

**Effective policy and public expenditure reform for  
pro-poor agricultural development**

**Working Paper for the  
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# Effective policy and public expenditure reform for pro-poor agricultural development

## Executive Summary

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### 1. What is the issue and why is it important?

In most developing countries agriculture and poverty are closely interlinked<sup>1</sup>. As a result, changes in public policy and expenditure to agriculture can make a significant contribution to achieving poverty reduction and broader Millennium Development Goals. This requires a set of public actions and investments to foster broad-based growth in agriculture and other forms of rural enterprise. This paper reviews recent policy and expenditure reforms in agriculture, what has driven these reforms, and the main areas of debate that are likely to shape future reforms.

A number of factors determine the public agenda in agriculture. These include the global context (international trade, regulatory standards), shifting ideological positions (state versus market-driven development), and national strategic priorities. At the national level, policy choices and the prioritisation and management of public funds to agriculture are determined by the following main elements:

- An overall strategic framework for agriculture that sets out the role of agriculture in achieving national goals (growth, poverty reduction, environmental sustainability);
- A clear role for government in the sector relative to that of other players, most notably the private sector and NGOs, but also between central and local government; and,
- The allocation and management of public funds to agriculture that is: (i) affordable and consistent with the resources available; (ii) in line with sector and national priorities, and (iii) ensures value for money.

Agriculture is also dependent upon non-agricultural policy and expenditure decisions that are beyond the control of ministries of agriculture - for example, spending on rural infrastructure (roads, irrigation), land reform policy, education and health services.

Over the last thirty years, the policy agenda in agriculture has been dominated by a shift away from state-led development - involving pervasive state intervention in agricultural production and marketing - towards the adoption of market-led approaches. This change has been driven by a number of factors; most notably, by an ideological shift towards economic efficiency and market-based solutions for resource allocation, combined with budget constraints and perceptions of greater benefits from spending to the social sectors. This perspective is supported by the poor performance of previous public spending in agriculture.

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<sup>1</sup> See paper on "Agriculture, growth and poverty – understanding the links in a changing context of agriculture and rural development", Paper 1 in this series.

While experience of these reforms has differed across countries, the overall picture is not encouraging. Few reforms have delivered the results hoped for, in terms of either agricultural growth or rural poverty reduction. Meanwhile, public expenditure allocations to agriculture are static or declining. This problem is acute in sub-Saharan Africa, where many countries face sharp budget constraints and where the impact of previous spending to the sector is especially poor. Meanwhile, in the more rapidly growing economies of Asia (for example India and China), poverty is increasingly becoming concentrated in remote rural areas as agriculture lags behind the fastest growing sectors and geographical areas of the economy (OPM, 2003).

The declining trend in public spending to agriculture has occurred despite evidence that spending on certain public goods (rural infrastructure, research) contributes strongly to agricultural growth and poverty reduction. This raises serious questions for governments and donors about how future agriculture policy and expenditure reform should proceed.

## 2. Overview of agriculture policy and expenditure reforms

### Government intervention in agricultural markets

During the 1970's and early 1980's many developing countries followed agricultural strategies that emphasised heavy state involvement in agricultural production and marketing. Agriculture was dependent upon government-owned enterprises (parastatals), which often monopolised markets for agricultural inputs, outputs, services and trade. Many of these enterprises, originally established under colonial rule, were retained post-independence by governments wishing to ensure that agriculture, typically the most significant contributor to GDP, performed well. At the same time, ministries of agriculture, starting from very limited capacity, quickly expanded their range of agencies and programmes, many of which included input and output marketing activities.

It is now widely accepted that this policy of state-led agricultural development was costly and misdirected. It failed to deliver agricultural growth and food security, and impoverished large proportions of the rural population (Dorward, Kydd *et al*, 2002). These failings, combined with an urgent need to reduce budget deficits, prompted widespread reappraisal of the role of the state in agriculture during the 1980s and 1990's.

This process resulted in the following broad policy reforms:

- Privatisation of agricultural marketing organisations (and associated de-linking of credit, input and output arrangements through parastatals).
- The reduction or elimination of farm subsidies.
- An increasing focus of state support towards correcting for instances of market failure (especially the provision of public goods such as agricultural research and rural infrastructure).

In many countries, these reforms were implemented as part of a wider package of macro-economic adjustment. Typically this included exchange rate devaluation, which improved price incentives for farmers, but rarely succeeded in generating a sufficiently strong supply response in agriculture to enable well-functioning markets to emerge.

Policy reforms delivered positive impacts in a number of areas - for example in the supply chain systems for some cash crops in Africa, and in reduced food prices to poor rural and urban consumers (Jayne and Jones, 1997). Overall however, the reform experience has been disappointing. This is especially true in sub-Saharan Africa where most countries experienced a contraction in per capita agricultural GDP and agricultural value-added throughout the reform period of the 1980s and 1990s (Kherallah, Delgado *et al*. 2000).

While the policy reform experience has differed between countries, a number of common themes emerge:

- Reforms have often been partial, and sometimes reversed, creating policy uncertainty and undermining the impetus for reform. Lack of government commitment to full market liberalisation, fear of disturbing existing patron-client relationships (corruption), and concern over losing important sources of public revenue are some of the factors that hindered reform programs.

- In many countries, food availability has a strong political element. The association between food markets and the legitimacy of government reduces incentives for governments to implement food markets reforms, including the liberalisation of food trade across borders (Zimbabwe).
- In some sub-sectors reforms have not encouraged the level of private investment hoped for. This is particularly the case for the grain sub-sector, where traders face high levels of risk and transactions costs (difficulties of contract enforcement, transport costs etc).
- Export crop production has responded more positively than food crop production. This is due to the shift of relative agricultural prices in favour of tradable goods, and the greater profitability in using imported inputs on export crops rather than on food crops.
- The use of inputs, especially fertilizer has declined. Fertilizer use in sub-Saharan Africa remains strikingly low - on average, 9kg of nutrient are used per hectare of arable land, compared with 107kg for all developing countries (Kherallah and Delgado, 2000).
- Access to agricultural extension and credit for inputs has also declined. Where state-sponsored credit systems have collapsed, farmers have found it harder to get access to credit. The private sector has not been able to provide credit to farmers because of its inability to enforce loan payments. Access to extension services has declined because governments have cut spending to the sector.
- Reforms have increased competition between traders and reduced marketing margins, enabling farmers to secure a greater share of the market prices. However, the overall impact on poor farmers is mixed. Farm households in remote areas are worst affected, with many significantly worse off than before the reforms.

### **Agricultural services**

Reappraisal of the role of the state in agriculture has had policy implications for the way in which agricultural services - most notably research and extension - are funded and delivered. In some countries this has resulted in a radical shift away from the standard model of agricultural services that are designed, financed and delivered through a central government ministry or agency.

Reform of agricultural service delivery has been driven by three main questions (OPM, 1998):

- *Who should pay for the service?* Determined through analysis of market failures (see box). For example, in the case of a purely private good, private financing is appropriate. At the other extreme of a pure public good, financing would need to come from government. For many services a mixture of public and private financing will be appropriate.
- *Who should deliver a service?* Informed by criteria of cost-effectiveness and efficiency - for example, the public sector may continue to provide the service, or delivery may be contracted out to the private sector or NGOs. The best arrangement for service delivery (even for public goods) depends on the trade-off between potential efficiency gains of private delivery (arising from improved management) on the one hand, and the transactions costs of monitoring and regulating on the other.

- *How the service should be delivered?* Here a range of alternative approaches can be considered. For example, more participatory approaches to research and extension are widely held to result in more accountable, relevant, and cost effective services. In practice, the delivery of many services will require co-operation between the public sector, the private sector and civil society. The delivery of a public good might for example be contracted to the private sector, with the public sector retaining responsibility for monitoring and enforcing standards.

In practice, this analysis implies that the state should withdraw from financing *agricultural research* with high private good characteristics (where the benefits can easily be retained by the user). This includes much applied and adaptive research of a chemical or mechanical nature, and of hybrid seed varieties and animal breeding. The focus of public research should be on more basic and strategic research, on applied research into open-pollinated seed varieties and research of an agronomic nature, on products or technologies where a high proportion of the benefits go to consumers (particularly non-tradable products with inelastic demand, such as staple foods), and on health, safety and environmental issues unlikely to interest the commercial sector. There is also an argument for public research on agricultural products produced by farmers in remote areas, where producers are not well organised, or where the transactions costs of undertaking research privately are high.

In relation to *agricultural extension*, the state should withdraw from financing specialised extension advice, particularly to more commercially oriented producers. This might best be achieved by the progressive introduction of user charges for extension visits. The state should focus on the financing of more general extension advice, mass media forms of broadcasting, and extension aimed at environmental concerns and health and safety issues.

Within this framework, the pace of policy reform in agricultural service delivery has differed markedly between countries, depending upon the strength and extent of political commitment to the reforms. Some countries, for example Chile, have led innovative approaches to rural service delivery, while in other countries, especially those in sub-Saharan Africa, the pace of reform has been slow and sometimes reversed.

The experience from Chile is instructive about the problems of relying on markets for the provision of services. Since 1978 the government has experimented with the contracting out of agricultural extension delivery to the private sector and the introduction of user-charges. The current system involves a graduated scale of charges, with the smallest farmers receiving extension free, while larger commercial producers are fully responsible for sourcing and paying for their own extension advice. The results are mixed. There is some evidence of increased efficiency in service delivery and there appears to have been a positive impact on productivity. However, services are not driven by smallholder needs, and it is not clear that productivity benefits are necessarily due to the sub-contracted way in which extension is delivered. The experience also shows that the benefits of extension services are insufficient for small-scale farmers to be willing to cover the cost of their provision. To the extent that the system has been successful, there have been specifically Chilean factors that have led to this, suggesting that the model cannot be simply transferred to other countries.

More generally, experience of policy reform for rural service delivery highlights a number of issues:

- Farmers are often unwilling to pay for services, even for services that are effective in raising productivity. Hence, if service delivery is left entirely to the market, little of it will be supplied.
- Providing funds to farmers to enable them directly to pay for services (for example through vouchers) can lead to abuse and does not necessarily result in a more efficient allocation of resources.
- The conditions for successful private sector service delivery need to be created if they do not already exist. Such preconditions include *inter alia*: the liberalisation of input and output markets; a macroeconomic and sector policy framework conducive to private sector activity; intellectual property rights and mechanisms for their enforcement; and, investment in human capital.
- Responsibility for rural service delivery is increasingly influenced by the extent of political and administrative decentralisation. This implies a gradual rather than a rapid shift towards implementation of new approaches, and the adoption of differing approaches between agencies based on capacity, for example, through piloting new approaches at local levels, or by focusing first on public / private financing while capacity for delivery is built and assessed.

### Food security

Since the 1996 World Food Summit (WFS), food security has become an important objective for many developing countries and is often reflected in national agricultural policies. The WFS defined food security as a situation when "*..all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.*"

In addressing food security, it is important to understand two points. First, there is a close relationship between food security and poverty - poor households often lack the means to purchase or produce sufficient food themselves, and are therefore more prone to food insecurity. Second, while food availability is a necessary condition for food security, it is not a sufficient condition - producing sufficient food at an aggregate level, does not address the problem of access to food at the individual level.

In relation to the linkages between agricultural policy and food security a number of points can be made:

- In a broad overview of food insecurity in 58 developing countries, little correlation was found between national food availability and food security. It was concluded that '*the group of countries that exhibit the highest severity of food insecurity are those with high poverty and food surpluses,*' consistent with the view that poverty is the most widespread cause of food insecurity (Smith, Obeid, and Jensen 2000).
- The manner in which food availability is increased is as important as whether food availability is increased. Policies that increase national food production can be effective in improving food access provided that they promote broad based growth of rural household incomes (both farm and non-farm) and reduce food prices (for net buyers). (Diskin, 1995).
- Reform of agricultural markets may provide opportunities for improving food security for low-income consumers. Research in southern Africa suggests food access can be improved through promoting the performance of private production, distribution and processing systems featuring the types of foods that the poorest families consume. (Jayne et al, 1999).

- Food security concerns are especially acute in sub-Saharan Africa. Here a 'green revolution' is needed similar to that experienced Asia during the 1960's, in order to raise food productivity, create employment and lower food prices. This requires continued investment and support for the agriculture sector and sustainable development in less favourable and marginal agricultural areas. There is also a need to re-examine the role of non-cereal food crops and livestock in food security. (Devereux and Maxwell, 2001).
- Improvements in household incomes do not always translate into increases in the quantity and quality of food consumed by undernourished members of the household. Sources of income that give relatively more control to women, as opposed to men, have greater impact on household food consumption and nutrition, especially for children. (Kennedy and Peters, 1992).
- Genetically modified crops offer both opportunities and policy challenges. One issue of particular concern to food security is that of intellectual property rights (enforced through 'terminator genes') and the possibility that in the future poor farmers may be forced to buy all their seeds from large multinational companies.

### **The non-farm sector – a co-ordinating role for government**

For many developing countries, poverty is predominantly rural and linked closely to agriculture. However, reforms directed at agriculture must not be seen as a solution on their own; they will only generate significant poverty reduction gains if complemented by reforms that stimulate growth in the non-agricultural sector.

There is evidence that increased income generated from the non-agricultural economy creates additional markets for agricultural goods. Without growth in the non-farm sector, livelihood gains from improved agricultural productivity and incomes are limited. Hence, efforts to raise agricultural productivity need to be complemented with policies that reduce marketing costs and promote non-agricultural growth. Investments in rural infrastructure and market development are especially important in this regard, and potentially have a greater growth impact than investment in agriculture alone (Diao, Dorosh et al, 2003).

Strategies for agricultural development also depend upon close co-ordination between the ministry of agriculture and the various other government agencies involved in the sector (for example, ministries of land, labour, trade), as well as between government and the private sector. This is reflected in some countries by an increased emphasis upon a co-ordinating role for government and a more comprehensive approach to cross-sectoral issues (Tanzania, Uganda).

### **Participatory policy processes**

Participation enables stakeholders to exert greater influence and control over priority setting, policy making, resources allocation and access to public goods and services.

While the extent of stakeholder participation varies between countries, and is difficult accurately to measure, it is possible to discern a widespread international trend towards more of it. Greater openness is also evident in the instruments used in policy analysis. While quantitative approaches and better data are essential to policy analysis, participatory approaches are also widely used to empower local

communities and enhance the relevance of services, and hence prospects for their sustainability.

Contributors to a recent E-forum on agriculture (DFID 2004) highlighted a number of approaches that have proved effective in widening participation by the poor in agricultural policy. These include 'citizen juries' in India and Brazil, which have enabled poor farmers to actively participate in debating policy issues and shaping sector interventions by local and state governments. Other forms of participation that have been successful include participatory video diaries and participatory assessments. Experience from India also shows that participatory budget analysis can be an effective tool in improving governance, and in holding governments more accountable for their actions.

Rural producer groups often form the basis of a participatory system of agricultural policy making. Experience shows however that they face a difficult transition from being passive recipients of government assistance, to being independent organisations capable of developing their own priorities and strategies, and negotiating with government. There is also a danger that such groups represent the interests of a small but powerful group, at the expense of other groups.

Participation needs to be carefully structured. For example, asking farmers whether they want higher levels of subsidies or free services may unhelpfully raise expectations where wider economic management considerations mean that these will not be forthcoming. If, however, farmers become more fully aware of wider constraints, the outcome of consultation may be more meaningful (Duncan 1999).

### **Public expenditure trends**

There have been many studies of the relationship between government expenditure and economic growth. Some of these have looked specifically at the link between government spending and agricultural growth and poverty reduction (Elias 1985; Fan, Hazell, and Thorat 2000; Fan, Zhang, and Zhang 2000; and Fan and Pardey 1998). These studies show positive growth and poverty reduction effects from public spending in agriculture. Yet, in the majority of developing countries aid and public expenditure to agriculture is stagnant or declining.

The situation is especially severe in sub-Saharan Africa, where there has been rapid withdrawal of state support to the sector, and a perception that past public spending on agriculture has had little impact (Jones and Stockbridge, 2002). For example, World Bank lending for agriculture and rural development declined by around one-half over a decade, from under \$6bn annually in 1986 to under \$3bn in 1996 (at 1996 constant prices)<sup>2</sup>.

Compared to developed countries, agricultural spending as a percentage of agricultural GDP is low in developing countries. In developed countries public spending to agriculture is typically around 20 percent of agricultural GDP. For developing countries the figure is less than 10 percent.

A recent study of public expenditure in 43 developing countries shows average spending to agriculture falling from 9.8 percent of agricultural GDP in 1980, to 7.9 percent of agricultural GDP in 1998 (Fan and Rao, 2003) - see Table 1. The Africa

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<sup>2</sup> Source: Rural Development: From Vision to Action, World Bank 1997 (p.32).

and Latin America regions experienced a fall in spending to agriculture between 1980 and 1990 (the fall was especially sharp in Latin America), with some recovery of spending by 1998. Asia has experienced a more gradual but steady decline in spending in agriculture, falling from 9.6 percent of agricultural GDP in 1980 to 8.2 percent in 1998.

There are significant variations between countries in the relative levels of public spending allocated to agriculture. This is most noticeable in Africa, where spending in 1998 ranged from 45 percent of agricultural GDP in Botswana, to just 0.23 percent in Uganda and 0.19 percent in Mali.

### Tables : Public expenditure trends in agriculture

#### 1. Agriculture expenditure as a share of Ag. GDP (%)

	1980	1990	1998
Total 43 developing Countries	9.82	7.95	7.93
Africa	7.51	5.65	6.00
Asia	9.58	8.62	8.18
Latin America	12.67	4.81	7.22

#### 2. Share of total government expenditure

	Africa		Asia		L. America	
	1990	1998	1990	1998	1990	1998
Agriculture	6	5	15	10	8	3
Education	12	16	14	20	16	19
Health	3	5	5	4	4	7

#### 3. Research spending as a share of Ag GDP (%)

	1976	1985	1995
Developing countries	0.44	0.53	0.62
- sub-Saharan Africa	0.91	0.95	0.85
- China	0.41	0.42	0.43
- Other Asia	0.31	0.44	0.63
- Latin America	0.55	0.72	0.98
Developed countries	1.53	2.13	2.64

Sources: 1 & 2 Fan and Rao (2003); 3. Pardey and Beintema (2001)

The study also looked at spending to agriculture as a proportion of total government expenditures (Table 2). For all countries in the study, the share of public spending allocated to agriculture declined from 12 percent in 1980 to 9 percent in 1998 (not shown in table). For Africa, agriculture's share of total government spending suffered a modest decline, falling from 6 percent to 5 percent of spending between 1980 and 1998. This suggests that macroeconomic adjustment has had little impact on agricultural spending. In Asia, the share declined from 15 percent to 10 percent over the same period. Latin America experienced the most rapid decline, with spending to agriculture falling from 8 percent to 3 percent of total government expenditures over the period.

Pardey and Beintema (2001) show that spending by developing countries on agricultural research as a percentage of agricultural GDP increased from 0.44 percent in 1976 to 0.62 percent in 1995 (but remains low compared to developed

countries) – Table 3. However, sub-Saharan Africa has lost considerable ground with research intensities now lower than they were in the 1970's.

The decline in relative allocations to agriculture is in stark contrast to health and education, which (with the exception of health in Asia) experienced strong growth in all regions. It is important to note however, that the quality of spending to agriculture is more important than the overall level of spending; a fact often neglected by prescriptive approaches to spending - for example NEPAD<sup>3</sup>, which encourages African countries to allocate 10 percent of their budgets to agriculture.

But what has been the impact of public spending to agriculture? The analysis by Fan and Rao (2003) suggests that public spending to agriculture has a significant positive impact on agricultural GDP, with investments in rural infrastructure (primarily irrigation and roads) and agricultural research contributing most strongly to this growth. This is supported by other studies that suggest investment in productivity-enhancing agricultural research has a larger output-promoting effect than other forms of public spending to agriculture (including subsidies).

Fan and Rao show that overall the impact of government spending in different sectors is mixed. However, in Africa, government spending on agriculture and health has been particularly strong in promoting economic growth. In Asia, investment in agriculture has also had strong growth effects (together with education and defence). The study also found growth in agricultural production to be the most crucial element in addressing poverty in rural areas.

Several lessons can be drawn from these studies:

- Sector spending has differential impacts on economic growth, implying that there is potential to improve efficiency of government spending by reallocation among sectors.
- Governments should consider increasing spending in agriculture, particularly on production-enhancing investments such as agricultural research and rural infrastructure. This type of spending not only yields high returns to agricultural production, but also has a large impact on poverty reduction since most of the poor still reside in rural areas and their main source of livelihood is agriculture.
- The estimated returns to agricultural research are as high now as they ever were, and high enough to justify greater investment of public funds.
- For agricultural research, increased funding alone is not the answer - developing effective public-private partnerships and making more efficient and effective use of research funds present major challenges.

Despite potential positive returns to public spending in agriculture, few policy makers currently consider investment in agricultural development the best bet for poverty reduction. There are a number of reasons for this (Dorward and Kydd, 2001):

- Recognition that achieving agricultural growth in remote and marginal rural areas - where much of the rural poor are now concentrated – is more difficult.

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<sup>3</sup> New Partnership for Africa's Development (NEPAD) is a strategic framework to develop an integrated socio-economic development framework for Africa. The 37th Summit of the Organisation of African Unity formally adopted the strategic framework document in July 2001.

- The perception that many of agriculture's problems are seen as lying outside the agricultural sector – for example, in roads and telecommunications infrastructure, in health and education.
- Uncertainty regarding how best to invest in agriculture. Much of the investments called for tend to focus on research and extension, but policy makers have doubts about their effectiveness, are concerned about recurrent costs and fiscal commitments, and are experimenting with private/public models for finance and delivery.
- Increasing recognition of the importance of non-farm incomes and activities to the livelihoods of the rural poor.

This leads to what Kydd and Dorward term the 'agricultural investment dilemma': even where the importance of agriculture is recognised it is difficult for donors and governments to design and gain approval for specific agricultural investment programmes.

### **Expenditure management**

Public expenditure management (PEM) is about allocating funds to policy priorities in a way that is both effective and efficient. It is especially important for agriculture, where the limited impact of public spending is due as much to the poor management of resources as to inadequate financing levels. PEM is therefore an issue that ministries of agriculture should seek to address if they wish to strengthen their future claim on public resources.

Poor recording of expenditures and their impact makes it difficult accurately to assess the scale, relevance, efficiency and impact of developing country spending to agriculture. In many countries, significant off-budget spending (typically by donors) frustrates efforts to determine the overall level and relevance of public spending to agriculture. Meanwhile, a lack of data on costs and quality of services provided makes it difficult to obtain reliable information on spending efficiency.

In response, a number of diagnostic tools have been developed in order to provide greater transparency to public financial reporting and to assist policy makers determine appropriate sectoral budget allocations. These tools include Public Expenditure Reviews (PERs), Country Financial Accountability Assessments (CFAAs) and Public Expenditure Tracking Surveys (PETS).

The application of these tools highlights a number of common problems for PEM in agriculture:

- Many ministries of agriculture face organisational, management and financial constraints that impinge upon the efficiency of their operations. This brings into question the wisdom of substantial increases in public funding to agriculture in the absence of improvements in management and efficiency.
- Weak articulation of linkages between strategic objectives, organisational functions, outputs, and the resources available.
- Budget processes that fail to properly scrutinise and prioritise competing activities against sector objectives, and ensuring an appropriate balance between donor and government funding, and between recurrent and capital expenditures.

- The relationship between the recurrent and development budgets is especially problematic – there is a tendency to plan investments without due consideration of the burden they place upon the recurrent budget. The effectiveness of these investments suffers as a result.
- A significant proportion of the agriculture investment portfolio is likely to be inconsistent with the principles and priorities set out in government strategy for the sector. This is due to long-term investment projects that continue to receive funding despite no longer being relevant or considered a priority.
- A more systematic approach to the recording of sector expenditure would greatly assist in ensuring that future expenditure flows to the sector (through successive budget rounds) are more closely matched to sector priorities.
- Procedures need to be strengthened for setting appropriate user-fees for services with a high private-good content, based on the costs of providing individual services, and the needs and ability to pay of different user groups. Charges and costs need to be reviewed on a periodic basis, as does beneficiary impact and the efficiency of service delivery.
- Decentralisation poses particular challenges to effective PEM, especially in relation to determining who has responsibility for budget outputs and outcomes, and the design, management, and accountability of agricultural services.
- Agricultural extension services are often particularly inefficient - salaries are paid to extension staff, but they are not provided with sufficient operational and logistical resources to fulfil their tasks.
- The poor state of rural roads and other rural infrastructure raises the costs of all rural services.

### 3. Main areas of debate

#### How to achieve pro-poor agricultural growth?

Much of the world's poor live in rural areas and many of these poor are farmers. This suggests that growth in agriculture is the best way to end poverty. But how can this growth be achieved?

In the 1960s, the secret to agricultural development was identified as investment in new agricultural technologies and human capital, and getting prices right. Correct price incentives in agricultural markets would generate profitable investments and income streams that would then increase commodity output and lift the rural economy out of poverty. However, the diversity of rural circumstances and the changing global environment have sharply impeded agricultural development and progress in reducing rural poverty. For example, in sub-Saharan Africa, neither the agricultural technology nor the incentive prices in agricultural markets have been reliably available. In Asia, success in linking the non-tradable sector in rural areas to urban markets and labour-intensive export growth has been mixed, with poverty becoming concentrated in remote rural areas where the benefits of wider economic growth are not felt. In Latin America, extreme rural poverty has largely migrated to urban areas, so the poverty problem is now primarily an urban problem (Timmer 2003).

The success of Asia's 'green revolution' in the 1960's has proven difficult to replicate. The first green revolution was based upon productivity enhancing seed and fertiliser technologies, combined with high level of state spending in agriculture and high global demand for cereals. Ensuring pro-poor agricultural growth is now more difficult. Many developing countries have failed to keep pace with the new technologies, their governments cannot afford high levels of public expenditure in agriculture, and world prices for staple cereals are at all-time lows.

What does this mean for future reforms to agriculture policy and expenditure? The mechanisms for both technology development and provision of rural price incentives are no longer as clear as they were in the 1960s. In many circumstances the poor do not have access productivity enhancing technologies. Where they do have access, higher agricultural productivity can lead to lower food prices – to the benefit of poor consumers who spend a large share of their budget on food, but unless increased productivity is matched with higher demand or employment opportunities in the non-farm sector, farmers can end up worse off. So using agricultural technology to solve problems of rural poverty is complicated at best.

Good governance provides an approach for addressing problems of weak agricultural growth. However, the speed and impact of improvements in governance has been less in rural areas due to lower levels of education, lower qualification of civil servants, and more deeply ingrained traditions of paternalism. The effectiveness of public sector institutions in promoting pro-poor agricultural growth is also hampered by the fact that there are often many different ministries or agencies operating within the sector (for example, public works, water resources, trade, and environment) each with a high degree of centralisation (Timmer 2003).

#### *Issues:*

- How can governments act to get agriculture moving? Is traditional thinking on the role of technology and getting 'prices right' still valid?

- Rural people earn their living in increasingly diverse ways and that the demographics of rural poverty are changing (more older people, female-headed households, people subject to conflict or exposed to HIV/AIDS). Meanwhile rural poverty is increasingly concentrated in remote and low potential areas. What does this imply for strategies to promote pro-poor agricultural growth?
- In an era of global markets and open economies, the connections between agricultural growth and reductions in poverty are becoming more complicated. What actions are needed to ensure that reforms are inclusive of the poor and support is targeted to enable the poor to take advantage of new opportunities?
- The nature of rural economies can be diverse, both between countries and geographically within countries (high potential versus low potential areas). How can donor and government support adequately reflect the need for differentiated policies, and roles for state and market across areas?

### **Role of government in agriculture**

The debate continues on the appropriate role for the state in agriculture. Many argue that market liberalisation and an increasing focus by the state upon correcting for instances of market failure have had little positive impact. Confusion also remains over how to define public goods in agriculture and appropriate levels and forms of state intervention to the sector.

The reasons for the limited impact of policy reforms and prescriptions to address it are debated. One view is that failure is not the result of policy reforms *per se*, but of failure to implement the reforms thoroughly (Jayne, Govereh et al., 2001). Partial reforms that allowed parastatals to continue operating, together with policy reversals, have inhibited incentives for private sector investment. It is suggested that the solution is to complete the policy reform process, accompanied by appropriate supporting measures and public investments – for example, in public goods (rural infrastructure, market institutions), agricultural support organisations (research and extension), new approaches for service delivery (contracting out, group approaches), short term targeted support to vulnerable groups in remote areas (safety net transfers); and credible and sustainable macro-economic policies.

An alternative view is that high transactions costs in poor rural areas prevent the private sector from delivering necessary agricultural services. Transactions costs are especially high for financial services (as there is much associated risk), but also hinder the development of input and output markets. This analysis has two important implications. First, a policy of government withdrawal from service provision and the promotion of competitive markets may actually worsen the problems faced by smallholder farmers. Second, rural infrastructure and institutional development are insufficient on their own to attract the level of private sector investment necessary for growth in agriculture. Supporters of this view argue that governments should continue to pursue interventionist policies in order to remedy these market failures - until economic activity and institutional development proceed past a critical point (Dorward, Kydd et al. 2002, and Diao, Dorosh et al, 2003)

This suggests that arguments for state intervention in agriculture are particularly compelling where:

- There are problems associated with weakly integrated markets, where conditions prevent markets from functioning effectively, or where the situation of the poor is such that they simply are unable to participate fully in markets. This is particularly the case in remote rural areas.
- There is no competition between service providers. The absence of competition between suppliers reduces the incentive for the provider to reduce costs and this may offset the advantages of private sector delivery. Here, public intervention in service provision or through regulation (to set conditions of competition, and pricing and quality standards) will be necessary.

For some, the concept of coordination failure suggests a possible role for government action that goes beyond the standard 'market failure' model of the public role in agriculture. A coordination failure can be defined generally as a case where "*...individuals' failure to coordinate complementary changes in their actions leads to a state of affairs for everyone that is worse than some alternative state of affairs that is also an equilibrium*" (Karla Hoff, 2000). In a more restricted but relevant sense for the issues under consideration here, an alternative definition refers to the "*failure of one's own investment due to an absence of complementary investments by other players at different stages in the supply chain*" (Dorward et al.).

In the absence of mechanisms to overcome coordination failure and to supply assurances that complementary investments will occur, private initiatives will be sharply curtailed. Risks of strategic default on debt, or uncertainty about demand, can create a situation in which potentially viable sets of investment do not occur. This situation is pervasive in many rural situations where transactions costs are high and the institutional framework is weak, particularly for investments that are illiquid, long-term, and have few alternative uses (such as processing facilities for particular crops such as sugar) (Jones and Joffe, 2003).

Others take a wider view, suggesting that market failure arguments to justify public interventions in agriculture are used too loosely and uncritically. While the theoretical literature defining market failures is generally not contentious, there is no clear methodology for identifying and quantifying market failures in practice, and for linking this identification to specific policy proposals. Hence, in practice, the market failure approach does not provide sufficiently rigorous criteria for determining the choice of policies or instruments (Van der Meer and Noordam, 2003).

Another perspective on market failure is the extent to which public intervention has exacerbated rather than improved the problem. Even in the post-adjustment era, a continued heavy-handed state presence is still evident in many rural economies, creating an environment in which layers of subsidies may distort and weaken incentives for private investment. Pervasive problems of political and economic instability, lack of transparency, corruption, irrational regulation and bureaucratic load also raise transaction costs and risks to business in developing countries.

*Issues:*

- What conditions or factors are needed for policy reform to take place? How can policy reform take place in failing or fragile states? This relates not only to scenarios of armed conflict and incomplete state control over territory, but also milder forms of state failure such as rent seeking,

corruption, and capture by special-interest groups. If the national state fails, where should the burden of implementation be shifted?

- How can government prevent public funds unnecessarily funding activities that the private sector is able and willing to finance?
- What is the role for government support agriculture, beyond the traditional 'market failure' approach – for example, in addressing co-ordination problems?
- How should government address social and distributional issues - through free or subsidised services to target groups, or are alternative forms of support more effective?

### **What types of public investment achieve agricultural growth?**

Studies show that rural infrastructure and agricultural research provide the greatest returns to public investment in agriculture (but may not be sufficient alone to guarantee pro-poor agricultural growth). Although it is hard to argue that agricultural research has a direct impact on the poor in rural areas, as new technologies are often adopted earliest and most intensively by better-off farmers, the indirect effects of higher agricultural productivity are likely to have a positive impact on the poor.

There is also scepticism that returns to research for more marginal areas can match those of more favoured areas. Others suggest however, that marginal areas may offer greater returns to research investments simply by virtue of being neglected in the past (Lipton, 1988). There may also be significant returns to research on indigenous products in marginal areas the potential of which remains largely unknown and untapped.

Similar arguments can be made for public provision of rural infrastructure. Rural roads assist larger farmers to a greater extent than smaller subsistence-oriented farmers, but the productivity effects spread quickly and rapidly to the poor. The poor may also benefit through labour-intensive public works programmes in the construction of rural infrastructure.

As already noted, Fan and Rao (2003) show that government spending on agriculture has provided a strong contribution to economic growth in Africa and Asia, and that agricultural production is critical for addressing poverty in rural areas. This view is supported by Diao, Dorosh *et al* (2003) who show that spending on rural infrastructure (especially roads) and productivity enhancing investments in agricultural export crops and livestock have the most promise for growth in income and food consumption in Africa. They also support the view that there are high returns to initiatives and investments that reduce transaction costs in agricultural markets. Reduced marketing costs are crucial to reducing consumer food prices, while also raising producer incomes in the longer term. Investments in infrastructure and policy reforms that lead to reductions in transaction costs have the potential to benefit a wide spectrum of agricultural (and non-agricultural) activities, and avoid the problem of requiring the government to 'pick winners' among competing crops or agricultural activities. However, without growth in the non-agricultural sector, overall gains will be limited. Investments in agriculture need to be complemented with policies and investments to spur non-agricultural growth.

Timmer (2003) suggests that once agricultural technology and efficient rural infrastructure are in place as the basis for profitable farming, policy attention and

budget priorities should turn to the rural non-tradables sector. Part of the profitability for this sector will come from a labour-intensive export sector that is successfully linked into the global economy. Rapid growth in this export sector creates demand for labour directly as well as for the goods and services of the rural economy that raise demand for labour indirectly.

There is also an important role for government in providing a supportive policy and institutional framework that creates incentives for private sector investment in agriculture. Areas of action include institutional arrangements that support sustainable investments in infrastructure, land titling, regulatory capacity for rural financial systems, and the strengthening of farmer organisations and the capacity of rural local government. Some of these solutions lie within the rural sector – others depend on more general measures to improve the enabling environment for the private sector and the effectiveness of government expenditure. Where public action is used as a transitional measure to catalyse private sector investment and market development, it needs to create sustainable institutional development so that privately financed solutions may become viable. An example is where the intervention enables a 'coordination failure' to be overcome (Jones and Joffe, 2003).

*Issues:*

- What investments are required to support pro-poor agricultural growth directly and indirectly? (Research, extension, rural transport, energy, and also health and education). How might such investments be designed to reach the poor most effectively and efficiently?
- How can such investments provide maximum leverage to private investment and minimise the risk of crowding out the private sector and distorting market incentives?
- If transitional public funding is used, what should be the criteria for selection of the forms of investment that are supported? How can exit strategies be defined and implemented to ensure that public sector support is indeed transitional?
- If the national public sector lacks the capacity to provide 'transitional' support effectively, how may international development agencies structure their engagement?

### **Agriculture in PRSPS**

The production by countries of a Poverty Reduction Strategy Paper (PRSP) is a key requirement for low income (IDA only) countries. PRSPs provide access to HIPC debt relief and are an important factor in determining levels of bilateral donor support.

Two issues can be highlighted. First, almost all PRSPs propose large increases in social sector spending - in particular, health and education. Norton and Foster (2001) question whether there is an overemphasis on these sectors at the expense of productive sectors, such as infrastructure and agriculture. While emphasis on health and education is relevant to poverty reduction, investment in the productive sectors is also essential, and may have a more substantial and direct impact. Agricultural and rural infrastructure spending appears to be a low priority in the PRSPs for Uganda, Tanzania and Burkina Faso.

Second, while all PRSPs include a chapter on agriculture and the principal constraints facing the sector, few provide a convincing case for government actions

to address these problems. A critical strategic choice that needs to be addressed is whether to concentrate agricultural development activities on high potential areas, where there are greater opportunities for increasing growth and national food supply, or low potential areas, where poverty and food security may be more severe. Most of the PRSPs do not clearly explain government policy in respect of this important trade-off. This is a neglected issue, which requires much greater analysis and strategic discussion (Williams and Duncan, 2001).

Some PRSP indicate a clear strategic orientation towards high potential areas (Ethiopia, Mozambique), others include a dual strategy of increasing productivity in high potential areas, while attempting to tackle structural food insecurity in marginal and low potential areas (Mauritania, Kenya). Such balanced approaches are likely to offer the best prospects for tackling food insecurity.

*Issues:*

- In recent years there has been a marked reluctance for donors to engage with governments on matters of agricultural policy. This may be due to the limited impact of previous donor engagement on agriculture, but does it also reflect a change in donor priorities in favour of the social sector and broad governance issues? How should donors support the treatment of agriculture in PRSPs and other national strategies?

### **Public expenditure management**

While agricultural policy reforms often imply a changed role for government, they do not necessarily reduce the case for public spending on agriculture. However, in order to make a convincing claim for public funds ministries of agriculture need to demonstrate effectiveness and efficiency in what they do. In addition to the policy framework, this requires the strengthening of public expenditure management systems, especially the recording of data on agricultural expenditures and their impact. Assessing the composition, relevance, efficiency and impact of developing country spending to agriculture (and to other sectors) is made difficult by weak public expenditure management and accountability systems. .

*Issues:*

- How can systems of public expenditure management be strengthened to ensure that: (i) the composition of public spending to agriculture is consistent with policy priorities; and (ii) ministries of agriculture are able to make a convincing claim for scarce public resources? What leverage do donors have in strengthening PEM in agriculture?
- What does decentralisation imply for the funding for agricultural services – and the accountability of services?

### **Direct budget support**

In recent years there has been an increasing trend by donors towards direct budget support. This refers to the channelling of donor funds to a recipient government using the government's own allocation, procurement and accounting systems. While some budget support is tied to specific sector, much is in the form of general budget support without any formal limitation on sector allocations. The presumption is that it is government 's responsibility to sector policy and budget priorities.

There is a concern that the shift towards direct budget support results in a diversion of public funds that otherwise would have been allocated to agriculture. It also distances donors from their responsibilities in implementing effective strategies to reduce poverty.

*Issues:*

The recent DFID e-Forum on agriculture noted the following:

- Direct budget support often results in a shift in decision-making processes and resource allocations that work against ministries of agriculture - often one of the weakest sector ministries and the least capable of making a convincing case to central finance ministries for scarce budget resources.
- Without targeting resources to agriculture it is difficult to ensure that the sector receives the resources needed to stimulate growth. It is also makes it difficult for donors to provide effective technical support to ministries of agriculture to target poverty reduction. Technical assistance previously 'bundled' with agriculture sector investment projects is hard to target in isolation.

### **Reform of ministries of agriculture**

Ultimately, strengthening the public role in agriculture and securing increased public funding to the sector, requires a strengthening of the bargaining power of ministries of agriculture and other agencies involved in the sector. The weakness of ministries of agriculture, especially in sub-Saharan Africa, is seen by many as an obstacle to agriculture fulfilling its potential as a driver for growth and poverty reduction (DFID e-Forum on agriculture).

It is also questionable whether hierarchic ministries of agriculture, mostly starved for funds, can be transformed into delivering services demanded by poor rural communities? This question is especially relevant for failing states. Some suggest that reform of ministries of agriculture is needed. Others suggest that perhaps a better approach would be to channel support through community organisations and NGOs.

This raises the issue of effectively engaging the poor in policy processes. The mechanisms to allow effective participation by the poor in all stages of the policy process, whilst well known, are rarely used effectively.

*Issues:*

- What needs to be done, by national governments and international development agencies, to strengthen the capacity of ministries of agriculture?
- How can government and donors encourage greater participation by beneficiaries in policy decision-making processes?

## **4. Closing the evidence gap**

Two principal issues emerge from this discussion.

The first is that for many developing countries broad-based growth in agriculture is the key to achieving the Millennium Development Goals. However, achieving growth in agriculture is harder than it was previously. Taking forward the agenda requires a policy framework that goes beyond the traditional market failure approach, that recognises the important linkages between agriculture and the non-farm economy, and which allows a more dynamic understanding of the interaction between public and private roles.

Second, there has been a loss of confidence in public spending to agriculture. In response, there is a need to sharpen the administration and accountability of public funding to the sector. To make a convincing claim for public funds agriculture agencies increasingly need to demonstrate effectiveness and efficiency in what they do.

In addition to the unresolved issues already highlighted this paper suggests a number of areas where DFID can help in addressing both issues.

### **Policy and role of government**

- There is a need to revisit the role of the state in agriculture. This could be informed by a review of agricultural policy reform experience across developing country regions, with a focus upon identifying what has worked and why. The review should look at experience in establishing public and private roles in service provision and incorporate ideas about coordination and measures to reduce transactions costs in unfavourable institutional environments.
- DFID should encourage open and inclusive policy debate about the role of agriculture (especially smallholder agriculture) in economic growth and poverty reduction. The debate should be evidence-based and focussed around an understanding of the political economy for change, and public and private roles in making markets work. DFID should also engage more proactively in supporting the development of pro-poor agriculture policy and programmes in developing countries (DFID e-Forum on agriculture).
- In relation to agricultural service provision, there is a case for looking in some detail at experiences with contract-based approaches and challenge funds in encouraging private sector initiatives.
- Decentralisation presents a significant challenge for agricultural service provision. It would be useful to review experience of decentralisation implementation in relation to its impact upon the quality of agricultural services provided and the extent to which it has promoted greater participation (especially by the poor) in policy processes and the prioritisation of public resources to agriculture.
- In considering how further reforms should be implemented, good governance and political economy considerations ('drivers of change') are of increasing importance. This requires understanding the wider political and institutional environment within which agricultural policy change takes place, and ways in which 'voice', particularly of the poor, can influence change.

## **Public expenditure**

- A number of analytical tools are now being used to assess the quality of public expenditure management, including in agriculture (PERs, tracking surveys etc). It would be useful to review the broad trends, lessons and experience from agricultural PERs. This would provide recommendations for policy reform and suggestions on how government and donors can work together to ensure public spending to agriculture can be made more effective in achieving development objectives. The review should answer the following questions:
  - What can be concluded regarding the allocative efficiency of public spending to agriculture (do resource allocations to agriculture reflect national strategies and policy priorities; links to PRSP / MTEF etc)?
  - What can be concluded about the efficiency of service delivery - at the sector level (ministries of agriculture and their agencies) and at the local level under decentralised service delivery?
  - Are there any specific institutional or management issues that emerge in relation to the annual budget planning cycle for agriculture?
  - Is there scope for further work to be taken in this area, with a focus on providing practical support to DFID / World Bank country offices and partners in strengthening public expenditure management for agriculture?
- DFID should consider the implications of direct budget support for agriculture. In countries where budget support is the principal instrument for DFID engagement, but where governments are failing to deliver pro-poor agricultural growth, a twin-track approach should be considered involving DFID support for interventions specifically targeted towards agriculture (DFID e-Forum on agriculture).

**Box: What are market failures?**

Markets alone do not always provide for the best solutions. Goods and services may be provided at prices above their minimum cost, or levels of production and consumption may be below the social optimum. This situation is described as market failure. When this arises there may be a case for public action or state intervention aimed at correcting for market failure. There are a number of market failures common in agriculture:

1. **Public goods.** These have two attributes which make it difficult for private markets to operate:
  - (a) *Non-excludability.* It is difficult for the private sector to charge for them. Once a good or service is produced, non-payers cannot be prevented from using them (e.g. research into improving open-pollinated varieties of maize, where the researcher cannot prevent farmers from trading seed among themselves). Another example is some forms of rural infrastructure (e.g. roads); but with other forms (e.g. cattle dips) non-payers can be excluded.
  - (b) *Non-rival:* The consumption by one individual does not reduce its supply to others. Basic agricultural extension typically falls into this category.

Note that there are few purely public goods. But a useful test is to examine what prevents the private sector, trade associations, or civil society organisations from undertaking this activity.
2. **Externalities or spill-over effects.** These exist when producing or consuming a good or service has spill-over effects on other individuals which are not reflected in the market price. Spill-over effects can be positive or negative. A positive example is improved watershed management by upstream farmers because it stabilises the flow of water and reduces erosion downstream. A negative example is water pollution.
3. **Coordination failures.** This occurs when decentralised actions by individuals or firms do not yield an efficient outcome; or when investor's uncertainties regarding whether other individuals will invest in essential complimentary inputs causes them not to invest themselves. This is common in developing country agriculture (Hoff 200).
4. **Economies of Scale.** The existence of increasing returns to scale may lead to monopolies and barriers to entry, justifying interventions to maintain competition. Conversely, in weak and fragmented markets governments may intervene to protect or otherwise foster 'infant industries' including by means of support for producer/trade associations.
5. **Transactions costs.** Another useful way to look at market failure is from the perspective of transaction costs, which are the costs associated with participation in a market (Kydd and Dorward, 2001). Transaction costs are costs associated with information, search, negotiation, screening, monitoring, coordination and enforcement. In agriculture, transportation costs are also an important type of transaction cost. The problem occurs when transactions costs are so high that they prevent markets from developing.

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