Future Agricultures

AFRICA PROGRESS PANEL

Raising agricultural productivity in Africa

Options for action, and the role of subsidies

Africa Progress Panel
Policy Brief

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SUMMARY AND KEY MESSAGES

- African agriculture was often neglected by most governments and donors in the 1980s and 1990s. Now, however, there is renewed commitment to agriculture centred on the Comprehensive Africa Agricultural Development Programme (CAADP), the Maputo declaration of 2003 and donor promises of increased funding for agriculture.

- What, then, needs to be done to boost production and productivity? On some matters there is broad agreement: there needs to be favourable environment for investment and governments need to invest more in public goods such as rural roads, agricultural research and extension services, and rural schooling, clean water and health care.

- But often in rural Africa there are market failures in that farmers cannot get access to credit, insurance and inputs. These can be severe and leave small farmers in a poverty trap from which they struggle to escape, even when the technology to allow them to produce more exists. These market failures may be overcome by institutional innovation, but in some cases stronger state intervention may be needed — including the use of input subsidies. But even the availability of credit may have limited benefit to millions of the poorest farmers. Incremental production from improved inputs will not necessarily result in surpluses but is needed to reduce family hunger.

- Subsidies can help overcome poor farmers' inability to obtain credit or take risks, to allow farmers to learn about inputs, and to develop input supply to levels where scale economies are captured. They can also be justified on grounds of equity, to overcome soil degradation and improve soil quality in the case of fertiliser, and to stimulate production to reduce the cost of food. Moreover they can be effective, as seen in the early phases of the green revolution in Asia and in contemporary Malawi.

- On the other hand subsidies can be costly, with costs rising over time, difficult to remove, badly targeted so that richer farmers get much of the benefit, and can undermine the development of commercial channels. India now spends more on subsidies to fertiliser, irrigation water and rural electricity than it does on education. Moreover, there are alternatives to subsidies, as Kenya's experience of liberalised fertiliser distribution shows.

- How then should African countries support their farmers through subsidies? Much depends upon local circumstances – whether rural financial and input markets are robust or not functioning at all, for example poverty levels among farming households, and productivity levels for staple goods. Decision-makers need to be clear, however, on the objectives pursued in using subsidies and consider alternative and complementary ways to achieving them. They also need to be aware of the potential pitfalls.

- Where subsidies are used, they need to be 'smart': targeted to those who need them, limited in time, and designed to enhance commercial distribution rather than supplant it. Complementary investments in transport and input dealer training can reinforce these programmes and make it easier to reduce or remove subsidies in the future.

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FOREWORD

This policy brief was prompted by a question posed to the Africa Progress Panel by a newly appointed African Head of Government: 'How can I best understand the most effective way to increase agricultural production and productivity in my country? What are the key issues and lessons from other countries?'

As this brief makes clear, much depends upon specific country circumstances and desired policy outcomes. But a number of issues emerge.

There has been insufficient investment in agriculture in Africa, not least relative to other parts of the world. The international community has not been as supportive as it could have been of African agriculture in terms of policies and financial support. Indeed, on some issues, notably subsidies, it stands guilty of 'speaking with forked tongue', if not of outright hypocrisy. One peer reviewer pointed out that the US, Europe and many Asian countries have maintained subsidies for 50 years or more, yet African countries have been advised by their donor partners to avoid or limit their use.

There have been a number of encouraging international commitments made, including the Comprehensive Africa Agricultural Development Programme (CAADP), and more recently the G8 Food Security Initiative. The challenge is to translate these commitments, when there are other demands on tight national resources, into budgets and investments.

Global economic and financial turbulence, repeated food and fuel crises, the deepening impact of climate change, and growing awareness that current models of fossil fuel-dependent economic development are unsustainable – all these concerns affect decisions being taken on how best to increase agricultural production and productivity. The ultimate goal must be elimination of hunger and malnutrition for hundreds of millions of people in Africa.

Growing awareness of these issues is also prompting a reappraisal of the role of subsidies. The question is not whether to increase access to inputs, but how, given their potential knock-on social, political and economic benefits, and how to ensure that they are administered effectively and efficiently, in conjunction with other measures that reduce vulnerability and risk, and that increase economic opportunity. Subsidies can be the means to provide readily accessible food to rural households, thereby reducing hunger and under-nutrition, giving families the opportunity to free themselves from dependences upon uncertain food markets, food aid and poorly paid casual work.

It proved to be quite a challenge to produce a succinct policy brief to answer the question put to us – one aimed at high level decision makers who are not necessarily agricultural experts but who share responsibility for social and economic progress. We hope this will be received as a useful contribution to an ongoing dialogue.

WHAT'S THE PROBLEM?

Most Africans in poverty live in rural areas. South of the Sahara, it is estimated that 273 million people live on less than one US dollar a day, with 76% of them living in rural areas (Chen & Ravallion 2007).[1]

Hunger accompanies poverty: in 2009 Food and Agriculture Organisation of the United Nations (FAO) estimates that 265 million are undernourished in Sub-Saharan Africa, 98 million more than in 1990/92.

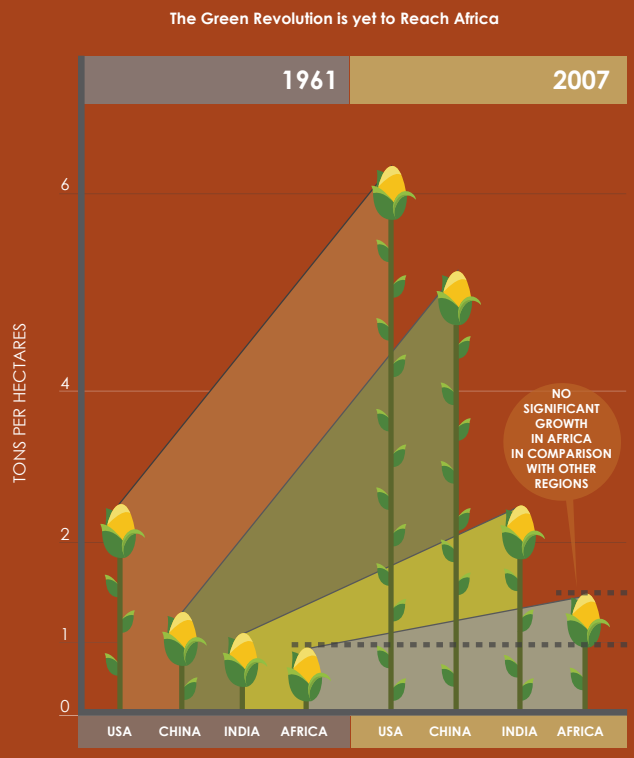
Although hunger results from poverty rather than any absolute scarcity of food,[2] both poverty and hunger are predominantly rural; and for most rural Africans, agriculture is the main source of livelihoods.[3] Yet for much of Africa progress in raising agricultural productivity over last three decades has been disappointing. While food production per person in Asia almost doubled between the early 1960s and the middle of the first decade of the 21st century— with East Asia almost tripling food output per capita, in Africa food production per person barely improved at all. At the same time cereal imports into Africa have burgeoned: from under 5M tonnes a year in the early 1960s to over 50 million tonnes by 2005.

That said, agricultural growth varies considerably across countries, see Box A. Growth has also improved overall during the last two decades.

Clearly more needs to be done to raise agricultural productivity, to relieve the poverty and hunger of rural people and to increase food production that will tend to bring down the cost of food, especially in inland parts of the continent, to benefit the growing numbers of urban poor who buy in food.

THE STATE OF AFRICA'S GREEN REVOLUTION

The Green Revolution breakthroughs in cereal yields that propelled agricultural and overall economic growth in Asia have yet to take hold in most African countries. While the last five years have seen a new momentum towards a transformation of African agriculture, driven by national governments and multilateral institutions and supported by specialized civilsociety organizations like the Alliance for a Green Revolution in Africa (AGRA), enormous challenges remain. Nonetheless, there are some encouraging success stories. Malawi, for example, transformed itself from a food-deficit country to a food-exporting country, with excess production over national consumption for four years in a row; and Rwanda's agriculture grew by 13 and 17 per cent, respectively, in 2008 and 2009. Unfortunately, such stories are still too rare.

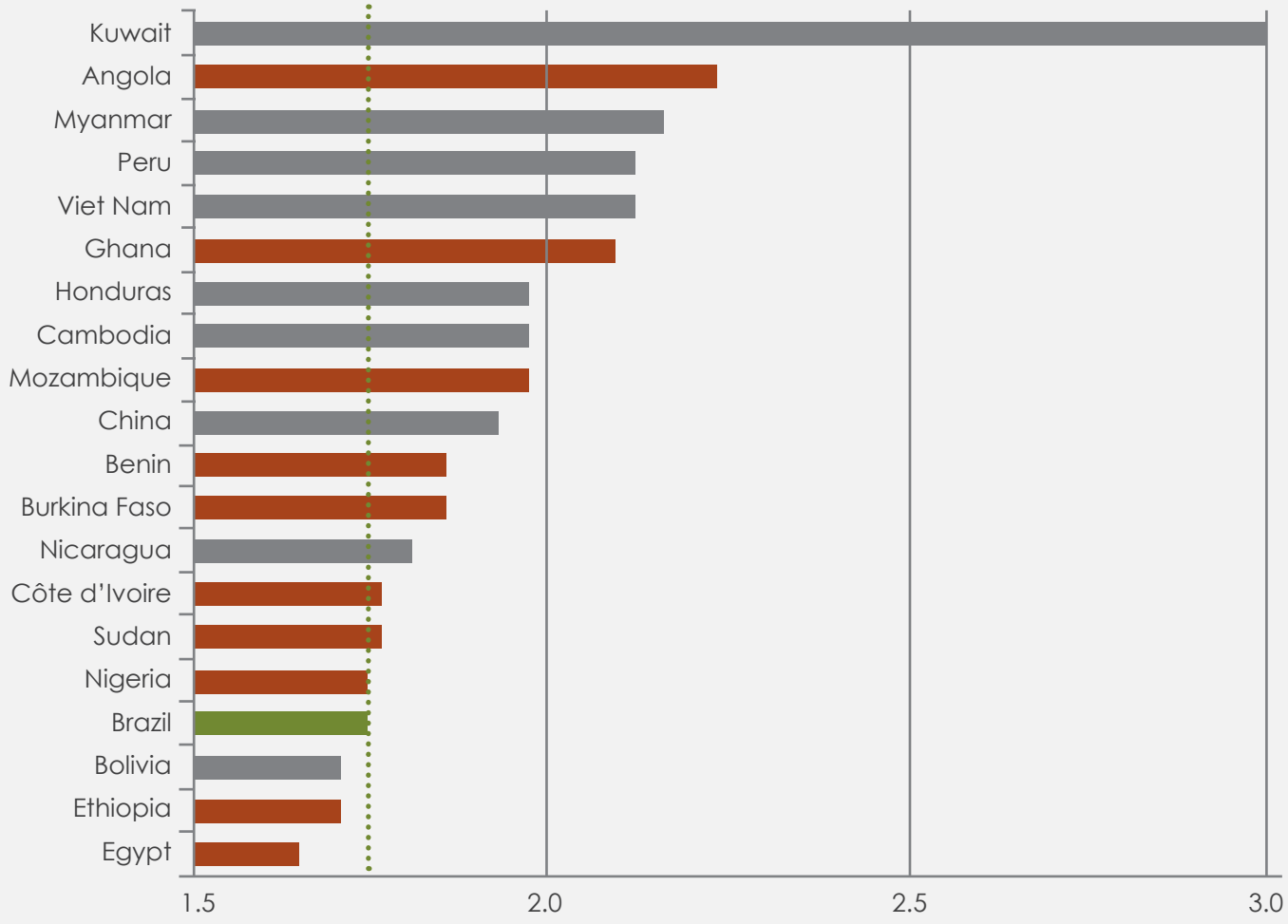


Source: The Bill and Melinda Gates Foundation (2009)

BOX A: GROWTH IN AFRICAN AGRICULTURE, WORLDS OF DIFFERENCE

Statistics for Africa as a whole or for Sub-Saharan Africa hide important country variations. Between 1990/92 and 2004/06, for example, agricultural production increased by just over 50% for the continent. But some countries did much better. Indeed, if all the countries in the world with more than 1 million inhabitants are ranked by their agricultural growth over this period, then ten out of the first twenty come from Africa, see Figure 1. Brazil is often quoted a particular success in agriculture, yet no less than eight African countries grew faster.

Figure 1: Growth of agicultural production, 1990/92 to 2004/06, ranked by country

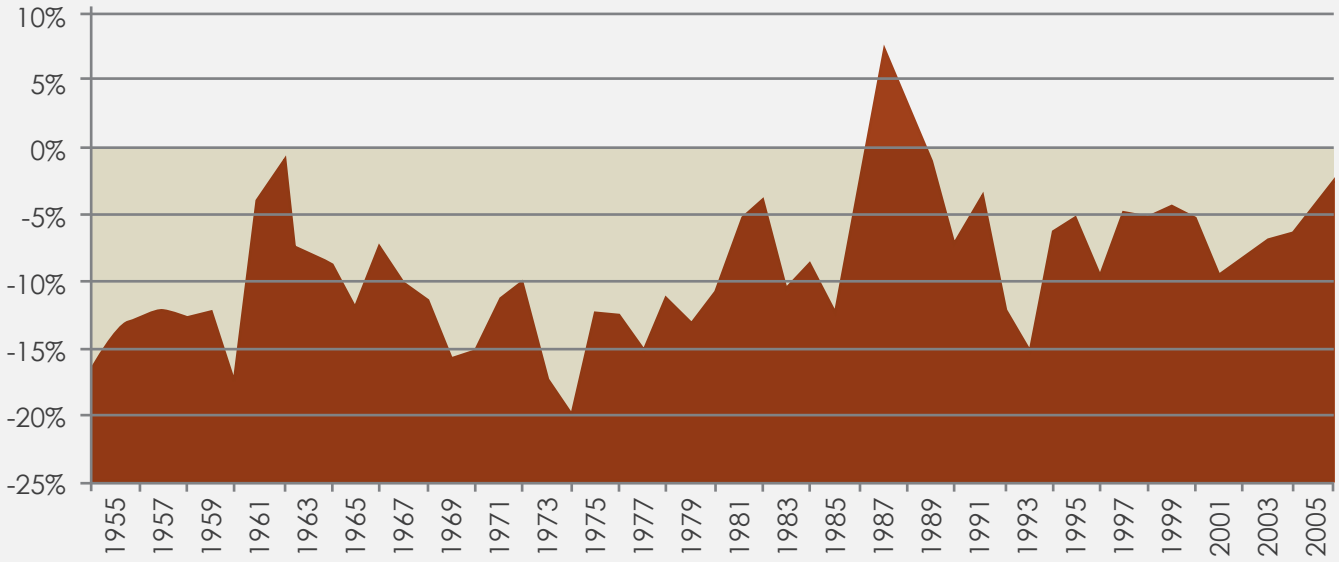


Source: FAO data on gross production indices

PAST SUPPORT FOR AFRICAN FARMERS

In the past African farmers have received little support, especially when compared to that given to many Asian farmers during the green revolution. Indeed, for most of the last fifty years, farmers in Africa have been subject to a **negative** net rate of assistance when considering the balance between public spending and protection on the one hand, and forms of explicit taxation on the other, see Figure 2.

Figure 2: Net rate of assistance to agriculture in Africa, 1955 to 2005



Source: Anderson & Valenzuela 2008

Note: Africa includes: Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Madagascar, Mali, Mozambique, Nigeria, Senegal, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

During the 1970s the effective taxation of farmers that this implied was usually at least 10% and often higher. How did this happen? Some of this arose from explicit taxes, in particular those applied to export crops. But much of the taxation was implicit, in the following ways:

- Controls on prices of domestic food crops that kept prices low for the benefit of consumers;
- Inefficiencies and sometime corruption in public marketing boards that deprived farmers of the share of the price that they should have received;
- Overvalued exchange rates in the 1970s and early 1980s that depressed prices in local currency to exporters, while making competing imports of food cheaper;
- Protection of domestic industry through heavy tariff and other barriers on competing industrial imports, thereby tending to draw resources out of farming and into industry, and to push up the price of consumer goods and agricultural inputs produced by industry.

It was not for nothing that the 1970s saw agricultural growth slow to a crawl across much of Africa: farmers were starved of incentives.

Subsequently, economic liberalisation saw exchange rates depreciate, the role of marketing boards cut back, industrial protection reduced, and heavy taxes on export crops trimmed. The result has been that net taxation of farmers has been much reduced.[4] Yet African farmers are still on balance, taxed, while those in most of the rest of the world are generally assisted.

Moreover, African farmers have suffered from adverse international conditions: declining real prices on world markets for agricultural exports; and from protectionism in OECD countries that has reduced market access for some crops and livestock products, and has seen OECD countries export subsidised produce, reducing world prices and competing unfairly with local produce on domestic markets, see Box B.

BOX B: HOW MUCH DOES AGRICULTURAL PROTECTION IN THE NORTH COST THE SOUTH?

Globally, estimates come from models that examine what might happen if Northern protection were dismantled. For example, the World Bank's Global Economic Prospects 2004 looked at the effects of reducing agricultural tariffs to 10% in OECD countries, and to 15% in developing countries, eliminating export subsidies, with all domestic subsidies decoupled from production levels. The model predicted that this would increase income across the world by US$193 billion, and 144 million persons would be lifted out of dollar-a-day poverty.

The World Development Report of 2008 on agriculture (World Bank 2007) stated that:

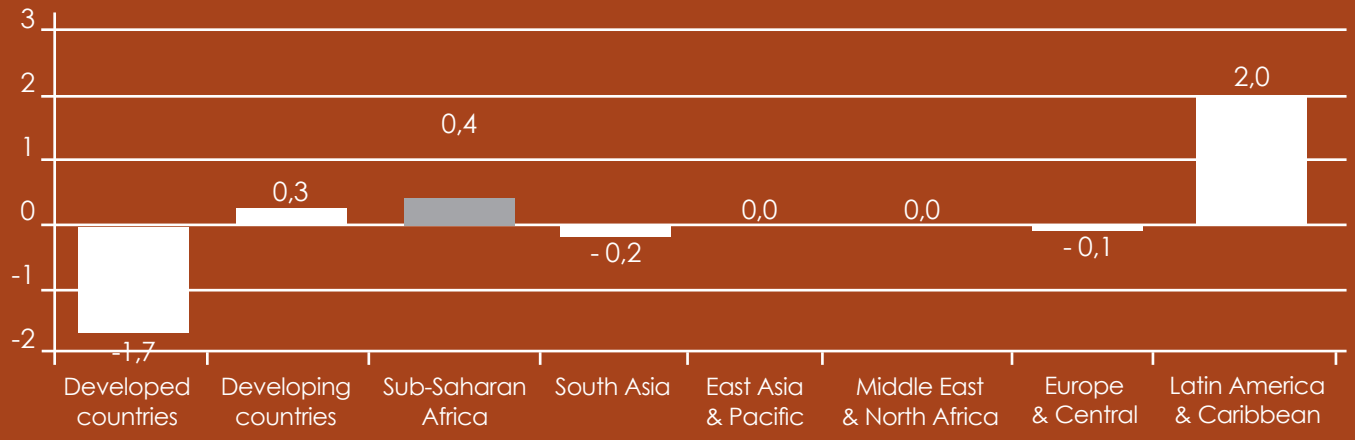
'Developed-country agricultural policies cost developing countries about $17 billion per year—a cost equivalent to about five times the current levels of overseas development assistance to agriculture'

If OECD protection were reduced it is likely that world prices of agricultural commodities would rise. Overall this might be by around 5%: not a large increase, but worth having for countries that depend on agricultural exports.

The gains from ending protection vary by region, see Figure 3, and country. As might be expected from the price rises, countries that are net exporters of farm produce gain, while net importers lose.

Figure 3: Impacts of global trade reforms

Change in annual agricultural output growth from 2005 to 2015, following full liberalisation in 2005



Source: World Bank, 2007, Figure 4.8, derived from Anderson, Martin & van der Mensbrugghe 2006

Some specific cases of harm have been studied, most notably that of the effect of US subsidies to its cotton growers. Since the US is a major exporter of cotton, the additional production that arises from the subsidies goes to the world market and pushes down the prices. African cotton producers, many of them in West Africa, thus lose. Models of this case show that cotton prices would rise by up to 15%, although results partly depend on how much textile producers would switch to synthetic fibres if the cotton price rose. How much would West African producers gain from this? It depends on the estimate of the price rise, and the extent to which it is considered that farmers would expand supply if offered a better price. Estimates thus run from US$45 million to US$330 million a year. The gains would be greatest if governments were to invest in roads, technology and improved logistics and organisation of the supply chain. In some cases cotton farmers have also been taxed heavily and reducing that burden would help as well.

Sources: Anderson et al 2006, Fadiga et al. 2004, Shepherd & Delpeuch 2007, Wise 2004, World Bank 2007

It is not surprising that leaders turned their attention back to agriculture, with heads of state pledging at Maputo in 2003 to devote at least 10% of national budgets to agriculture in an effort to raise agricultural growth to 6% a year.

The recent food price spike has lent these initiatives greater impulse. Indeed, wealthy countries that lack arable land have started to acquire land in Africa to produce food for their countries, prompting fears that food will be exported from countries beset by widespread hunger.

SUPPORTING AGRICULTURE

The question for policy-makers is, then, how best to support farmers to raise productivity and production. Key elements include setting favourable overall conditions for the economy; provision of public goods for agriculture; and, remedying market failures. These three building blocks of support for agricultural development act in concert: unless all three are attended to, then growth will be difficult to achieve.

Taking these in turn, ***economic stability and a favourable investment climate*** are conditions that apply across the economy in general: without these, private investment and innovation will be deterred.

States also need to invest in ***public goods.*** During the 1980s and 1990s both government and donors invested too little in agriculture in Africa, and neglected programmes and policies to promote the sector. The increased public investment agreed in Maputo in 2003 needs to provide public goods that the market will not: physical infrastructure such as roads, power lines, and sometimes also irrigation and drainage; knowledge resulting from research and extension; and rural schooling, health care and clean drinking water to raise the capabilities of rural people.

So far, so good. There is a broad consensus on these measures, as captured by the African Union's Comprehensive Africa Agriculture Development Programme (CAADP). Matters become more complicated when confronting ***'market failures'***.

Markets can fail, especially in rural areas of developing countries. The liberalisation of African economies in the 1980s and 1990s has made clear just how prevalent and costly market failures can be, especially in low income countries (see, for example, Poulton et al. 2004). Some of the main ways markets fail include high transaction costs where lack of information on the character and competence of other persons means that deals cannot be struck: such costs plague formal financial systems in rural areas, making it all but impossible for small farmers to get bank credit; they also impede the provision of formal insurance. Markets also do not capture externalities: costs or benefits to the wider community resulting from one person's actions. For example, innovators in farming and supply chains often generate information on opportunities useful to other parties, but are not rewarded for this, making them less likely to take the risk in the first place.

Market failures like these have slowed agricultural investment and growth and left many farmers and their households living in poverty. In particular, farmers have found it difficult to get credit or to buy inputs such as fertiliser. Similarly, insurance against risks of bad weather or low prices usually is absent, deterring farmers from taking loans that they may not be able to repay. Indeed, some argue that these failures trap many African farmers in poverty: too poor to invest and innovate, too poor to take any risks with the few assets that they have, with little or no access to credit or insurance, they cannot pull themselves up.

Correcting these failures constitutes one of the most challenging tasks facing policy-makers. In some cases states can create or legitimise institutions that solve the problem, as for example with land rights. In other cases, setting rules can help, as with standards, weights and measures. In yet other circumstances, public agencies may be able to assist private parties in creating practical solutions to these problems — for example, by underwriting the risks in contracts.

But is this enough? Or is more vigorous action by government needed to remedy market failures?

When governments have contemplated more direct action, one approach has been to overcome high costs of credit, insurance and inputs in markets — costs that have been pushed up by market failures — by offering subsidies to make these items affordable to poor farmers. In particular several governments in Africa have reintroduced subsidies on fertiliser. Under what conditions may this be justified? The next section sets out the arguments.

Some of the more important controversies in African agricultural development hinge on the extent and severity of market failures, and the degree to which institutions can be fostered that will overcome them. Those who see them as widespread, severe and difficult to correct see many African farmers as trapped in poverty for lack of access to credit, inputs and insurance, unable to escape without external help. For them structural adjustment and economic liberalisation that eschewed such intervention by government was misguided. But other observers see market failures as less problematic, and capable moreover of being resolved by institutional development, and by the initiatives of producer associations and private enterprise in supply chains; without therefore needing substantial public intervention.

SUBSIDIES AS A WAY TO CORRECT MARKET FAILURES

Subsidies potentially counter market failures by allowing for:

- ***Learning,*** where subsidies allow farmers to use an input and appreciate its benefits. Input dealers also get more chance to learn about the character, competence and needs of their potential customers;

- ***Getting more information*** on farmers, their needs, their character and competence that reduces costs and risks for those providing inputs and services; and

- ***Scale economies,*** where subsidies generate sufficient demand for an input so that dealers, warehouses, transport firms, fertiliser factories and seed production are able to operate at sufficient scale to bring down unit costs of input supply.

In addition to countering market failures, there are other reasons why subsidies may be offered to farmers, as follows:

- ***Equity,*** to provide support to farmers who are poor or who live in remote and disadvantaged areas;

- ***Reducing the cost of food.*** When farmers produce more food this tends to reduce its price to the benefit of consumers. This effect is strongest in economies of landlocked countries with high transport costs. This means that the prices of staple foods tend to be a function of domestic production, rather than world markets and subsidies on fertiliser.

- ***Improving soil quality*** and reducing soil degradation.

Moreover, subsidies on inputs have been effective in raising agricultural output. During the early phases of the green revolution in India, studies show returns to subsidies on fertiliser were high, although not later — as might be expected if the subsidies allowed farmers to learn about fertiliser use and to achieve sufficient level of fertiliser trade to lower costs of supply (Dorward et al. 2004). When, in the 1970s and 1980s, public agencies in Africa promoted maize production in countries such as Tanzania, Zambia and Zimbabwe with heavy subsidies on the costs of transporting inputs to farms and shipping produce back, the response from farmers was strong, especially in remote areas. In these cases, increased production helped reduce the real cost of staples on domestic markets.

Currently, several African countries have re-introduced fertiliser subsidies, most notably Malawi.

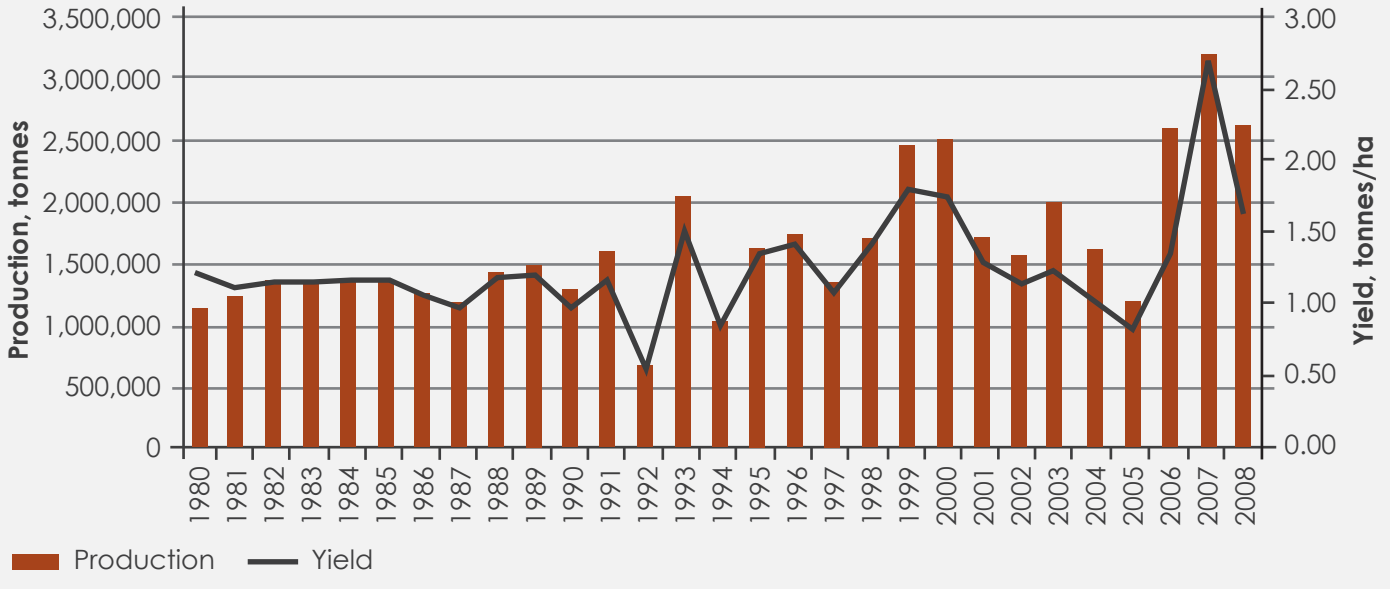
MALAWI'S FERTILISER SUBSIDIES

Building on the experience of earlier experiences of distributing seed and fertiliser, mainly for maize, from 2005/06 the government of Malawi embarked on a national programme of subsidised fertiliser — much to the consternation of some donors. In 2006/07 two million seed and three million fertiliser vouchers were distributed to targeted households. The vouchers allowed recipients to buy two 50 kg bags of fertiliser at what was then 28% of full cost. In total 175,000 tonnes of fertiliser and 4,500 tonnes of improved maize seed were distributed at a cost of US$91million.

Since the introduction of the subsidies maize production has increased remarkably, see Figure 4, and by 2007 was above the amount needed to satisfy domestic consumption. In 2008 and 2009 the maize harvest has again increased, estimated to reach 3.77 million tonnes for 2009, giving a surplus over domestic requirements of 1.32 million tonnes.[5] While some of the production increase in the last four years may be the result of favourable rains, it would be hard to deny the impact of the subsidies.

The programme has its drawbacks. While the private sector was involved in some years, most fertiliser in 2008/09 was distributed through state agencies, bypassing the incipient network of input dealers in rural Malawi. Targeting to poorer farmers has been imperfect. Politically, parties have promised to increase the programme and its benefits as a vote winner, regardless of the economic merits of expansion. The cost of the programme has been rising as well: during 2008/09 it is reported that the cost had risen to more than US$200 million, partly owing to its expansion and partly to the rise in fertiliser prices that lead to an increase in the unit value of the subsidy (FAC 2008, 2009).

Figure 4: Malawi: maize production, 1980 to 2007



Source: FAOSTAT data, downloaded July 2010

But on the other hand there are serious concerns about offering public subsidies. One is that of cost. Not only may costs initially be high, but they are likely to rise as the subsidy overcomes the reluctance of farmers to use inputs, so they use more with a corresponding higher cost in subsidies.

There can, moreover, be political pressure to fix the price of the input, so that if the underlying cost of the input increases with inflation, then the subsidy as a share of the full costs rises as well. Box C presents evidence from India where subsidies in India on rural electricity, irrigation water and fertiliser have risen to represent 15% or more of all public spending, more than the country spends on education.

A second concern is that subsidies sometimes benefit farmers who do not need them, who would have bought the input in any case and who are usually the better-off. Targeting subsidies to those farmers who really need them may reduce this, but in practice may be difficult.

Third, a subsidy programme may encourage government agencies to become involved in the distribution of inputs: weak capacity in some cases then may mean costly and inefficient delivery — farm inputs often need to be delivered promptly when needed as dictated by the rains; and there is the danger that political leaders influence the distribution of the subsidy towards their supporters. If state agencies do take over distribution, then development of private sectors dealers is impeded.

Fourth, once in place, subsidies can be difficult to remove. Farm lobbies focus on subsidies as evidence of public support and resist moves to cut them. Long after farmers have learned the value of inputs, after supply chains have achieved economies of scale, the subsidies persist: the Indian case shows how difficult it can be to end or even reduce such spending.

Fifth, leakages can occur when subsidised inputs are moved across borders to neighbouring countries where inputs cost more.

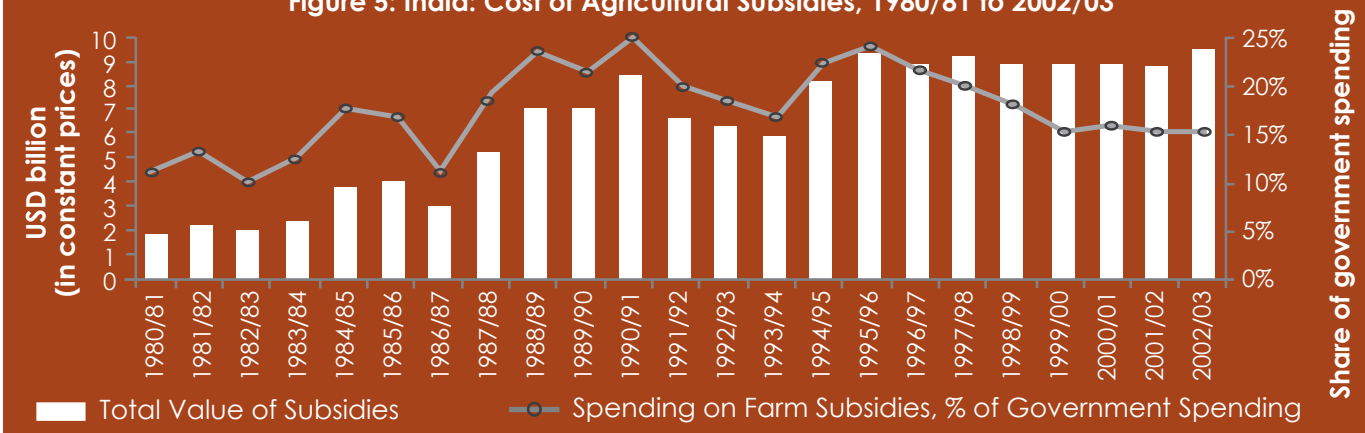
Finally, there are alternatives to subsidies to remedy market failures, through developing rural financial systems and logistical improvements that lower distribution costs of inputs. The experiences from Kenya and Ghana are illustrated below.

BOX C: ESCALATING COSTS OF AGRICULTURAL SUBSIDIES IN INDIA

India originally introduced subsidies in the 1960s to support the successful drive for the green revolution, with major spending to keep down the costs of rural electricity — that drove many of the irrigation pumps, irrigation water, and fertiliser. In addition India nationalised the main banks and directed them to provide credit to farmers. It also promised to buy up any unsold grains at guaranteed prices.

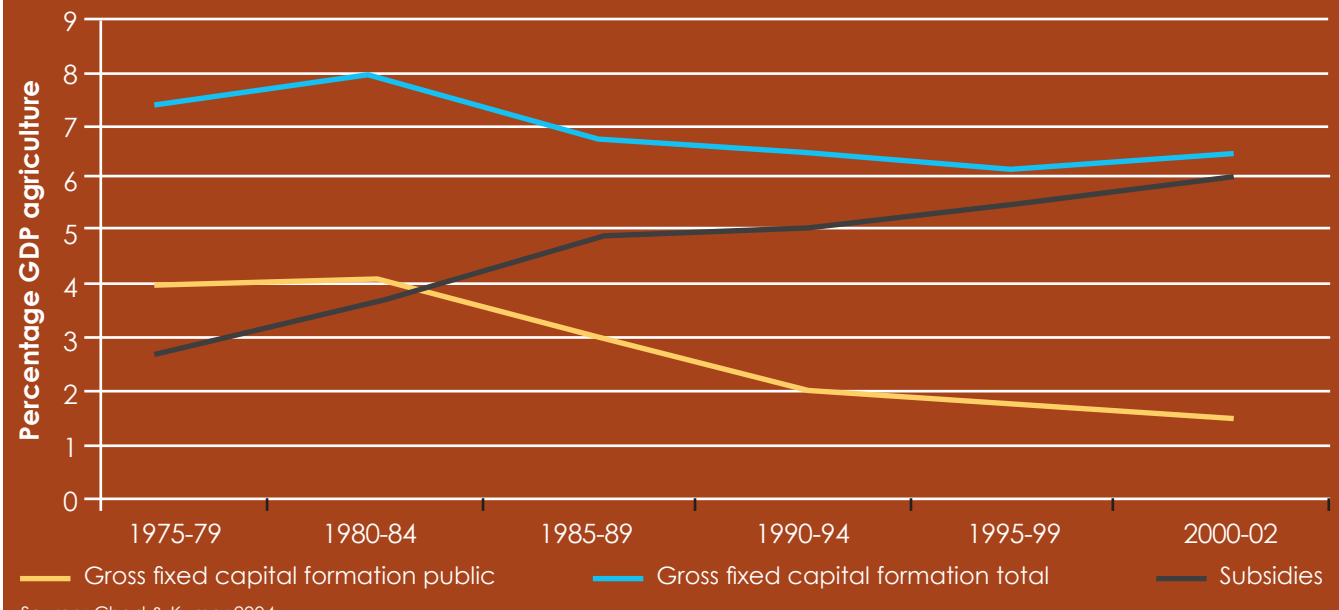
While studies confirm that the early payment of subsidies on inputs contributed to rapid expansion of production of cereals, subsequently it is less clear that the subsidies encourage production. Indeed, since the early 1980s the costs of the subsidies have increased notably — see Figure 5 —, rising to between 15% and 25% of the government budget, more than is spent on education — in a country where adult literacy is only 61%.

Figure 5: India: Cost of Agricultural Subsidies, 1980/81 to 2002/03



Since the mid-1990s agricultural production in India increases have slowed, apparently for lack of investment in physical infrastructure, research and extension services. The fear is that the cost of the subsidies has crowded out other public investments, as Figure 6 would indicate.

Figure 6: India, spending on subsidies compared to public goods



Source: Chad & Kumar 2004

KENYA'S LIBERALISATION OF FERTILISER MARKETS

Fertiliser supply was liberalised in the early 1990s, eliminating retail price controls, import licensing quotas, and foreign exchange controls at the same time as donor fertiliser deliveries were phased out. While some of the fertiliser has been supplied under contract farming for sugar cane, and under schemes that integrate marketing, credit and inputs for tea and cotton, much of the fertiliser has been supplied in cash deals through private input dealers.

The network of dealers has expanded, to reach 500 wholesalers and 7,000 retailers, so that the average distance from farm to dealer fell from more than 8 km to just over 4 km between 1997 and 2004. This has been stimulated by a Rockefeller Foundation programme to assist agricultural input dealers. Improvements in logistics mean that the real cost of moving fertiliser from Mombasa to farms up country was cut by around 40% in the 1990s.

As a result, use of fertiliser has increased: in 1995/96 43% of smallholders used fertiliser, while by 2006/07 this was 70%. The amount of fertiliser applied per hectare has risen, reaching 190 kg/ha on maize, a level comparable with other parts of the developing world and well above typical levels seen in other parts of Africa. Maize yields on small farms are also up, from an average of 1.48 tonnes/ha in 1997 to 2.1 tonnes/ha in 2007 (Ariga & Jayne 2009).[6]

Kenya has benefited from conditions that are unusual compared to some of its neighbours: the long experience of using fertiliser, the release of fertiliser-responsive varieties of maize, and the availability of capital in rural areas from cash crops and remittances from urban areas.

Not all is well: the smallest farms and poor farmers find it hard to buy fertiliser for lack of credit. In response the government announced in 2007 a programme to subsidise fertiliser and maize seed sufficient for one acre, aiming to reach 2.5 million small farmers.

ABRABOPA, GHANA: SUPPLYING COCOA FARMS

A different approach to the problem of farmers lacking credit to obtain inputs has been taken in Ghana. The Cocoa Abrabopa Association provides a package of inputs — fertiliser, insecticide, and fungicide — to groups of between five and fifteen farmers on seasonal credit, to be applied in April and May with repayment by mid-December, well after the cocoa harvest has begun.

An early review of the scheme in 2008 showed farmers repaying their loans, while raising their productivity by 43%. There were also secondary effects as farmers required more labour to apply the inputs and so employed more day labourers.

When schemes like this work, much is down to social and cultural factors that determine whether or not those getting the inputs respect the contract to repay. (CSAE 2009)

WHAT THEN TO DO? THE IMPORTANCE OF CIRCUMSTANCES

These reasons for and against subsidies apply with varying force in different circumstances. What works for one country may not in another.

Above all, the balance of the argument turns on the following key issues:

- The extent and severity of market failures and the feasibility of alternative ways of overcoming them;
- The administrative costs and political risks that apply; and,
- The potential gains from increased production, above all in lowering food prices.

So, under what circumstances might it make sense for an African country to subsidise inputs? All or most of the following circumstances should apply. Note, however, that potentially there are alternatives — which may or may not apply in different cases.

SUBSIDISE FARM INPUTS WHEN:	POLICY ALTERNATIVES
(a) There are high returns to the use of inputs — this applies to fertiliser on maize and rice, less clearly so for other crops.	But if returns are high, then farmers may be able to fund the inputs. If credit or risk is the problem, consider developing financial and insurance packages.
(b) Farmers are poor, cannot get access to credit, and cannot afford to bear risk.	If poverty is the problem, consider social protection — cash transfers may be appropriate, and again look to develop financial and insurance systems. However these may be inappropriate for farmers with no cash income, who cannot pay any premium or who are scattered across vast areas.
(c) Inputs are needed in areas that are distant from ocean ports and the farm-gate cost of fertiliser is thus very high.	Invest in improved transport infrastructure to lower costs of access.
(d) Private input supply operates below the level at which economies of scale apply.	Develop dealer networks through training and underwriting of investments in inventory — as done by Rockefeller, CARE, etc.
(e) Agriculture is the basis of the economy, food security concerns rank high, and agriculture needs to be boosted to release land from staples for higher-value crops.	Invest in agricultural research to generate more productive technologies for food staples Complement this with investments in rural roads, schools, water and primary health care.

If subsidies are to be used, then ideally they should be 'smart', that is:

- Targeted to those that need them — for example, poor farmers, remote areas;
- Work with the market to help develop commercially viable supply chains — for example, by giving targeted farmers vouchers that they can redeem from input dealers; and,
- Limited in time, until the market failures that justified the subsidy have been overcome.

Putting a time limit to subsidies is perhaps the most demanding condition. Setting subsidies within wider agricultural strategy makes it easier to withdraw subsidies subsequently. For example, public investments in transport and in programmes to train dealers and underwrite the establishment of networks of input suppliers, can help reduce the real cost of fertiliser at farm level. As the cost of getting inputs to farmers falls, then the subsidy can be removed, with improved efficiency of distribution cushioning the loss of the subsidy. This might be done in stages, with progressively stricter targeting limited to very poor farmers or remote areas.

Above all, decision-makers need to consider the country context, the aims of subsidies, and alternative ways to meeting those aims. They need also to be aware of the potential dangers.

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NOTES

[1] In North Africa, the numbers living in deep poverty are fewer, but they are also overwhelmingly living in rural areas.
[2] In 2006 Africa produced and imported cereals, roots and tubers with a combined calorific value equivalent to more than 2,500 kcal per person a day: comfortably more than the 1,720 to 2,030 kcal/person/day considered the minimum to satisfy energy requirements in developing countries [FAO 2002/04 preliminary]. Food itself is not lacking.
[3] FAO estimate that the agricultural population of Africa was 505M out of a total population of 987M in 2008.
[4] Liberalisation has also brought problems, above all in market failures that are described later in this paper.
[5] FEWSNET reports of MoAFS estimates published 23 June 09.
[6] These yields may not seem so high, but much of the maize on small farms in Kenya is intercropped with other plants, such as vegetables. Hence these yields measure only part of the production of many fields.

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The Africa Progress Panel (APP) was formed as a vehicle to maintain a focus on the commitments to Africa made by the international community in the wake of the Gleneagles G8 Summit and of the Commission for Africa Report in 2007.

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