates, labour is more abundant than capital and the links between agriculture and the wider economy are strong.

65. But there are some caveats. Not all small-scale farmers will be able to increase their productivity as they may be hampered by: rapidly changing market conditions; a limited resource base; or, in some cases, repeated subdivision of already small farms.13 There is also scope for commercial agriculture to play a significant role in reducing poverty. This is particularly true when it utilises opportunities that generate significant employment, or where large companies source from small producers, including outgrower schemes allowing them to access markets they would otherwise be unable to reach. The rapidly growing export horticulture business is often a good example of this.

2.4 Build on market opportunities

66. If productivity is to improve, farmers will have to invest, innovate and take risks. But they will only be prepared to do this if they can see that the market for their produce is growing.

12 see Eastwood, et al (2005) for a discussion on this.
13 In Malawi’s Mchinji district average land holding per household has fallen from 3 hectares in the mid 1960s to 1.5 hectares in 1998(Cross, 2002).
67. Exports of primary commodities including tea, coffee and cocoa have been and remain an important source of growth for many developing countries. They provide more than half of sub-Saharan Africa’s export earnings. However, the prospects for significant growth based on expanding exports of these products are limited by poor price prospects.

68. Even if the volume of these exports was to increase significantly, the impact on growth and poverty will be limited, because of the weak links between expanding output of these commodities and overall growth. Diao and Hazell (2004) estimate that if Africa’s traditional commodity exports regained their historic market share, agricultural income would only grow by an additional 0.3 to 0.4%.

69. Newer exports, including high-value horticultural, fish and livestock products, offer more potential for growth. European imports of leguminous vegetables increased by 130% between 1989 and 1997, with 75% of this increase coming from sub-Saharan Africa. Some countries have been particularly successful. Kenya’s exports of fruit and vegetable products has multiplied by 500% since 1974 (Diao and Hazell, 2004).

70. While these markets have shown rapid growth, they remain relatively small and could easily become saturated. Small- and medium-scale farmers will also have to meet the cost (both of changed production practices and demonstrating compliance) of increasingly stringent product standards including those set by importing governments and retailers, if they are to access these markets (Reardon and Berdegué, 2002).

71. But export markets are only part of the story. Traditional commodity exports in sub-Saharan Africa are estimated at $8.6 billion, and newer “non-traditional” exports $6.1 billion (Diao and Hazell, 2004), whereas the domestic market, including rapidly growing urban markets for higher value horticultural and livestock products, is estimated to be more than three times greater than these combined (see paragraph 45).

72. The nature of domestic markets will vary across countries. In poor, densely populated countries such as Malawi and Ethiopia, where potential demand generally exceeds supply, demand prospects are good. As long as the rate of consumption grows faster than the rate of production, significant increases in productivity should not reduce prices to unprofitable levels.

73. The situation is different where the supply and demand for food are generally balanced, for example in Uganda. Here, creating a dynamic and profitable agricultural sector requires diversification into higher-value products, where demand prospects are more promising. But even in these situations, low-cost food staples need to be available, partly so that people can afford to buy the higher value products, but also to meet the feed needs of a growing

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14 Cotton in Africa is an exception.
livestock sector. Small farmers will also be more willing to diversify into cash crops once they are certain about their own food security.

74. Building effective regional markets for food staples is particularly important in Africa. The movement of produce from surplus to deficit countries and regions can help smooth out price volatility, benefiting both producers and consumers. This will require improvements in regional infrastructure and the removal of regulatory impediments, both official and unofficial.

75. Realising market potential will also need producers to be better linked to markets through targeted investment in infrastructure aimed at reducing transport and marketing costs. Transport charges in Ghana and Zimbabwe are up to three times more than for comparable journeys in Asia (Ellis and Hine, 1998). These transport costs contribute substantially to the large differences in market prices across Africa.

76. Efforts will also be needed to reduce the impact on farmers and consumers of year-to-year price volatility, typical of the markets of many poor countries. Even countries with chronic food shortages periodically have “good years” when they produce a surplus that cannot be stored or exported. Annual output fluctuations in Malawi and Zambia, for example, result in price fluctuations of more than 50% from one year to the next (Dana et al, 2005). In the longer term, trading between regions and between countries, and using better storage facilities, should resolve this problem. In the immediate term, governments may need to act to protect farmers from the damaging impact of volatile prices in thin markets.

2.5 Ensure complementarity with social protection strategies

77. No matter how fast agricultural incomes increase, or new economic opportunities outside agriculture are created, millions of people living in chronic poverty are unlikely to benefit significantly. These include the old, orphaned, disabled, those affected by long-term illness (including HIV/AIDS) or conflict. In addition, many other poor households are vulnerable to shocks such as illness, drought, or death of an income-earner member that could easily reduce them to a state of chronic poverty. These disadvantages can be passed down through generations of families and communities.

78. For these people, social protection programmes that ensure a minimum level of well-being and social security are important. But these policies must be designed and implemented in ways that will not harm agricultural and wider growth.

15 Of the 1.2 billion people in the developing world that live on less than US$1 a day, between 300 and 420 million people are estimated to be “chronically poor”. The greatest number of these live in South Asia (135–190 million), but the highest incidence is in sub-Saharan Africa, where some 14–18% of the total population is estimated to be chronically poor (Chronic Poverty Research Centre, 2004).
79. The international community has recognised for some time that long-term food aid and subsidised food prices can have a damaging effect on local agricultural markets (Maxwell, 1991). To lessen this, where food distribution remains a component part of social protection programmes (for example in school feeding schemes), supplies should be bought locally, to help build local markets. The European Union has recently adopted this approach in Ethiopia.

80. In many situations, agriculture provides households with an informal safety net, particularly in times of stress. Agriculture will continue to perform this role for many people, often effectively and at limited cost to government. However, efforts to develop agriculture as a primary safety net, for example by providing free agricultural inputs, should be cautiously approached and must be evaluated against alternatives.

81. For example, in Malawi, “targeted input schemes” that provide small packs of free seeds and fertiliser have increased the access of many poor households to food (Levy et al, 2004). However, there are concerns that these programmes may also be distorting markets for inputs and adding to the volatility of maize production and prices. This in turn may be reducing the incentives of others to invest, with significant negative implications for wider growth and poverty reduction.

82. These schemes may also encourage poor households to remain in high-risk, low-potential agriculture. Other forms of assistance (including cash) could provide them with a wider range of options. Examples include: a recent cash grant distribution in Somalia; ongoing cash relief in Ethiopia; and cash for work in Afghanistan (Harvey, 2005). These schemes can also help stimulate local demand in rural areas.16

83. Achieving complementarily between agriculture and food security policies is also important. Hunger is caused by poverty and achieving food security requires measures that go beyond simply increasing the supply of food (DFID, 2003a). Food security is not the same thing as national food self-sufficiency: 80% of the world’s malnourished children live in countries that are self-sufficient in food (World Bank, 2004). Nor will it be achieved by focusing exclusively on increasing food production at the household level. Poor people need to have the means to access food.

84. Broad-based agriculture has a critical role to play in this by raising the incomes of poor people, and reducing the price of food. Any plan to combat hunger that ignores agriculture’s role is flawed. But any plan that exclusively relies on increasing the supply of food without considering people’s ability to buy food is equally wrong.

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16 Cash systems may however also create distortions. Unless markets are working well, they could increase local prices
2.6 Ensure sustainability

85. Sustainability is not an optional issue, it is fundamental to achieving future growth in agriculture (DFID, 2004k). Agriculture is sustainable when it balances ecological, economic and political trade-offs, both today and in the future (DFID, 2003b). Sustainable agriculture is about more than organic or low-input farming. It must also take into account the contribution of agriculture to growth and poverty reduction and the needs of consumers.

86. After 10,000 years of agriculture, a combination of innovation and supportive policies has doubled global cereal output. Between 1961 and 2001, cereals output increased from 900 to 2,100 million tonnes and average per capita yields increased by 28% across the developing world, although there were significant regional variations (Rosegrant et al, 2001; FAO, 2000). In East Asia and South Asia per capita food production has increased by 45% and 16% respectively between 1970 and 1997. In Africa, it has increased by just 4% and in the 1990s per capita production declined (FAOSTAT, 2004).

87. But this increase in productivity has come at a price (see Box 2.1). Agriculture has expanded into areas where the land cannot support it. Even in areas with good-quality soils, intensive farming has all too frequently been badly managed due to poor policies and incentives and the inappropriate use of technologies (Hazell and Lutz, 1998). In some situations this is already beginning to compromise agricultural performance.

Box 2.1. The resource costs of increasing agricultural production

Reduction in available land

Over the past 40 years, the amount of land available for agricultural use has declined from 1.5 to 0.8 hectares per capita. Around 1.5 billion hectares of land is farmed, but 38% is already degraded. Each year, a further 5–12 million hectares are lost in developing countries (Scherr and Yadev, 2001). And a further 20–30 million hectares of irrigated land are severely affected by salinity due to poorly managed irrigation (Rosegrant et al, 2001).

Increasing water shortages

Twenty per cent of the world’s cropland is irrigated, producing 40% of our food. In South Asia, over 80% of available water resources are now used in agriculture, and these resources are often used very inefficiently. Agricultural policies often provide a “perverse incentive” to badly manage irrigation, with the rich benefiting while the poor are denied access to water. For example, in parts of South India the water table has fallen at a rate of two metres a year since the early 1990s, as richer farmers pump water from ever-deeper levels, well beyond the reach of the poor (Kumar, 2002). This level of extraction has additional impacts on the inefficiency of energy use.

Decreasing diversity in crops
Only 150 plant species are cultivated for food worldwide, and three (rice, wheat and maize) supply 60% of the world’s calories. Fifty years ago, over 30,000 varieties of rice were grown in India. Today, just 10 varieties account for 75% of all rice grown (Smale, 1997). This declining diversity in crop varieties increases the risk of disease and pest problems.

88. In 2025, the UN expects that the global population will be in the region of 8 billion people (UN, 1996). Feeding a population of this size will require world cereal production to increase from 2 billion to 3 billion tonnes (Dyson, 1999.). Despite some cautionary voices (for example Brown and Kane, 1994; McCalla, 1994), the majority view is that this increase in production can be achieved, in global terms, through a concerted effort to increase productivity. However, some regions will fare badly within this overall picture 17 (see Box 2.2). Meeting demand on this scale will almost certainly require agriculture to be intensified through a significant increase in the use of synthetic fertiliser and irrigation (Dyson, 1999).

Box 2.2. Global food demand and supply – projections to 2025

The global demand for cereal is projected to increase from 2.2 billion to 3 billion tonnes by 2025. This will largely be due to an increase in population. But changes in diets, specifically a growing demand for grain-fed meat, dairy and poultry products in many rapidly growing middle-income countries, will also be a major contributing factor. In fact, global production of cereals for animal feed increased by nearly 80% between 1967 and 1997, and accounted for 36% of all cereal consumption in 1997. This trend seems set to continue.

Forecasts suggest that, in overall terms, farmers will be able to produce 3 billion tonnes of cereal, despite additional pressures from climate change. That’s because farmers will be able to improve the productivity of their farmland by applying existing technologies and agricultural knowledge, with a much smaller proportion of any increase coming through land expansion. However, future harvests will almost certainly be more variable and regional differences between supply and demand will grow and hunger will persist in many countries, particularly in sub-Saharan Africa.


89. Farming systems that use fewer external inputs (such as chemical fertiliser, pesticides and irrigation water) have shown potential to meet local needs and aspirations (Bunch, 2002; Franzel et al, 2002; Versteeg et al, 1998; Winarto, 2004). These systems should be supported where they are effective in reducing poverty, but local successes have rarely been replicated on a large scale. By themselves, these achievements are unlikely to provide a

17 The International Food Policy Research Institute presents a range of possible scenarios (Rosegrant et al., 2001).
realistic option to meet future needs and tackling poverty on a world scale (Pretty, 2000).\textsuperscript{18}

90. The intensification of agriculture will inevitably lead to trade-offs with other aspects of sustainability. But a stagnant agriculture that uses available resources unproductively and ineffectively can also be unsustainable.

91. Minimising the negative aspects of intensification will require a blend of policies that creates incentives for farmers to discourage unsustainable practices, such as the over-extraction of ground water. Technologies that incorporate traditional and new knowledge are needed.

92. Climate change represents a new challenge. Agricultural systems and research will need to find ways to adapt crops to the impacts of climate changes (Box 2.3). At the same time, agriculture contributes to climate change, with current agricultural practices accounting for an estimated 30% of the global greenhouse gas emissions caused by human activity (IPCC, 2001).

<table>
<thead>
<tr>
<th>Box 2.3. The impact of climate change</th>
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<tbody>
<tr>
<td>The extent and implications of climate change remain uncertain, but models indicate that if temperatures increase towards the higher end of the predicted range, crop yields could fall by up to 20% over the next 50 years if current trends persist. In addition, any increase in the incidence of extreme weather events, such as drought, will have a major impact on vulnerable households that already have trouble coping with existing levels of climatic changeability. The impacts will be most severe where production systems are rain-fed, and consequently are most vulnerable to drought.</td>
</tr>
<tr>
<td>Sources: International Panel on Climate Change (2001); Bruinsma (2003)</td>
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\textsuperscript{18}This conclusion was based on DFID-funded analysis of more than 200 projects in over 50 countries. This included high-value organic products, which do not benefit small farmers.
3. Priorities for agricultural strategies

93. Building on the principles outlined above, agriculture development strategies should focus on seven priority areas.

3.1 Creating a supportive policy and operational framework

94. A stable economy with policies that encourage farmers to make sound choices about the allocation of resources is important to realising agriculture’s potential. In many developing countries, agriculture has been hurt by overvalued exchange rates, a disproportionately high burden of taxation, and policies that kept prices low.

95. A growing agricultural sector needs to be supported by a number of basic public functions, including an effective legal and regulatory system. It also needs effective research and information (extension) services that meet the demands of users. In many developing countries these functions are often missing or operating sporadically and with limited coverage.

3.2 Effectively targeting public spending

96. Creating a supportive environment means getting the right volume and pattern of public expenditure. Past evidence shows that strategic public spending in agriculture can be highly effective in increasing agricultural productivity and reducing poverty. Work undertaken by IFPRI shows the critical impact public spending (including that on specific subsidies) has made to accelerating agricultural growth and to reducing poverty. It also reveals the important ways in which the impact of different types of public spending on agricultural growth and poverty changes over time (Fan and Hazell, 2001a,b). India provides a particularly striking example of these important changes (see Box 3.1).

Box 3.1 The changing impact of public spending on agriculture – the case of India

In the early stages of India’s green revolution, government spending on agriculture generated returns larger than their costs. Investment in roads, education, irrigation infrastructure and agricultural research were especially important. Every rupee invested in road construction in the 1960s yielded almost nine times that amount in increased agricultural output with comparable benefit to cost ratios for education of 5.97, irrigation investment of 2.65 and agricultural research of 3.12. Spending on fertiliser, irrigation and credit subsidies also generated positive returns during this early period of growth with respective benefit to cost ratios of 2.41, 2.24 and 3.86.

As the Indian economy has grown, the returns to public investment in agriculture have generally fallen, although investment in roads (3.17), education (1.53) and particularly agricultural research (6.93) still generate
positive benefit to cost ratios even into the 1990s. In contrast, spending on
subsidies by the 1990s had become uneconomic, resulting in increased
output worth less than the cost of their provision (Fan and Hazell, 2001a,b).

97. This means public spending should be carefully targeted and
effectively coordinated between ministries. Priority should be given to
spending on public goods that support private investment, maximises the
impact on productivity growth, and benefits the poor. In many developing
countries today, particularly in Africa, public investment in support of
agriculture is at low levels and is poorly focused. Areas with high and proven
returns, like agricultural research, are often starved of funds, crowded out by
spending on politically popular items like fertiliser subsidies. Public
expenditure reviews that identify growth priorities can play a key role in
redirecting public spending to where its impact on poverty will be greatest.

98. Government expenditures in support of agriculture must also evolve as
countries develop. For example, while subsidised irrigation was critical to
India’s green revolution, its continued subsidisation now largely benefits richer
farmers. This is not only inequitable, but also encourages inefficient
investment decisions and is leading to the unsustainable use of scarce water.
Reforming these subsidies is, as in the developed world, often politically
difficult.

3.3 Tackling market failures

99. Poorly functioning markets for inputs and products have been a major
challenge to agricultural development. Some Asian governments successfully
addressed this market failure by assuming a central role in markets
themselves, albeit at substantial public cost and often inefficiently. Attempts to
replicate these systems in Africa in the 1970s and 1980s largely failed. State-
owned agencies proved unable to provide reliable services and inputs to
needy farmers, despite the huge investments involved.

100. Recent attempts by many African countries to liberalise markets have
been disappointing. Opinions on why this is the case are divided. For some, it
is a result of incomplete or inconsistently implemented liberalisation (Jayne et
al, 2002): markets will only effectively work when they are fully and
consistently liberalised. For others, it reflects the reality of a small and poorly
developed private sector that is unable to deliver what is expected of it

101. Either way, getting markets working is probably the most important
challenge for the poorest countries if they are to revitalise their agricultural
sectors. Efforts should focus on creating effective markets through
encouraging private sector participation by:

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19 In Zambia, the government spends 0.7% of GDP on fertiliser subsidies, 70% of which is
used by the country’s commercial farmers who could afford to pay full market prices (World
Bank, 2001a).
20 For a discussion of these issues see DFID (2004b).
• Improving physical access to markets through investments in infrastructure, using different combinations of public and private funds

• Improving access to market information, using established means such as radio, and new information technologies such as mobile phones

• Improving the access of traders and producers to finance and insurance markets, for example by setting up systems to lessen price risk

• Supporting the development of approaches and policies to reduce the volatility of prices in important product markets. This could include support to develop commercially-based storage such as warehouse receipt systems to help smooth out price variations (Coulter and Onumah, 2002)

• Helping to link small producers to established markets as is happening through commodity associations in Southern Africa

• Removing restrictions and controls on the sale and purchase of agricultural products

• Putting in place effective standards for quantifying and grading products, and gearing these standards to the needs of small farmers.

102. For countries in the earliest stages of development the critical importance of overcoming market failure may provide some justification for the state to play a more direct role in building and creating markets. These actions demand levels of state capacity and effective governance that have in the past been lacking. This is possibly the most contentious area on the agricultural policy debate – but one that must be tackled.

103. Possible measures include the provision of guarantees or subsidies by the state to traders and suppliers aimed at overcoming perceptions of risk or the high costs of working in small and weakly developed markets. These can be implemented in relatively market-friendly ways, for instance through vouchers for subsidies or partial guarantees to encourage banks to take risks. However, these must be seen as temporary measures focused on removing the barriers to the private sector’s participation in markets. The indiscriminate or prolonged use of subsidies may add to rather than address the underlying problem. Subsidies should not be used as a means to provide a market for all farmers, or to support farmers’ incomes. This is unlikely to be affordable and often benefits larger, more successful farmers.

104. Government and markets should be seen as complements rather than substitutes, with the role of the government being to create markets where they are missing, and to introduce the regulations necessary to make markets function properly (Stiglitz, 1998).

105. Even if markets operate efficiently for some people, formal and informal barriers often exclude others from participating in and benefiting from them.
Exclusion can limit people’s access to services and assets. Exclusion often manifests itself in “segmented” or “interlocked” markets.

106. In a segmented market, different terms are offered to different groups of people for the same product or service. For example, men and women may be paid differently for identical work; and access to land and other resources may be dictated by ethnicity or caste rather than any economic rationale.

107. Markets become interlocked when individuals or households can only gain access to a good or service through a particular individual, known as a “patron”, who also controls their access to other goods and services. In sharecropping the landowner often sells the tenant inputs and buys the final product in addition to controlling the access to land. Sometimes, interlocking might be the only way that people can access goods and services, and manage the risk of crop failure (Dorward et al, 2001). It becomes a problem when patrons abuse their power over their clients’ choices and exploit them.

108. If segmentation and interlocking reduce farmers’ incentives to innovate, invest or take risks, they can have negative effects on growth. Although it is difficult to address exclusion directly, responses that strengthen people’s bargaining positions in markets include:

- Producer-based organisations that truly represent the interests of their members (see Box 3.2)

- Institutional reforms, including decentralisation, which might make governments more receptive to poor people’s voices

- Improving the flow of market information into rural communities.

Box 3.2. Civil society organisations that give poor people a voice

Interest groups can play an important role in shaping agricultural developments in favour of poor people, by enabling poor people to express their views and influence policy processes in a meaningful way.

In Latin America, there has been a long tradition of peasant mobilisation by popular movements to influence change. Another example is in Senegal, where the Comité National de Concertation des Ruraux brings together several producer federations. It has become one of the main participants in discussions between government, international aid donors and producers on agriculture-related issues like land tenure.

On a smaller scale in Sumatra, traditional village governance institutions have re-emerged in the past five years to deal with agricultural tenure issues and to represent local concerns in external discussions.

Source: DFID (2004m).
3.4 Filling the agricultural finance gap

109. Finance remains a real obstacle for many poor farmers. Their income comes only after harvest and many do not have sufficient access to credit, savings or remittances to finance the costs of inputs such as seed and fertiliser. The previous generation of state-operated activities, such as targeted agricultural finance schemes and input schemes operated by parastatal marketing organisations, has not worked effectively. Much has been learned about effective microfinance and promising models for improving poor people’s access to financial services are beginning to take root in many countries. But microfinance is often not available for poor farmers or for agricultural activities, except where there are relatively concentrated populations and quite well diversified economies, such as Bangladesh.

110. The situation is particularly acute in much of rural Africa, where a combination of agricultural risk, scarce borrower information, cumbersome legal procedures and high transaction costs mean that many financial service providers are reluctant to serve small farmers. There is a shortage of seasonal credit to agriculture (Dorward, et al, 2001; Murdoch, 1999), and what credit there is tends to be provided by informal institutions, agribusiness traders and processors, rather than by formal financial institutions (DFID 2004c). Government subsidy and guarantees may be justified in these circumstances (although not interest rate subsidies) in order to build the capacity of rural and agricultural finance providers.

3.5 Realising the benefits of new technologies

111. Technology is central to accelerating agricultural growth. Realising the benefits of technology and innovation will require: working with poor farmers to identify and tackle their key problems; concerted efforts to develop a range of new technologies and practices; and systems that enable farmers to hear about, choose from and obtain appropriate technologies.

112. Research plans must be developed for specific contexts, with promotion of adaptation and uptake factored in from the beginning. They should reflect agriculture’s expected role in growth and poverty reduction, and address the implications of longer-term trends such as climate change. Research resources will need to focus on locations and markets where there is potential for improved productivity and strong links to the wider economy, in particular, food staples. Attention should be placed on employment-generating technologies, making better use of water and tackling soil fertility.

113. For this to happen, there needs to be an effective system of publicly funded agricultural research at the national and international level, and systems in place to make technology and information available to the people who need it. International agricultural research has built up an impressive record to date, but improvements are still needed in the linkages between clients and researchers, and between national and international parts of the
system. Better public access to privately financed agricultural research is also needed.

114. Biotechnology has the potential to provide significant benefits for poor people if it provides technologies relevant to their needs and is managed safely. This is particularly true for Africa, where there is limited potential to improve yields of major staples from existing varieties. Biotechnology must be accompanied by: supportive public policies; assurances on safety; and adequate regulation at a reasonable cost.

115. Concerted measures are also needed to improve public access to new technologies, which are often privately developed (DFID, 2004d). The African Agricultural Technology Foundation (AATF) is a good example of this (Box 3.3).

Box 3.3 Accessing the knowledge of the private sector – the African Agricultural Technology Foundation (AATF)

Public spending on agricultural research in Africa is falling. At the same time, research spending by the private sector is increasing and many companies are developing new technologies, which could be of great benefit to Africa’s resource-poor farmers. Improving public access to these technologies – many of which are covered by patents – is a matter of increasing urgency.

Supported by USAID, the Rockefeller Foundation and DFID, the AATF is a not-for-profit foundation based in Nairobi, led, managed and directed by Africans. It helps farmers access productivity-enhancing agricultural technologies held by the private sector by facilitating public-private partnerships. In order to do this, the AATF negotiates royalty-free transfers of patented technologies, and enters into contractual arrangements with institutions that will manage the use of these technologies.

116. In many parts of the world, particularly Africa, agricultural extension services are severely limited in their ability to reach farmers. There have been many innovations in recent years in knowledge systems involving the public and private sectors. The challenge is to develop these at scale in a cost-effective manner. Many farmers are unable to access good quality seeds due to the withdrawal of many commercial seed companies. Addressing these issues is a priority.

3.6 Improving access to resources and secure property rights

117. Agricultural growth has benefited poor people most where land ownership has been relatively equitable (Easterly, 2001; Mellor, 2001b). Land ownership, however, often remains inequitable, reducing agriculture’s potential to reduce poverty (Binswanger, et al, 1995).

118. Well-defined and secure property rights are important in encouraging farmers to invest. Without them few farmers will take the risk of improving land which they may lose. Clear and transferable property rights also allow land to
be used as security by farmers wanting to borrow money. This is particularly important for poor farmers who would otherwise have limited access to credit (Deininger, 2003; de Soto, 2003).

119. The extent to which formal land titling and registration are important in defining property rights, however, varies. As economies develop, more formal legal-based systems become more important. In less developed situations, formal titling may be less important, provided local practice accepts informal tenure.

120. In situations where land is increasingly bought and sold, evidence indicates that formal land titling and registration are very important for farmers. For example, in Thailand, the widespread introduction of formalised land titles was seen as central to farmers accessing credit as the title provided them with a credible means of offering their land as security against the loan (Feder, 1987). In contrast, research undertaken in three African countries (Ghana, Kenya and Rwanda) showed that investment and the use of credit did not differ significantly between land titled to individuals and land that was otherwise similar, but untitled and held in communal tenure (Migot-Adholla and Bruce, 1994).

121. Moreover, formal land titling is not a substitute for improving the rural poor’s share of land. It can become a weapon for the strong – who have good lawyers and formal title – against the weak – who have neither (Platteau, 2000). What’s more, the process of land titling and registration is often cumbersome and slow. Land administration systems need to be “fit for purpose”. Governments need to better match legal requirements to administrative capacity. Where there is strongly shared identity and interest, group titling may be a feasible alternative that is often not recognised in law.

122. Apart from outright ownership, there are a variety of other ways in which poor farmers can increase their access to land. These include approaches such as leasehold or sharecropping. There is growing evidence that these systems can be both efficient and equitable (Deininger, 2003). However, in many countries the legislation dealing with leasing and sharecropping is unnecessarily restrictive, and needs revising.

123. Special attention needs to be given to land access for the most marginalised communities and this is already starting to be addressed. For example, national legislation and international conventions are increasingly recognising indigenous land rights. But formal recognition of these rights needs to be complemented by far-reaching action that empowers communities to exercise them (Deininger, 2003: 66). Furthermore, regulation must ensure that formal land titling does not result in the poor being excluded from common lands.

124. Women’s rights to land have traditionally been neglected, and their access to land often depends on their relationship with men. Innovative legislation has been introduced in India and parts of Latin America, for example, to provide women with joint titling and equal access to courts for
adjudication of land disputes. But to make this legislation effective, complementary measures are needed to monitor how it is being put into practice, and to ensure that women are aware of their rights (Deininger, 2003: 57-62).

125. In land redistribution, “willing buyer, willing seller” must remain the central principle. Making this effective for poor people means measures to help them to buy land, and to encourage landowners to sell it to the poor. To achieve this, legal and administrative procedures must be simplified, and the financial position of the poor in relation to buying land must be strengthened.

126. Expanding irrigation, as noted by the Commission for Africa, is fundamental to improving agricultural performance. But water is becoming increasingly scarce. Water resources are often shared across borders, making resource management complex. In areas where expanding large-scale irrigation is unfeasible, the focus must be on developing smaller-scale irrigation and water management systems.

127. Measures are also often needed to improve equal distribution of irrigation water. The establishment of tradable water rights could play an important role in achieving this and in improving the efficiency of water use.

3.7 Reducing distortions in international markets

128. Subsidies, tariffs and non-tariff barriers can distort patterns of international agricultural trade and prices, and must be reduced (DFID, 2004). The World Trade Organisation’s Doha agreement (2001) contains commitments by developed countries to do this, but progress has been slow.

129. The move to a more liberalised international agricultural trade regime will, however, not bring the same benefits to all countries. It may cause difficulties for some developing countries, in particular those dependent upon food imports, or those losing preferential access to markets. Measures will be needed to help these countries to adjust. Nevertheless, in the long term, liberalisation should result in a more favourable international structure of agricultural prices, which should benefit most poor countries.

130. At the regional level, tariffs and cumbersome customs procedures often restrict cross-border and “informal” trade. They are an impediment to market development and should be removed. Infrastructure also needs to be improved to reduce high transport and distribution costs, as these expenses often make regionally produced products uncompetitive relative to imports.
4. Priorities for DFID

131. We are committed to improving agriculture’s performance, particularly in Africa, as an effective contribution to poverty reduction. Making this happen will require more effective development assistance. It will need a concerted long-term commitment from us and from partners, including developing country governments; other development agencies; important regional initiatives such as the Comprehensive African Agricultural Development Programme (CAADP) produced by the Africa Union (AU) and its programme the New Partnership for Africa’s Development (NEPAD); civil society and the private sector. Our effort will be guided by the principles and priorities outlined in this document.

132. This document provides the essential rationale for DFID to support agriculture and lays out the principles that should direct our work. We will:

- Work with partners to galvanise international support for agricultural development
- Assist developing countries to use their own resources to achieve faster agricultural growth
- Assist developing countries to achieve more effective handling of agriculture in the next generation of poverty reduction strategies, with a particular emphasis on its role in achieving faster poverty reducing economic growth through its links to the wider economy.

133. Working within the framework of countries’ own plans and priorities, we will:

- Focus on improving the effectiveness of our development assistance to agriculture
- Find practical ways to harmonise our support with that provided by others, based on our relative strengths and presence in specific countries.

134. We recognise that important differences exist between countries in their ability to use development assistance, including specific issues in fragile states. We will:

- Match the way we provide assistance to agriculture (including the use of poverty reduction budget support) to each country’s situation, with the objective of providing stable, predictable and useful resources.

135. Measuring the impact of this new approach on our actions is important and we will:

- Publicly take stock at the end of 2006 of how we are performing against the commitments we have made.
136. The emphasis given to agriculture’s wider role in poverty reduction particularly through accelerating economic growth, represents a change from our recent approach that has focused on the direct contribution to rural livelihoods. Within the framework provided in this document the following areas for action emerge. The priority of these actions will vary according to circumstances, including the country’s own priorities and DFID’s expertise and local presence.

Creating a supportive policy framework

137. We will support developing country governments to:

- Create a long-term vision for agriculture and to reflect this within their poverty reduction strategies
- Ensure the participation of representatives of the rural poor in shaping agricultural policies
- Strengthen and, if appropriate, reform public sector institutions so they can deliver important functions which support agricultural development
- Ensure that agricultural development strategies provide incentives for the sustainable use of natural resources and environmental services.

Better focusing public spending in agriculture

138. Working with governments and our development agency partners, we will:

- Help to build the capacity and accountability of governments to direct public spending to where it will have the greatest impact on agricultural growth and poverty reduction, which may include spending of ministries other than agriculture
- Where appropriate, we will encourage governments to allocate resources to rural infrastructure – particularly roads – and support efforts to involve the private sector in funding infrastructure.

Making markets work better

139. Working with government, civil society and the private sector, we will:

- Support countries to reform cumbersome business and other regulations which discourage investment and risk taking by farmers
- In Africa, especially, find practical ways to overcome market failures in key input and output markets, including through the use of guarantees or targeted subsidies
• Work in partnership with the food industry- including supermarkets- to minimise the impact of company-imposed standards on poor farmers. We will support pilot projects to bring together retailers, small producer organisations and standard-setting bodies to ensure smallholders can access markets.

Meeting the agricultural finance gap

140. We will work with our partners to improve men’s and women’s access to rural financial services, with a particular focus on seasonal credit, by:

• Supporting the innovative use of existing infrastructure for rural financial services, such as post offices, state banks, retail outlets and the commercial agricultural sector

• Better understanding and addressing the finance and investment constraints faced by commercial agriculture, particularly in Africa.

• Funding the Consultative Group to Assist the Poor (CGAP) and the Financial Sector Reform and Strengthening Initiative (FIRST) to extend access to financial services in rural areas

• Encouraging International Financial Institutions, African central banks and Ministries of Finance to prioritise access to finance, and equipping them with data and headline indicators to measure progress on reducing financial exclusion

Realising the benefits of agricultural science and technology

141. Working with governments, other donors and the international agricultural research agencies, we will:

• Increase our financial support for public research into agricultural science and technology, and work to improve poor people’s access to research findings

• Prioritise technologies with the greatest potential to reduce poverty through their contribution to economic growth and employment creation, and to address longer term issues including AIDS, changing market conditions and climate change

• Improve the access of resource-poor farmers to the products of privately funded research through mechanisms like the African Agricultural Technology Foundation

• Improve farmers’ access to high-quality seed by supporting initiatives such as the Seeds of Development Programme which aim to develop the capacity of private sector organisations to provide services to poor farmers
• Support international efforts to prevent the loss of genetic diversity in important food crops and animals

• Support governments in resolving contentious science-related issues, such as intellectual property rights and the adoption of genetically modified crops

• Help countries to develop feasible low-cost regulatory systems to ensure the safe application of new technologies, including biotechnology.

Improving poor people’s access to land and water

142. Working with developing country governments, civil society and other development agencies, we will, in accordance with EU Guidelines21:

• When requested, support programmes for voluntary land redistribution by increasing poor people’s ability to buy land and by making legal processes more accessible to them

• Support efforts to improve land policy, legal and administration systems, including initiatives to make leasehold and other such systems operate more efficiently and consistent with the land rights of marginalised groups and women

• Support programmes seeking to improve access to water resources by the poor.

Making social protection complementary to agricultural growth

143. Working with our developing country partners and other development agencies, we will:

• Gather evidence of the impacts of social protection on investment in productive activity and on local markets

• Use this evidence to inform dialogue with governments on how and why to improve links between social protection and agricultural development policies

Making international agricultural trade benefit the poor

144. Working closely with other UK government departments, we will:

• Work with European development agencies towards progressive reform of the EU’s Common Agricultural Policy in ways that benefit developing countries

• Work to ensure that the EU adopts a pro-poor stance in negotiations with the World Trade Organisation

• Ensure that research is carried out into the impacts of developed countries’ agricultural and trade policies on developing countries and the results shared with the international community, and support developing countries in using the resulting evidence

• Combine our efforts to liberalise trade with efforts to help low-income countries respond effectively to any resulting market opportunities

• Ensure that international negotiations about agricultural liberalisation deal with the transitional needs of countries facing immediate difficulties, including those that rely upon imported food or will lose preferential market access

• Work in partnership with international standard-setting organisations to ensure that new product standards are based on assessments of risk, not attempts to protect markets

• Help developing countries to participate in these formal standard-setting procedures

• Ensure that estimates of the impacts of changes to EU standards affecting imports from developing countries are always publicised.
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