Chapter 5

Evaluation Highlights

- The Bank has provided support in a large number of areas, some difficult to track, relevant to agricultural development.
- But those interventions have been scattered, and not linked together in a manner that recognizes the interconnected nature of agriculture activities.
- Weakness in the Bank data systems make it difficult to tell how much support has been provided in different areas.

Dried cassava, Côte d'Ivoire. Photo by Ami Vitale, courtesy of the World Bank Photo Library.

The Bank's Contribution—A Thematic Assessment

Using the evidence presented in chapters 3 and 4, this chapter assesses the Bank's activities for their contribution to relieving the constraints on agricultural development as identified in chapter 2.

Agro-Ecological Diversity

The portfolio review found that the Bank has provided some support that has made research more responsive to the agro-ecological diversity of Africa—most national research systems now have zonal station responsibilities. However, there is little indication that Bank-supported projects beyond those involving research have adapted their activities to diverse agro-ecological conditions and production systems within countries.

The Bank has helped make research more responsive to agro-ecological diversity.

Although the background discussion of project documents often refers to different agro-ecological zones, this is not followed through in the project description or linked to project activities.[1] The portfolio review found that documents for only 8 of the 71 sample projects incorporated specific activities related to the different agro-ecological conditions into the project design. Moreover, in most cases, there is little reporting on progress made in responding to the diverse agro-ecological conditions. For example, the Malawi Agricultural Services Project (fiscal 1993) had the development of technologies for different agro-ecological conditions as an objective, yet it is difficult to say whether the project succeeded in meeting that goal, because its design provided little information on how project gains would be assessed. The only reference to agro-ecological diversity in the project's completion report is that one activity carried out simple fertilizer trials and has resulted in the compilation of a database of region-specific fertilizer recommendations, but there is no discussion of how or if this information was used or transferred to farmers.

Bank staff clearly recognize the importance of adapting to agro-ecological diversity but seem to have difficulty working it into project design. Project completion reports have identified the lack of attention to agro-ecological conditions as a factor in unsatisfactory performance. The completion report for the São Tomé and Principe Agricultural Privatization and Smallholder Development Project (fiscal 1992), attributed unsatisfactory Bank performance in part to the provision of seeds that were not adapted to the countries' agro-ecological diversity. Similarly, the completion report for the Sudan Emergency Drought Relief Project (fiscal 1992) noted that the project included forage varieties not suited to

But there is little indication that projects other than research have adapted their activities to diverse agro-ecological conditions within countries.

drought conditions, resulting in low germination rates.

The ability to respond to local conditions has been the primary appeal of projects that use decentralized or community-driven development approaches. Yet a review of the agriculture projects that are meant to be client-driven found little attempt even in these interventions to respond to agro-ecological diversity. For example, the appraisal document for the Ghana Community-Based Rural Development Project (fiscal 2005) does not respond to agro-ecological diversity in the country, nor does the Tanzania Agriculture Sector Development (fiscal 2006) Project. More than 51 percent of the respondents to the IEG staff survey agreed that Bank agriculture projects in Africa are not able to respond adequately to the agro-ecological diversity and the needs of diverse production systems.

Fluctuating Rainfall and Droughts

Nineteen of the 262 agriculture-component projects in Africa supported activities related to droughts, according to IEG's recent Natural Disaster Study (IEG 2006c). Several other agriculture projects also supported activities that were expected to build country capacity to reduce the impact of emergencies (including those arising from pests and diseases). The activities included research and dissemination of drought-resistant seed varieties (Ghana Agriculture Research, fiscal 1991; Mali Agricultural Research, 1994; and Tanzania Agricultural Research, 1998). The CGIAR, with Bank support, has also made a major contribution in this area. Other activities include putting in place drought early warning systems, as in the Kenya Arid Lands Resource Management Project (fiscal 1996).

Nineteen of the 262 component projects in Africa had drought-related activities.

Though such activities may have helped reduce vulnerability, the poor sustainability record of Bank agriculture projects in Africa suggests that their long-run contribution to food security has been limited (see figure 3.2 in chapter 3). IEG reviews of completion reports have noted inadequate availability of resources to carry out activities beyond the Bank-supported projects or inadequate government commitment, among other things, as reasons. In the Zimbabwe Emergency Drought Relief Project (fiscal 1992), sustainability was a concern because of a lack of follow-through on a comprehensive policy and institutional framework for drought preparedness and drought mitigation. The Sudan Emergency Drought Recovery Project (fiscal 1992) was rated unlikely for sustainability based on its failure to generate the political support required for sustainable action on the formulation of food security policy.

These activities may have reduced vulnerability, but their sustainability is questionable.

IEG project assessments have also found sustainability to be a major concern. For example, the Kenya Arid Lands Resource Management Project was found to have established a drought early warning and response system, but of the 11 districts most adversely affected by drought, it said, "if there is no support from the broader government system in providing some resources, either through government's own resources or through mobilization of external assistance, the improvements introduced by the project will gradually atrophy" (IEG 2005b, p. 17).

The findings in the project assessments and the portfolio review show that Bank-supported agriculture activities in Africa have generally responded more to dealing with acute food insecurity when it occurs than to helping countries develop a long-term approach to address the factors that create food insecurity.[2] In the large areas of Africa where rainfall is highly variable, irrigation is extremely limited, and droughts are frequent, acute[3] and chronic food insecurity are inextricably linked. A drought worsens the situation of the millions who are chronically food insecure.

While Bank-supported activities have had some success with helping governments set up warning and drought management systems, sustainability is an issue even here. Achievements in dealing with chronic food insecurity have been poor. Despite its presence for more than two decades in several countries, Bank support has so far not been able to help

countries increase agricultural productivity sufficiently to arrest declining per capita food availability. In most African countries, food insecurity is directly related to insufficient total food production, in contrast to South Asia and other Regions where food insecurity is primarily caused by poor distribution and lack of purchasing power (Sanchez 2002).

A very large percentage of drought-related project investment has been undertaken in response to emergencies. Of the 19 projects with activities that responded to droughts, the activities in 9 were solely for emergency mitigation. Of the other 10, several attempted to put in place long-term drought management. But this work was generally not aimed at improving agricultural productivity.

Where specific activities could lead to improved long-run productivity—research and dissemination of drought- and disease-resistant varieties, for example—results have been poor. Among the reasons for this poor performance are weak coordination between CGIAR research and Bank interventions,[4] inadequate extension, and farmer reluctance to adopt improved technologies because of a shortage of complementary inputs and credit. The last could have been addressed more aggressively had the Bank-supported activities shown an appreciation of the multifaceted nature of agricultural development.

In countries where droughts are very frequent, such as Malawi, the Bank's major response has been to provide emergency loans. About 80 percent of the credit for the Malawi Emergency Drought Recovery Project (fiscal 2003) was quick-disbursing assistance for agriculture inputs to provide immediate relief. The Bank has also provided technical support for mitigation and prevention of weather risk. However, it has provided only limited support through other agriculture projects in Malawi and has not been able to contribute much to increasing agricultural productivity.[5] Meanwhile, food security in the country has become more precarious.[6] The IEG assessment of the Malawi Emergency Drought Recovery Project acknowledges that "Over the past 10–15 years, Malawi has shifted from being a self-sufficient producer of maize in non-disaster years to being a regular net importer dependent on foreign assistance to achieve a national food balance" (IEG 2007f, p. 3). Though several factors have contributed to this change, inadequate attention to issues related to agricultural development has been a major factor. Agricultural growth in Malawi declined from 8.1 percent a year during 1990–2000 to 1.8 percent during 2000–04 (IEG 2007f).[7]

Projects have generally responded more to acute food insecurity than to dealing with its long-term causes.

In Ethiopia, where droughts and rainfall variability also contribute to food insecurity, the Bank has again not taken a strategic approach to reducing vulnerability. The 1995 assistance strategy for the country noted that the central objective was to reduce poverty. Improving the ability of the rural population to cope with periodic droughts and improve food security on a sustainable basis was meant to be a key element of this strategy.

Bank support has had some success in helping governments set up warning and management systems.

The assistance strategy also recognized that most Ethiopian agriculture is rain-fed, and highly variable rainfall and periodic drought create a high level of risk for farmers and uncertainty about the expected volume of domestic food production. These forces have produced a history of widespread famine that has exacted a devastating human toll. Steps to improve food security, including greater use of water resources in times of drought, are thus central to Ethiopia's development strategy.

However, during the period of review, there has been only very limited Bank lending to support development of irrigation (through a social fund) in a country that has so far developed only 170,000 hectares of its estimated irrigation potential of 2–3 million hectares (World Bank 2006a). A Food Security Project was approved in fiscal 2002; among other things, it was meant to focus on soil conservation and water harvesting. The project was expected to do this using a community-

Where droughts have been very frequent, the Bank's response has generally been to provide emergency loans.

driven approach. But for farmers to "demand" microprojects related to soil management, they must have appropriate knowledge about viable options with quick returns. This is rarely the case. The Ministry of Agriculture's midterm review report for the project (September 2006) shows that very few of the chosen subprojects were actually designed to improve land productivity.

The Bank has provided very limited lending for irrigation development.

Early findings from IEG's ongoing Ethiopia Country Assistance Evaluation suggest that the Bank's overall efforts in the agriculture sector have been disappointing. The 2003 CAS acknowledges, "Not only are poverty levels amongst the highest in the world, but the Ethiopian population is extremely vulnerable, especially because of its reliance on a rainfall-based economy. . . . While it is the drought that has sharply increased the numbers of affected people, underlying causes of vulnerability and related economic, social, and developmental deficiencies have to be addressed" (World Bank 2003e, p. 3).

The Bank has failed to take a long-term, strategic approach to drought and food security, in part because it has not taken a multifaceted approach to agricultural development. As a result, Bank support that could have led to major successes achieved much less than anticipated (see box 5.1 for an example).

A recent IEG review of CASs in 12 African countries where there were agriculture projects with drought components found that most of the discussion around food security involved the distribution of food aid (IEG 2006c). None of the CASs mentioned the role that sectors such as transport can play in increasing accessibility to drought-prone areas or decreasing their vulnerability. As a result, rural road development, which could make a major contribution to country capacity for drought management, is generally not part of a strategic drought management approach. Further, the portfolio review for the recent transport study (IEG 2007o) found that exposure to droughts was not a major factor in identifying the location of

Box 5.1: Bank Support for Fadama Project I in Nigeria: Achievements Constrained by Lack of a Multifaceted Approach

The Bank's support of fadama irrigation in Nigeria attempts to make agricultural production less dependent on erratic rainfall. Fadama lands are flood plains and low-lying areas over shallow aquifers along Nigeria's river system. The farmers of northern Nigeria have long used water drawn from shallow wells or streams to irrigate fadama lands, where they cultivate small areas during the dry season.

A pilot initiative financed by the Bank under the National Agricultural Development Projects (ADPs), undertaken prior to the study period for this review, helped introduce low-cost tubewell drilling and irrigation by pump in the traditional fadama farming areas. The fadama components were the most successful elements of the ADPs and were scaled up into a free-standing project, the first National Fadama Development Project (Fadama I, fiscal 1993).

Fadama I raised crop yields, but profits were low because farmers lacked access to markets and insufficient attention had been given to downstream processing and marketing. Achievements were also constrained by land tenure uncertainties, which exacerbated traditional tensions between farmers and pastoralists.

Fadama II (fiscal 2004) attempts to address some of the shortcomings using a community-driven development (CDD) approach. It also proposes to support demand-driven research and extension, and better access to inputs and markets. While it is expected to handle some of the challenges that constrained agriculture production in the first project, it is not clear that it will do so. Previous IEG assessments of CDD projects have often found that such projects are unable to give adequate attention to sector-specific technical issues.

It is too soon to tell whether Fadama II will succeed. The latest supervision report notes that few of the subprojects have started yielding benefits to communities. There are also concerns about inadequate maintenance plans and insufficient capacity of facilitators and private service providers to provide adequate technical support to farmers. While the Bank can be credited for having stayed for the long haul in fadama areas, inadequate recognition of the multifaceted nature of agriculture has restrained its achievements.

rural roads in Africa. In fact, there is very little information in project completion reports on how the locations for particular rural roads were selected.

The portfolio review for this study found that although several projects have dealt with both food security and drought, few adequately addressed the causative links between the two. While improving food security was a stated objective of 8 of the 71 projects in the sample, only 1 of the 8 specifically links the issue of food security to drought, despite the frequent recurrence of droughts in the Africa Region.[8]

Partly because of the weaknesses in analytic work already noted, the Bank's project appraisal documents do not show an appreciation of the diversified coping strategies that traditionally have been followed to minimize risks of food insecurity. In diversified cropping systems, some crops, such as cassava and millet, have been particularly important because of their drought resilience. Figure 5.1 shows cassava yields in comparison with maize yields in drought years. While the Bank has contributed to development of improved millet and cassava varieties, the assessment did not find much evidence that Bank projects had a long-term strategic approach to linking the development of cassava or millet to building food security in individual countries or building on the resilience of a traditional system with built-in security measures.

Although several projects have dealt with food security and drought, few adequately addressed the causative links between them.

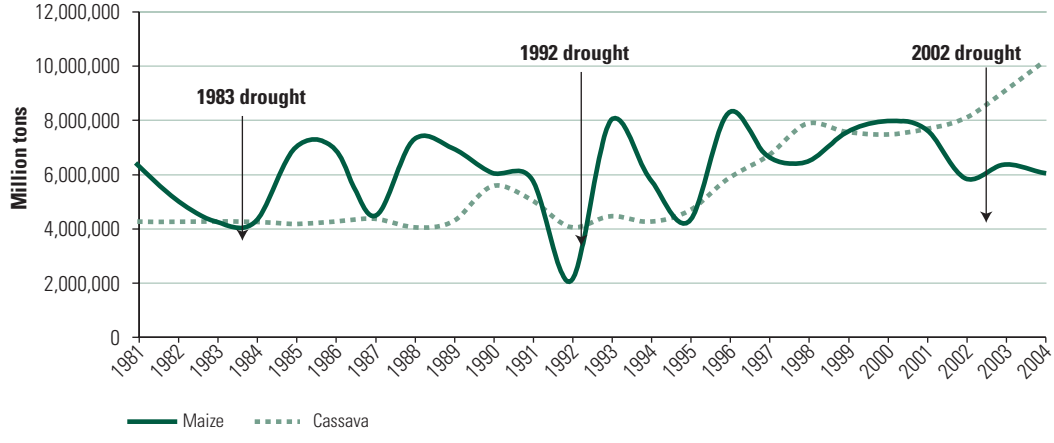
Contributing effectively to cassava development seems to have been a missed opportunity for the Bank (box 5.2).[9] A sound poverty focus in circumstances of declining soil fertility and high input costs in many African countries would likely point toward directing more effort to the development of crops of particular importance for the poor.

Similarly, although there are projects that support livestock development activities, there are few (the Kenya Arid Land Project may be the only exception) that recognize the value of livestock in the diversified production systems farmers use to cope with drought and that attempt to increase the efficiency of livestock production.

Soil Fertility

A review of CASs and project documents shows that the Bank does not appear to have engaged its African clients in serious policy dialogue about

Figure 5.1: Production of Maize and Cassava in Six Drought-Affected Countries of Southern Africa



Source: FAO Web site 2005.
Note: Countries include Lesotho, Malawi, Mozambique, Swaziland, Zambia, and Zimbabwe. The sensitivity of maize to moisture variations is compared with "cassava," representing roots and tubers.

Box 5.2: Cassava: A Missed Opportunity for the Bank to Contribute to Food Security

Cassava is Africa's second-most important food staple based on per capita calories consumed, and the Region produces half of the world's supply of the staple. Cassava provides a reliable source of food during drought (due to flexibility of harvesting), locust attacks, and the *hungry season*—the period before seasonal food crops are ready for harvest.

Cassava is grown in about 40 African countries by millions of poor farmers, many of them women, often on marginal land. Though estimates differ, about 70 percent of Africa's cassava output is harvested in Nigeria, where a number of factors have come together to allow its successful transformation from a low-yielding subsistence crop to a high-yielding crop produced primarily for urban markets. Availability of improved and disease-resistant varieties was only one of those factors (see appendix L).

African policy makers and most donor agencies neglected cassava for numerous reasons (FAO and IFAD 2005) until the late 1980s, when the Rockefeller Foundation initiated a Collaborative Study of Cassava in Africa. Then, in the mid-1990s, the FAO formally recognized the importance of cassava as a food security crop. This was followed by the Global Cassava Development Strategy (GCDS), an initiative spearheaded by the FAO and IFAD and formalized in 2002 for identifying opportunities and constraints to cassava production and processing. The strategy provides a framework for technical cooperation in research and technology transfer and for future debates on global issues affecting cassava. NEPAD has also identified cassava as a poverty fighter (NEPAD 2004; Whingwiri, 2004) and has developed a market-orientated strategy to develop the commodity, which is based on the GCDS.

Where has the Bank been?

CGIAR institutions and Bank-supported research projects have contributed to the development of improved varieties and disease/pest control for cassava, but the linkages between CGIAR research and Bank projects have been weak. Country factors clearly played the key role in the cassava transformation in Nigeria, and the Bank appears to have had a minimal role.

Between 1993 and 1999 the Bank did not approve any new projects in Nigeria because of governance problems. Nor did it support analytical work that could help build the basis for future agriculture support in this area. Current Bank analytical work for Nigeria does not even show an adequate appreciation of the reasons for the increase in production of cassava (appendix L).

The Cameroon, Kenya, and Tanzania country reviews also found a lack of appreciation in the Bank's strategy statements and activities for the important role of cassava and other root crops in providing food security. The portfolio review shows that despite the recognition of the importance of the crop in the local farming system in Bank project documents, projects have not taken a strategic approach to building on its strength as a food security measure.

The Bank as an organization is not even a member of the FAO and IFAD initiative on GCDS. It is not clear why this is so. However, many Western food policy analysts still consider cassava an inferior food whose per capita consumption is expected to decline with increasing per capita incomes, and it is possible that the Bank approach has been influenced by this thinking. Given the dramatic increase in its production and use in Africa and its role in food security, it is clear that a decline in consumption of that crop is not likely in the near future.

Sources: http://www.fao.org/ag/AGP/AGPC/gcds/GCS.htm (March 21, 2007); FAO and IFAD 2005; study research.

the Region's declining soil fertility. About 68 percent of the CASs reviewed did not mention soil fertility. The portfolio review also found that less than 10 percent of the project documents discuss the inherent limitations of African soils. While the appraisal documents for 27 of the 71 projects in the portfolio review do refer to declining soil fertility, most (25) do not recognize the centrality of the problem to agricultural development. This review found that in most cases soil fertility was "tacked on" as an issue in the project. For example, the objective of the Tanzania National Agricultural Extension Project Phase II (fiscal 1997) was to "continue to improve the delivery of extension services to smallholder farmers for increasing their incomes and productivity, while improving its relevance, sustainability, and cost-effectiveness," but the appraisal states that "through the dissemination of messages related to improved fallow, afforestation, and anti-erosion techniques, the project would also have a positive impact on soil fertility, conservation, and water management" (World Bank 2006l, p. 14).[10]

There has been limited policy dialogue about the Region's declining soil fertility.

The Bank has often taken the lead in engaging its clients and the international community in discussion and debate on issues of such global

and regional importance as soil fertility. So it is surprising that the issue has received so little attention. Bank staff are aware of the importance of the issue, however, and the CGIAR research institutions have been identifying and testing new soil management practices for some time. More recently, the Bank became party to the *Terr Africa Regional Initiative.* Launched in 2005, this is a multidimensional partnership that is expected to promote a collective approach to sustainable land management in Africa. The Bank has even supported the *Soil Fertility Initiative*[11] in Africa, but has not followed through on the initiative with either a serious policy dialogue with its clients or substantive funding support.

Interviews of Bank agriculture staff in the Africa Region and in ARD revealed several issues that may have contributed to the neglect of soil fertility. Among these are IDA funding constraints, shortage of technical staff, a sense among Bank management and staff that it would be another add-on among too many others, and an impression that this is mainly an FAO agenda.

The Bank appears to have seen soil fertility more as an environmental than an agricultural productivity issue. The portfolio review found that where project documents discuss soil fertility, the emphasis is more on halting land degradation and the consequent environmental damage than on directly addressing the link between declining soil fertility and agricultural development.[12, 13] This appears to have happened partly because environmental conservation became a priority within the Bank following the United Nations Conference on Environment and Development in Rio de Janeiro in 1992.

Concern about declining soil fertility has now led some countries, such as Malawi and Tanzania, to reinstate fertilizer subsidies, a common policy in earlier periods, as discussed in chapter 2. Many African governments and some donors believe that some food security and environmental issues could be addressed by input subsidies (Kelly, Adesina, and Gordon 2003).[14] A leading proponent of fertilizer subsidies has advocated large-scale distribution of low-cost or no-cost fertilizer as a way to help African smallholders escape the poverty trap (World Bank 2007a). Given Africa's current precarious position—rapidly declining soil fertility, very high fertilizer prices, and no easy short-term way of bringing them down to a reasonable level—it is creditable that the Bank has begun exploring ways of making fertilizers affordable for poor farmers. The above-mentioned Bank sector work (World Bank 2007a) summarizes some lessons learned and guidelines for increasing access to fertilizers by smallholders in Africa, but it is not clear how far the recommendations are being incorporated in Bank lending. In this connection, it will also be worth exploring how Kenya has succeeded in experiencing a tremendous growth in fertilizer use, as is evident in the literature (Ariga, Jayne, and Nyoro 2006), in the context of the forthcoming IEG agriculture study.

The Bank appears to have seen soil fertility more as an environmental than an agricultural productivity issue.

Water

The Bank supported 31 projects with irrigation components in the Region during fiscal 1991–2006. There have been few free-standing irrigation projects, and in only 8 of them was the irrigation component 45 percent or more. The largest share of the total lending of $343.5 for irrigation in Africa went to Mali (17 percent) in four projects, followed by Madagascar (11 percent).

There have been only a few free-standing irrigation projects.

The Pilot Private Irrigation Promotion Project (fiscal 1997) in Mali was expected to enhance the capacity of private institutions involved in providing equipment, services, and financing for small-scale irrigation investments. The findings of IEG's recent assessment indicate that the project failed to achieve its objective. It was expected that on-farm investments, induced by the project's technical assistance efforts, would lead to the rehabilitation of about 400 hectares and to the establishment of about 600 hectares of newly irrigated land. However, only 10 hectares were rehabilitated and no investments were made for new small-scale irrigation schemes, and the impact on private sector development was insignificant (IEG 2007i).

Concern about declining soil fertility has led some countries to reinstate fertilizer subsidies.

The Bank has also helped promote private sector development in irrigation.

The Bank has also helped promote private sector development in irrigation in countries such as Burkina Faso and Niger in West Africa. Among other things, the pilot projects supported services for on-farm demonstrations of small-scale irrigation equipment and techniques; promotion of markets for small-scale irrigation products, inputs, and services; and facilitation of access to financial services. It appears that these have had reasonable success, although neither project has been independently evaluated.

Current databases make it difficult to identify Bank support for water management in rain-fed areas.

In Madagascar, one of the two countries in Africa that have the maximum area under irrigation, the Bank provided support for irrigation development through three projects for a total of $37.95 million. A fourth project, on Irrigation and Watershed Management, was approved in November 2006. The Bank's support in Madagascar has largely been for institutional reform, specifically privatization of public and parastatal irrigation organizations in the early 1990s, and support for improved operation and maintenance (O&M), partly through transfer of the management of irrigation schemes to water-user associations.

The latest project aims to adopt a contractual approach that empowers stakeholders and clarifies their roles. Although it is too early to comment on project performance, a recent IEG mission to Madagascar found that transport and market access are major constraints to inputs and outputs, as is a dearth of agricultural credit on the appropriate scale. Experience from other countries in Africa shows that lack of attention to these factors has often constrained the achievements of Bank irrigation projects.

Forty-one percent of the portfolio had seed-related activities.

In some other countries, including Ghana and Nigeria, the Bank supported an irrigation component in a CDD operation or a social fund (the Community-Based Rural Development Project in Ghana, the Second National Fadama Project in Nigeria, and the Social Fund Project in Ethiopia). IEG's evaluation of community-based and community-driven approaches (IEG 2005a) noted the problem of sustainability of subprojects constructed under these interventions because of the lack of local community capacity and resources for O&M. The Ghana and the Nigeria projects are still being implemented, but the Ethiopia project has closed and the completion report itself rates sustainability unlikely.

Bank support for water management in rain-fed areas is difficult to identify because there is no system to track such projects. By looking at specific water resource management and environment "theme" codes (see appendix A), this review was able to find several interventions with small subcomponents for improved natural resource management.

The identified projects have attempted water harvesting and management (for example, Mauritania Rain-fed Natural Resource Management [fiscal 1997] and Madagascar Environment II [fiscal 1997]). In most of these interventions, physical targets are achieved or exceeded, but the projects themselves have not been sufficiently integrated with the countries' agricultural development strategy. Further, M&E has been very weak, so it is difficult to assess what has worked and what has not. The literature, however, suggests that such small-scale, technically simple water management systems can be effective in rain-fed areas (Sasakawa Africa Association 2004a; IFPRI 2005a).

Seeds

The Bank's database does not track projects designed to contribute to the production, distribution, and promotion of improved seeds. To identify such projects, IEG relied on information from the portfolio review. Forty-one percent of the portfolio was found to have seed-related activities. Most were investment projects, but there were also a handful of adjustment credits that sought to liberalize seed production and marketing or to develop a policy framework for market-based seed distribution. The latter also emphasized involvement of the private sector in input delivery systems.

The development of new seed varieties is mostly attributable to the work of the CGIAR, which the Bank supports.[15] However, Bank projects have provided opportunities for testing and scaling up of technologies developed elsewhere, particularly for crops such as maize. Among the activities supported by the projects identified by the portfolio review were research and dissemination of improved varieties, seed multiplication and production, provision of seeds in response to an emergency or as part of a safety net, and improving seed quality through construction of storage facilities or quality inspection services. The Togo National Agriculture Service Project (fiscal 1998), for example, was to support the production of seed for the major crops cultivated in the country. The Ethiopia National Fertilizer Sector Project (fiscal 1995) was to support the generation and dissemination of improved technology packages (including seeds).

Although the Bank, CGIAR, and other donors have worked on the development and distribution of improved seed varieties, the evidence in the literature suggests that the number of farmers regularly using that seed remains small (Kelly, Adesina, and Gordon 2003; Maredia and Raitzer 2006). The total area of Sub-Saharan Africa planted with improved varieties developed by CGIAR for 10 major food crops was about 11 percent of the total planted area in the late 1990s, compared with 55 percent in Asia, 30 percent in Latin America, and 48 percent in the Middle East and North Africa (Maredia and Raitzer 2006). Documented yield effects are variable across crops. Evenson (2003) estimated CGIAR contributions to yield growth based on genetic improvement in African crops to be in the range of 0.11 to 0.13 percent per year. This is significantly below the annual average yield growth of 0.30 to 0.33 percent across all developing regions.

A critical weakness in several countries has been the lack of seed multiplication capacity. Over the past two decades, most governments in the Africa Region closed their public seed companies in the belief that the private sector would take over. However, this has happened in only a few countries in areas with relatively good infrastructure and for only a few crops, such as hybrid maize, where profit margins are relatively large. Bank projects have not been very successful in promoting private sector participation in seed production for most other crops.

Development of new seed varieties is mostly attributable to the CGIAR, but the Bank has provided opportunities for testing and scaling up.

Constraints on seed production capacity have also been an issue in some countries, as IEG noted in its assessment of the Ghana Agricultural Extension Project (fiscal 1992; IEG 2001). In Ghana and elsewhere, the government's inability to establish transparent conditions for entry have made it difficult for the private sector to participate.

But the number of farmers using those seeds remains small.

The only free-standing seed project in the portfolio, the Ethiopia Seed Development Project (fiscal 1995), made little progress toward the government's objective of privatizing the seed sector. Informal seed production by farmers did not develop, private wholesalers and retailers left the market, and no new private businesses entered the market. While the project attempted to lay the foundation for a competitive seed industry, the public and private sectors remained unequal competitors. In this approach, the government agricultural extension service was provided with seed and fertilizer. Farmers also had access to credit to buy seeds from the government. The same facility was not available for seeds bought from the private sector. This limited the demand for seeds from private entrepreneurs, who left the market (IEG 2007b).

Seed multiplication and production capacity have been issues in some countries.

The literature also shows that most countries in Africa have a variety of registration and certification regulations to protect farmers against purchase of poor-quality seeds. However, the high cost in getting approvals, together with the small size of seed markets, has been a disincentive to the private sector (Poulton and others 2006). More recently, projects such as the Tanzania Participatory Agriculture Development and Empowerment Project (fiscal 2003) have begun involving farmer groups in the produc-

tion and distribution of improved varieties (Anderson and others 2005). However, the project is still being implemented. Whether these interventions can help set in place sustainable multiplication and distribution systems remains to be seen.

One factor that contributes to farmer reluctance to use improved seeds is the affordability of fertilizers. Research in Malawi has shown that farmers have not adopted hybrid seeds even when they are available because of the high cost of fertilizers (Peters 2002).[16] Women farmers find it even more difficult to buy fertilizers because they do not usually have access to money from the sale of cash crops (Gladwin 2002).

Affordability of fertilizers and lack of cash or credit limit seed use by farmers.

Another factor affecting the use of improved seeds is the credit or cash needed to purchase them. Traditionally the seeds used by African farmers have been collected at the end of a cropping season and saved on farms. With hybrids, particularly for crops such as maize, farmers have to purchase new seeds each year, but few have the cash or access to credit for such purchases. While various attempts have been made to improve the affordability constraint in countries such as Zimbabwe by supplying seeds in small packets (Kelly, Adesina, and Gordon 2003), these have not been adequate.

Farmer willingness to buy is affected by perceptions of risk.

The vulnerability of hybrid varieties of several crops to diseases and pests has also been found to be a problem.[17, 18] Given the fragile environment and the risk aversion of the average African farmers, their willingness to buy inputs even if they are available in the market also depends on whether they expect to get a good price for what they sell.[19] The experience with maize in Africa shows that small farmers use improved seeds and complementary inputs if the technology, infrastructure, and overall macroeconomic environment are appropriate (IFPRI 2005b). Weakness in extension can also be a significant handicap.[20] Hence, the availability of improved seeds alone is not enough to increase yields.

The Bank's support to address the major financial constraint for farmers has been limited.

Credit and Rural Finance

With the Bank's existing coding system, it has been difficult to get a complete picture of the institution's support for activities in this area. It was possible for this review to cross-check the codes for "banking," "general finance," and "microfinance" in the Bank's database against the 262 projects with agriculture components. Through this analysis, IEG found that 38 of the 262 projects in Africa, 14 percent of the portfolio, had some aspect of agricultural credit and financial services, though there are no free-standing credit projects among the 262 projects.

There are very few investment operations among the 38 projects identified that have attempted to address the credit constraint of smallholders. Two examples include the Ethiopia Fertilizer Project (fiscal 1995) and the Rwanda Agricultural and Rural Market Development Project (fiscal 2000). The Rwanda project provides for farmer access to cooperative credit for input acquisition. More recently, the Mali Agricultural Competitiveness and Diversification Project (fiscal 2006) aims to facilitate access to capital and financial services for the private actors involved in the agricultural supply chains.

Other projects, such as the Guinea National Agricultural Export Promotion Project (fiscal 1993) and the Lesotho Industry and Agro-industry Project (fiscal 1991), have attempted to ease the financial constraint of farmers growing export crops. The Lesotho project, for example, was to encourage foreign and indigenous investment in the industrial and agro-industries sectors.

Where credit and financial services were part of a structural adjustment intervention, the focus was primarily on improving the overall enabling environment for development of a healthy financial sector.

Projects such as Ghana Rural Financial Services and Benin Rural Savings have provided support for rural credit as a part of the financial systems approach.[21] The Ghana project, which is still active, seeks to promote growth and reduce

poverty in Ghana by broadening financial intermediation in rural areas. However, it has not provided support for agriculture development.[22]

In the Bank's data system, both the Ghana and the Benin projects lack agriculture codes. Though some may consider this mainly a coding issue, given the sectoral nature of the institution (as discussed in chapter 4), this can easily lead to lack of coordination of the activities of these interventions with other Bank-supported activities in the agriculture sector, a major concern of this review.

Past IEG studies have noted the low and declining level of support from the Bank, particularly for rural credit in Africa.[23] One reason for the low level of support is the weak performance of interventions in this area, as demonstrated by a review of completion reports and the findings of an IEG study of lines of credit (IEG 2006h). Weakness in performance of credit components can be attributed to weak implementation of Bank guidelines, particularly regarding eligibility and performance of financial intermediaries; lack of adequate Bank follow-through on reforms implemented; inadequate government ownership of the reform process; and the weak macro environment to support viable financial institutions, among other things.

An ARD review of rural finance activities noted a Bank-wide decline in credit lines and an increase in grant support. It may not be a bad thing that there are now more grants—it could be an appropriate response to the many obstacles involved to establishing a robust and sustainable rural credit system in many countries. There may be room for both grants and credit in the Bank's toolkit, and all options should continue to be explored for the most appropriate way to provide farmers with the necessary means of increasing productivity and incomes.

Weak past performance does not mean that the Bank cannot support activities well in this area. As noted in chapter 2, CGAP (to which the Bank contributes) research has made a contribution toward identifying viable and sustainable modalities for providing agricultural credit to farmers, which may help overcome the challenges identified in box 2.1. IEG's lines of credit study found that the demand from governments remains strong in this area. The study notes that "LOC [line of credit] can be a useful instrument when used well, and despite generally poor designs and outcomes, should not be entirely discarded from the Bank's lending toolkits" (IEG 2006h, pp. 32–33). However, the need is for the Bank to take greater care in designing and supervising these operations and to consistently follow Bank guidelines.

Credit components have performed below par.

There may be room for both grants and credit in the Bank's toolkit.

A 1996 IEG review of agriculture credit also suggested that subsidies could be appropriate under certain conditions, and the Bank committed itself at that time to calculate a subsidy dependence index for all rural lines of credit. In spite of that commitment, the IEG 2006 lines of credit study found that the Bank rarely undertook an analysis of the subsidy, indicating that there is little transparency with respect to subsidies in Bank operations.

Transport Infrastructure

Projects with agriculture components have made only a limited contribution to improving transport infrastructure for market access.[24] An examination of the investment in transport infrastructure in the 262 projects found only 54 with transport infrastructure components and a total of $634.1 million spent on those components over a period of 15 years. In the other 208 projects (nearly 80 percent of the projects with agriculture components), no investment was made in transport infrastructure. It could be argued that transport projects in the same area as the 208 agriculture projects might have helped improve farmers' access to markets. However, given the sectoral organization of the Bank, and the limited coordination among the Bank's various sectoral units and government ministries, there is no evidence that the process of selecting rural roads in transport projects is part of a deliberate, coordinated approach to developing agriculture.

Projects with agriculture components have made only a limited contribution to addressing transportation needs for agricultural development.

IEG's recently completed evaluation of the transport sector (IEG 2007o) found that no impact evaluations had been carried out in the Africa Region for transport interventions, which makes it very difficult to say anything about the contribution of these interventions to agricultural development. In addition, 80 percent of the respondents to the IEG staff survey agreed that coordination between Bank staff working on agriculture and those working in other sectors in the Africa Region is not good.

Even where there was investment in transport as a part of an agriculture project it was usually not done as a part of a multifaceted approach to agricultural development in the country. Of the 54 projects with transport infrastructure components, 18 are either structural or sector adjustments or economic recovery loans. The structural adjustments had some features associated with regulatory, institutional, and management reforms in the transport sector. When such reforms sought to reduce transport costs and improve services, as in Cameroon Structural Adjustment III, they likely provided an indirect stimulus to agricultural activities. However, this was not attempted as a part of a strategic approach for agricultural development.

Where there were investments in transport, they were not undertaken as part of a multifaceted approach to the development of agriculture.

In the emergency recovery loans the goal was to respond to the emergency rather than to address the longer-term development of agriculture. For example, in the Emergency Reconstruction Project (fiscal 2001) in Eritrea, even though 20 percent of the credit amount was for transport, it was primarily for the restoration or rehabilitation of key roads and bridges damaged by the war, restoration and provision of access to settlements and camps, and provision of improved access roads to areas of recurrent drought and famine.

A large percentage of the remaining investments in transport infrastructure are through interventions that finance demand-driven community-based infrastructure, such as community roads and bridges. Examples include the Malawi Social Action Fund Project (fiscal 2003), the Nigeria Local Empowerment and Environment Management Project (fiscal 2004), and the Mali Rural Infrastructure Project (fiscal 2000). Strategic development of the agriculture sector is not the objective of these interventions, which are primarily aimed at building local capacity and providing communities with access to social and economic infrastructure.

Some investments in the early part of the review period, such as the Agricultural Services Project (1992) in the Central African Republic, attempted to increase the road network as a strategy to improve productivity in rural areas. However, the achievements of the aforementioned project were limited, because its implementation was adversely affected by civil unrest.

Some other recent projects have been designed specifically to improve farmers' access to markets by road. The Mali Agriculture Competitiveness and Diversification Project (fiscal 2006) is an example of a project that is attempting to improve the performance of supply chains for a range of agricultural, livestock, fishery, and gathering products, for which Mali has a strong comparative advantage. The project proposes to improve rural roads for the collection of cotton and other agricultural produce. Another example is the Zambia Agriculture Development Sector Program (fiscal 2006), which aims to support increased commercialization of smallholder agriculture through improved productivity, quality, and efficiency of value chains where smallholders participate. The project will provide resources to rehabilitate and maintain feeder and district roads of economic importance in areas with high agricultural potential. It is too early to comment on the performance of these interventions.

Given the small size of several countries in Africa, regional programs can be very important to ensuring adequate transport coverage. The Bank has supported a regional program on Africa Transport Policy to improve transport sector performance by promoting policy reform and institutional changes in 32 countries in the Region. A recent IEG review of regional programs

(IEG 2007n) found that the program has made an important contribution to transport sector–level knowledge and expertise. The Bank is also supporting other infrastructure-related regional interventions, such as the Africa Trade and Transport Facility (fiscal 2006). It is too early to say how these projects will affect development of agriculture in the countries.

Extension

The Bank's approach to extension changed over the period 1991–2006.[25] Before the training and visit (T&V) approach fell out of favor in the late 1990s, the World Bank provided substantial financial support for this approach in several African countries.

The T&V approach provided extension services to farmers using trained public extension agents. One of the major concerns with the approach was the inability of government to meet the large recurrent cost on project completion. In the early years, T&V was also "top-down" and lacked systematic farmer participation, although this constraint was partly overcome in later years. Bank extension projects approved in the late 1990s increasingly provided for greater farmer participation, as in the Tanzania National Agricultural Extension II (fiscal 1997) and Burkina Faso National Agricultural Services Development II (fiscal 1998) Projects.

Beyond farmer participation, during the 1990s there was greater interest in promoting alternative extension concepts, with stronger participatory aspects, greater pluralism, and smaller public organizations (Anderson, Feder, and Ganguly 2006). Appendix H provides examples of alternative service providers that have become popular.

Based on country reviews and project assessments, IEG finds that the Bank's borrowers in the Africa Region appreciate the important role of technology dissemination in increasing productivity in agriculture. This is in agreement with the findings of earlier IEG work (IEG 1997b).

Extending knowledge will undoubtedly continue to play an extremely important role in the development of agriculture in Africa. For example, improved techniques can help address the large gap between potential and actual crop yields. The InterAcademy Council Report (2004)[26] found that gaps in yield within Africa are far greater than the gaps cited between Africa and the rest of the world. The report also found that "technology already 'on the shelf' has the potential to enhance land productivity in Africa once adapted and fine-tuned to location specific situations" (p. 75).

The Bank's borrowers in Africa appreciate the important role of extension in increasing productivity.

Extending knowledge can also improve management practices—with dramatic results. When the right varieties and good crop management techniques are used in combination, less fertilizer produces a higher yield. Heerink (2005) notes that only about 30 percent of the nitrogen from fertilizers is used by crops in West Africa. However, the benefits to households' food security from increased use of fertilizer and hybrid seed are unlikely to be fully realized without improvements in the efficiency of fertilizer use (Orr 2000). Timing and method of fertilizer application are significant problems that also can be addressed with good extension.

Extension can help improve crop yields and management practices.

Farmers can also improve water management if they have access to improved practices. In the Sahel, only 10–15 percent of rainwater is used for plant growth, and the remainder is lost through run-off, soil evaporation, or drainage (Heerink 2005). Farmers need information on existing low-cost, low-capital technologies for water harvesting. Knowledge transfer can also be important for the rehabilitation and maintenance of existing irrigation infrastructure.

Despite all the demand-driven and partnership approaches that the Bank has supported since it abandoned T&V, a viable and sustainable option to replace T&V has yet to be developed for Africa. Apart from a range of combinations of pluralistic approaches, some including Farmer Field Schools,[27] there has been some new thinking on what is generally termed "rural innovation systems."

A viable alternative to the T&V extension approach has yet to be found.

This approach has been supported by FAO and the International Service for National Agricultural Research (ISNAR) and is aimed at identifying constraints along the range of players in the commodity chain to develop a framework for prioritizing investments. The impact of this somewhat different angle on an old problem remains to be tested, then evaluated for impact on both growth and poverty.

Although creative ideas may be valuable, experience suggests there is some risk of grasping at fads. The Kenya agriculture sector review done for this study found that in both the adoption and the wholesale and abrupt abandonment of T&V by the Bank, there was excessive reaction to fads or pendulum swings, and insufficient revisiting of the core question of how the poor might be alternatively yet more efficiently served.

A newsletter of the nonprofit Sasakawa Africa Association (2005) noted that private contracting of agricultural advisory services has gained momentum in Africa partly because organizations such as the World Bank are championing this approach. The newsletter noted that key questions remain unanswered: "Will private contracting lead to improved conditions of employment for contracted extension staff? Will there be greater accountability in responding to farmers' needs and demands? Will cost recovery from farmers or from subsistence staples food crops be possible? Finally, will larger proportions of farmers be reached through contractual agreements on performance standards?"

Pluralistic extension approaches, though popular, face several challenges.

While pluralistic extension approaches have become very popular, their implementation faces several challenges. The transition from completely public-funded programs to alternative extension modalities with improved incentives also requires a significant investment of time—on the order of decades (Chapman and Tripp 2003). Uganda is in many respects at the forefront in Africa in developing a new demand-driven program in agricultural extension, and its experience illustrates some of the challenges (box 5.3).

And their sustainability and cost effectiveness have yet to be established.

The experience of other countries also demonstrates that it is not easy to implement extension approaches that are dependent on strengthening producer organizations and on contracting the services of private or semi-private service providers. The completion report for the Senegal Agricultural Services and Producers' Organizations Project (fiscal 1999) noted that although a semi-private agency for agricultural advisory services has been created to replace the former extension services, the agency was not completely accountable to producers. Moreover, activities that provided direct support to producer organizations were not given priority in the work of the agency. Some of the latest supervision findings from efforts such as the Kenya Agricultural Productivity Project (fiscal 2004) note issues that still need to be sorted out, including the need to develop the capacity of service providers, how to ensure transparency and fair competition in awarding contracts in weak institutional environments, and how service fees are to be determined, among others.

Maintaining the quality of Bank extension support, with multiple service providers, remains perhaps the greatest challenge. The appraisal document for the Zambia Agricultural Development Support Project (fiscal 2006) acknowledges, "In some instances, extension service provided by NGOs has reduced the control that the agribusiness companies have over the standard of service provided or the content of the technical advice and assistance being given. This has often resulted in inconsistent advice being given, causing confusion and having a negative impact on production. The situation with NGO or donor involvement in extension services is exacerbated when the project or funding ends and there is no sound exit strategy to ensure that service continues to be provided in a sustainable manner" (World Bank 2006m, p. 12).

Of critical importance to high-quality extension support is the training of extension service providers. IEG's assessment of the Tanzania Second Agricultural Extension Project (fiscal

Box 5.3: New Uganda Extension System Improves Efficiency But Faces Challenges

As the National Agricultural Advisory Services (NAADS) launched in 2001 expands, it is expected to replace Uganda's old extension system, which continues to function in the districts not covered by NAADS.[a] A midterm review of the program in late 2005 found NAADS to be more cost-effective than the earlier system.

Despite its apparent efficiency, the new system also faces several challenges, the report notes. These include inadequacy of service providers and resource constraints to implement NAADS effectively. Most of the funding support for NAADS currently comes from donors, but local governments and farmers are expected to take on increasing responsibility over time. However, the many stakeholders in the system have an imperfect understanding of the NAADS principles and it is unclear whether the local governments will have the resources to take responsibility for supporting NAADS.

The midterm report recognizes that the program "will certainly face challenges as it scales up to nationwide coverage." Drawing on their work in Uganda, Ellis and Bahigwa (2003) note that "while there has been a move away from top-down prescriptive support to sectors or subsectors, there is now far too great a reliance on an idealized concept of participatory processes in communities to enforce good governance on the part of local councils and effective service delivery by public agents at the local level."

Bahigwa and others (2005) are also concerned about the ability of NAADS to reduce the disadvantages of the poor in comparison with the nonpoor. Finally, Whyte and Kyaddondo (2006) found that despite successive initiatives, neither access to extension services nor technology adoption has reached 1970 levels.

a. NAADS is expected to facilitate formation of local farmer groups and farmer forums at the subcounty, district, and national levels. The farmer groups are expected to articulate their needs and fill them through purchases from private sector providers. The services are to be paid by the public sector through the decentralized local government institutions.

1997) notes that, at present, the strategy of "pluralism" appears to have an unspoken subscript that suggests that the approach will push private and NGO-supported extension and farmer-funded extension as far as it can go.

However, the shift to the private sector brings additional problems. Private and NGO-based extension services currently rely on buying and supplementing public extension by paying salary supplements and travel. If public extension did slowly die, NGOs and the private sector would need alternative, more costly approaches to access the same skills. In effect, they are free-riding on the underutilized skills, training, and salaries of the public extension service. Although this is efficient in the short term, it may not be sustainable in the longer term. Contracting out extension makes it possible to take advantage of all the experience in the field, but does not eliminate government's role. In addition to funding, government ensures quality assurance, oversight, and provision of information to contracted service providers (Muyanga and Jayne 2006). The need to ensure an adequate connection with research is also critical.

Training of extension service providers is critically important.

Effective M&E of Bank-supported projects will be necessary to help determine whether demand-driven and partnership approaches will be able to meet the needs of poor subsistence farmers. Private extension generally is skewed toward well-endowed regions and high-value crops, while remote areas and poor producers, particularly those producing low-value crops and little marketable surplus, are poorly served (Muyanga and Jayne 2006). The Kenya agriculture sector review undertaken for this study noted that extension in Kenya needs a realistic strategy and a clear role for the public element quite soon, otherwise it will wither and it will not be possible to bring it back.

Effective M&E will be needed to assess the efficacy of demand-driven approaches for poor farmers.

Post-T&V, it is unclear what a pluralistic approach to extension will mean for the poor. It is also unclear whether subsistence farmers (a large majority of whom are women) will be able to pay for the service provided, at least in the near future.[28] It is also difficult to tell whether it will be possible for them to organize effectively to create "demand" for extension services that will improve productivity of cassava, sorghum, millet, and other food crops.

The Bank and policy makers need to compare the cost effectiveness and appropriateness of various public and private extension options, including radio and television, for handling different short- and long-run opportunities and challenges for food and cash crop production.[29] A recent compilation of case studies on extension by the Bank's ARD Department (World Bank 2004b) also highlights the need to develop a better understanding of diverse approaches before reforms are undertaken.[30] There is a need to exercise a measure of caution in scaling up the demand-driven and partnership approaches before donors and borrowers can be reasonably sure that the returns will be commensurate with the costs and that the new approaches will not have to be "rejected" in the future. This process of comparing cost effectiveness and appropriateness does not have to be time consuming, but can be undertaken fairly quickly with critical borrower input.

Land Reform

Recent World Bank analytical work on land policy issues has contributed to the understanding of property rights regimes and their importance for agricultural development. Moreover, anecdotal evidence suggests that Bank policy advice has helped put land issues on the political agenda in many countries. For example, the agriculture sector review for Mali done for this study found that the government has rewritten the land tenure law to provide better land security and improve the likelihood of private investments in the land, and that this was undertaken in part because of the Bank. In most countries, though, the Bank has found it very difficult to provide lending support for land reform because it is a politically, socially, and culturally sensitive area.

Bank analytical work on land policy has contributed to better understanding of property rights regimes.

IEG was able to build a list of projects that dealt with land reform or land policy issues over the period 1991–2006 by combining research work done by ARD and the Land Policy Thematic Group. During 1999–2006 there were only four free-standing "land" projects: a Rural Land Management Project in Côte d'Ivoire (fiscal 1997), which has recently closed but for which there is no completion report yet; a Land Reform Support Project in Zimbabwe (fiscal 2000), which did not become effective; and two active projects, Ghana Land Administration (fiscal 2004) and Malawi Community-Based Rural Land Development (fiscal 2004). In all other cases, support for land reform is part of a wider environment or agriculture intervention.

There have been only four free-standing land projects.

Some PRSCs, such as the PRSC2 in Tanzania (fiscal 2005), have also attempted to develop a strategic plan for implementation of land reforms. In addition, a few emergency response interventions, such as the Eritrea Emergency Demobilization and Integration (fiscal 2001), have attempted to increase access to land for disabled soldiers, but it is too early to say how successful these interventions have been.

Among the findings of IEG assessments and Project Completion Reports is that land reforms are important for ensuring broad-based growth. IEG's assessment of the Zimbabwe Second Structural Adjustment Project (fiscal 1993), in particular, noted that agricultural marketing reforms alone could not ensure such growth. The skewed distribution of land needed to be resolved because most of the benefits of the marketing reforms went to the few thousand commercial farms that were able to respond quickly to them (IEG 2003d).[31] The Bank appears to have realized this long before the project was assessed. Immediately following the marketing reforms project, the Bank attempted to pilot an approach to land reform. However, implementation of that intervention was not easy (box 5.4).

The implementation of land reform interventions in other countries has also been complicated by socio-political factors. In the Côte d'Ivoire Rural Land Management Project the Bank provided support for titling of customary rights. However, it was not easy to document all "secondary" rights of the groups within the community. As a result, the project merely achieved a simplification of rights. This tended to strengthen the position of the individual

landholder at the expense of the other right holders (van den Brink and others 2005). In another example, the Malawi Community-Based Rural Land Development Project (fiscal 2004) sought to increase the incomes of about 15,000 poor rural families by implementing a decentralized community-based and voluntary approach to land reform in southern Malawi. Progress toward the development objective was slow because of challenges in land acquisition and delay in surveys of farms to be acquired, among other things.

Bank project activities have generally shown inadequate appreciation of the time that is required to build consensus around sensitive issues such as land reform. The Lesotho Agriculture Policy and Capacity Building Project (fiscal 1998) had a component for facilitating the development of a new land policy and legislation compatible with sustainable land use systems. While the government made significant progress with respect to land policy, the new legislation was not enacted by project close. The project design had not accounted for the time-consuming stakeholder consultations required to reach consensus on land legislation.

In Ghana, the objective of the Land Administration Project (fiscal 2004) was to develop a sustainable and well-functioning land administration system that is fair, efficient, decentralized, and enhances land tenure security. Supervision missions have noted that the objective was ambitious for a five-year project, and at best the project could be a first phase that laid the foundation for accelerating reforms in the sector.

One lesson is that land reforms are important to broad-based growth.

Price and Marketing Reform

Reforming output and input prices and markets to improve the incentives for growth of agriculture has been a major area of Bank intervention in Africa. While a significant part of this reform was attempted in the late 1980s and 1990s through policy advice and structural and sectoral adjustment credits (now called development policy lending), sector projects have also been important. The adjustment reforms were meant to improve the incentives for farmers to increase production by reducing domestic market distortions and by encouraging private traders to replace the inefficient state trading companies (box 5.5). Since 1980 more than 30 countries have undertaken agricultural policy reforms as part of the broader adjustment agenda (Jayne and Jones 1997).

The Bank has generally underestimated the time required to effect reform around such a sensitive issue.

More than 30 countries have undertaken agricultural policy reforms since 1980.

Ex-post analysis, based primarily on the findings of Project Performance Assessment Reports, the portfolio review, country agriculture sector

Box 5.4: Zimbabwe Pilot for Land Reform Fails to Take Off

The Land Reform Support Project (fiscal 2000) in Zimbabwe was designed to pilot market-assisted land reform approaches. The project would have introduced a number of innovations for increasing direct participation of the ultimate beneficiaries and Rural District Councils in the planning and implementation of resettlement schemes.

Given the importance of the land issue in the country, the project's effectiveness date was extended four times to allow government to meet six (operational) conditions. However, these were not met and the credit was allowed to lapse.

The completion note for the project noted that following the amendment to the constitution and the Land Acquisition Act in mid-2000, the government's land reform strategy moved away from land acquisition at market value and the piloting of community-driven models to an approach based on compulsory acquisition at below-market value. The government lost the political will to go through with the agreed approach as the political situation in the country changed with the emergence of a strong opposition party. These developments completely undermined the project concept.

Box 5.5: Agricultural Market Reform in Africa: The Expectations

Structural adjustment began as a way to reform overspending parastatals, but it evolved to achieve other ends as countries' current account deficits increased. As the deflationary effects of higher import prices became clear, removing other price distortions (subsidies and taxes) and improving the regulatory environment for private entrepreneurs also became important. These measures were to improve the efficiency of resource allocation by having price signals accurately reflect their real values to society and by enabling private entrepreneurs to compete with and even replace parastatals.

The agriculture sector was important in the reform agenda for two reasons. First, it represented a substantial component of domestic production in most African countries, and supply response in the sector was a crucial determinant of the economy's response to changing incentives. Second, most economists and policy makers were convinced that trade and sector policies had been discriminating against the agricultural sector. Redressing this bias became a priority of the structural reform agenda. A healthy pattern of structural adjustment, based on exports and income expansion rather than on imports and demand contraction, was expected to stimulate strong agriculture sector performance. In most African countries, Bank-supported adjustment investment projects sought to phase out the provision of agricultural services better done by the private sector and support revision of regulations to provide an enabling environment for private sector investment in the agricultural sector. Broadly, the reforms were meant to:

1. Liberalize input-output prices by reducing or eliminating subsidies on agricultural inputs, realigning domestic crop prices with world prices, eliminating pan-seasonal and pan-territorial pricing, and reducing exchange rate overvaluation.
2. Remove regulatory controls in input and output markets, lifting restrictions on the internal movement of food crops and relaxing quantitative controls such as delivery quotas and licensing arrangements.
3. Restructure public enterprises and withdraw marketing boards from pricing and marketing activities and narrow their role to more supportive activities.

The *expected* long-run outcomes were:

4. Incentives for farmers are improved by increasing product prices and decreasing input costs, principally by encouraging private traders to substitute for the state trading companies.
5. Private investment is expanded.
6. Gains made in economic efficiency by eliminating price distortions and input price subsidies and the control of imports.
7. Trade balances are improved by stimulating exports and reducing imports.
8. Agricultural production and incomes for farmers are improved; better food security.

Sources: Sanders and others 1996; Mellor 1998; Kherrallah and others 2002; study research.

reviews, and the evidence in the literature, finds that reforms have been pursued to varying degrees in different countries and points to both positive and negative influences flowing from the reform process. There were variable results across countries and crops. Although difficult to clearly categorize, there was comparatively more success achieved on some aspects than others. (appendix J summarizes reforms and achievements from Bank credits). In the literature there is consensus (Eicher 1999; Mkandawire and Soludo 1999 as referenced in Kherallah and others 2002; IFPRI 2000) that the reform program fell short of achieving its expected outcome.

The reforms have been pursued to varying degrees and had both positive and negative influences.

The reform process in Tanzania and several other African countries generally improved the macroeconomic environment and provided greater fiscal discipline through rationalization of the role of the public sector and promotion of a market-based exchange rate. According to IEG's 2003 *Annual Review of Development Effectiveness* (ARDE; IEG 2004b), policies in Africa have, on average, improved modestly, and those improvements have held. Analysis of country policy and institutional assessment (CPIA) data shows that overall CPIA ratings have improved for Africa since the late 1990s, but they remain below those of other Regions. IEG's project assessment for the Tanzania Agriculture Sector Management Project (fiscal 1994) concludes that in the broader institutional development sense, the "rules of

the game" in Tanzania have changed substantially in a positive direction over the past decade, and the Bank project can claim to have contributed to this change.

The reforms also led to the withdrawal of marketing boards from pricing and marketing in several countries, relaxation of quantitative controls, and removal of regulatory controls in input and output markets. These changes considerably improved the incentives for production of some traditional export crops such as cotton. Growers of these crops in several countries are able to receive a greater share of the world price for the products (see appendix I for the story of cotton sector reform). The few studies available, some by the World Bank (Baffes 2005), generally confirm the positive change in marketing, particularly in cotton.

Overall, the picture was variable across countries and crops. For example, coffee production is reported to have increased in Uganda after the liberalization, while in Cameroon the policy reforms had a negative impact on the cocoa and coffee sectors (box 5.6). IEG's assessment of the Uganda Agricultural Sector Adjustment Credit (fiscal 1991) found that the project supported the very successful shift from the Coffee Board marketing monopoly to licensed private coffee traders. Following the change in marketing, coffee farmers, by the end of the project, were receiving 65 percent of the export price, compared with 30 percent before. In countries such as Mozambique, the story of cashews is much more complicated, as discussed in chapter 4.

The reform process also gave a boost to exports of nontraditional crops such as flowers from Kenya and mangoes from Mali. Today these crops represent a small but growing share of agricultural value added in several countries. The private sector has been playing an important role in this area. As with the rest of the agriculture sector, however, continued growth in nontraditional exports is challenged by weak institutions, poor transportation, and high input prices. Competition from countries outside of Africa is also a factor. Addressing increasingly stringent sanitary and phyto-sanitary standards in global markets is an even bigger challenge for Africa. There is a growing awareness of the need for supply chain coherence and efficiency in export marketing. While the Bank has been helping some countries in this area (Senegal, for example), there is still a long way to go.

Reforms led to the withdrawal of marketing boards from pricing and marketing in some countries.

Perhaps the biggest shortcoming is that the reform process had limited impact on food production. The average annual growth rate for agriculture value added was negative throughout the 1980s and 1990s (IFPRI 2000). In most reforming countries the private sector did not step in to fill the vacuum when the public sector withdrew. The portfolio review found that at least 30 percent of the ICRs reviewed raised this issue as a concern.

The reform process also boosted nontraditional crops, but had only limited impact on food production.

The private sector did not step in because of the prohibitive risks, high transaction costs, lack of access to information, and absence of contract and property right laws (IFPRI 2000). The project assessment of the Ethiopia National Fertilizer Sector Project (fiscal 1995) found that the project was not able to achieve its core objective of promoting a competitive fertilizer market because the private sector, already operating in a concentrated and government-dominated market, was squeezed out, and importing and distributing fertilizer became exclusively a government domain. "The inefficiency and misuse that prevailed during subsidy regimes prevalent in the pre-reform period have now been replaced by low profitability and high risk of fertilizer use" (IFDC 2006).

Input prices for the farmer rose dramatically. The value-cost ratios for a number of crops in several West African countries are reported to have declined since the 1980s, with most food crops having values of less than 2 in the mid-1990s (Heerink 2005).[32] Many otherwise viable technology options for Africa produced by past research remain underexploited because of high input and low output

The private sector did not step in because of high transaction costs, lack of access to information, and absence of contract and property laws.

Box 5.6: Negative Impacts of Policy Sequencing on Traditional Export Crop Sectors in Cameroon

The Bank played a significant role in the liberalization of cocoa and coffee marketing in Cameroon. In its first Structural Adjustment Loan to the country it initiated the breakup of the National Marketing Board (ONCPB) through loan conditionality. The reforms also called for devaluation, which finally occurred in January 1994. Unfortunately, because of the political economy of liberalization and the devaluation, the sequencing of these reforms was less than ideal for cocoa and coffee producers.

The removal of the 50 percent subsidy on fertilizers was the first policy reform implemented. Subsidies were gradually phased out from 1988 to 1992. This was followed in 1990 by a 40 percent cut in the official producer prices for coffee and cocoa by the ONCPB, which was unable to maintain stable producer prices in the face of the overvalued CFA franc and following the depletion of its reserves by a fiscally strapped government.

Producers responded by significantly curtailing resources allocated to cocoa and coffee agroforests, including fertilizers. With world coffee and cocoa prices at historic lows, state-administered panterritorial pricing was phased out in 1992 for coffee, but not until 1995 for cocoa. Price liberalization at a time of historically low world prices and an overvalued exchange rate resulted in farm gate prices that were less than half their nominal 1988 levels. At these prices, many farmers did not even harvest their coffee.

At the same time, the liberalization of fertilizer markets and the de facto liberalization of pesticide markets not only increased producer costs but also reduced availability because of the inadequately developed private sector. Fungicide control of cocoa blackpod disease fell dramatically, from over 30 million packets of fungicide distributed free by the state in the mid-1980s to less than 3 million purchased from private suppliers in 1993.

Finally, when devaluation came in 1994 and doubled nominal producer prices, the supply response was muted by a decline in the productive capacity of cocoa and coffee plantations, which had been, at best, minimally maintained under the policy regime from 1989 to 1994.

In sum, the unintentional effect of the structural adjustment conditionality was to seriously handicap Cameroon's smallholder export sector by a significant depreciation of farmers' tree stock. When prices in the mid- and late-1990s rose, farmers were unable to respond robustly.

Instead of asking where Cameroon's future comparative advantage was likely to lie in the late 1980s and 1990s, when commodity prices were at historic lows, and perhaps deciding that the economically important coffee and cocoa sectors of smallholder producers might have required support to help them adjust to a temporary shock in world commodity markets, the Bank pushed for its standard liberalization package. As a result, the country witnessed a serious extensification of its coffee and cocoa agroforestry systems.

Source: Essama-Nssah and Gockowski 2000.

prices (InterAcademy Council 2004). Analysts note that in promoting agricultural development, African governments have an important role to play in input output market information systems, tax reforms, and regional cooperation where markets are too small to attract private investments. When these services are missing, the private sector cannot grow to its potential (Breman and Debrah 2003).

Most food in Africa is produced for home consumption by women farmers, who are not likely to be directly affected by the positive gains in the macroeconomic environment flowing out of the reforms. Farmers were, however, negatively affected by the rise in fertilizer prices. The rationalization and privatization of the work of the cotton and other parastatals further worsened access to fertilizers. For example, the Mali agriculture sector review found that both (cotton and cereals) crop types received input, credit, and extension support from the cotton parastatal in its area of operation. However, the parastatal narrowed its range of activities to focus on core cotton operations in the late 1990s, and the support for cereal crops was discontinued. As a result, fertilizer use for maize and other cereals declined sharply between 1999 and 2000.

Farmers were negatively affected by high fertilizer prices.

The large imports of cereals undertaken by several countries to meet the needs of the domestic market have led to a serious drain of foreign reserves in many countries in Africa. As a result, the expected improvement in trade balance noted in box 5.5 did not materialize.

High input prices have also adversely affected export crops. Before the reforms, particularly in West Africa, the parastatals dealing with crops such as cotton used to meet the input and credit needs of the farmers and assured them a secure market for their outputs. With privatization, producers of export crops in some countries are now faced with the same constraint as food crop producers with regard to access to inputs and credits. For example, the Senegal Country Assistance Evaluation (IEG 2006f) found that the private sector failed to engage in input supply, commercialization, or marketing following liquidation of the groundnut parastatal that had been active in distribution of seeds and fertilizers and the collection of groundnuts. This reduced farmers' access to critical inputs.

While in some countries organizations of producers have come up with Bank support to address this issue on behalf of their members, this has not happened across crops or in all countries. One reason has been the time it takes to build efficient producer organizations. Also, given the diversified cropping patterns in Africa, it has not always been possible for farmers to form single-commodity associations.

Why did results fall short of expectations? Because of inadequate background analytical work, weak political support, and insufficient appreciation of the system's incentives.

With regard to inadequate background analytical work, Tshibaka (2003, pp. 275–76), commenting on the privatization process supported under Bank projects, notes that "Little attempt was made to identify functions that are best performed by government agencies and those that are best handled by the private sector or to assess the private sector base in each country concerned. The failure to examine these and other related key questions has made it difficult for the designers of the structural adjustment reforms to propose appropriate policy measures and actions that could help strengthen and foster the development of the private sector in order to enable it to effectively handle various functions that were previously carried out by parastatals in the economy."

High input prices have adversely affected export crops.

Tshibaka's finding is supported by the evidence from the recent project assessment of the Agriculture Sector Management Project in Tanzania (fiscal 1994). The assessment notes that "the issue was not merely what activities could be best carried out by the central ministry(s), it was also what activities could be best carried out by the private sector, by partnerships, or by more independent commodity organizations, given the capacity of these alternative service mechanisms at the time" (World Bank 2007d, p. 8). While this emerges as a fundamental weakness in design in the Tanzania project, it was symptom of a wider problem with design of most similar projects.

IEG's 1998 Kenya CAE (IEG 2000b) also noted the failure of the Bank and borrower to focus sufficiently on the capacity of the private sector to pick up the roles left by divestiture. For example, the removal of the National Cereal and Produce Board (NCPB) monopoly, something that had been asked for since 1980, was not accompanied by enough analysis of what would happen afterward, given the poorly developed trader and storage network. While some companies did invest for a short period, the continued threat of NCPB intervention has kept them out of new investment for the past 10 years.

Results fell short because of inadequate analysis, weak political support, and insufficient appreciation of system incentives.

The Senegal Country Assistance Evaluation (IEG 2006f) also notes, "A major issue that delayed the liberalization of the groundnut sector has been whether the reforms could have adverse distributional consequences for poor farmers. The Bank should have undertaken analytical work on these issues sooner, given the importance of this sector to rural livelihoods" (p. 25).

Further, achievement of the full benefits of the process required active government and donor support to develop and integrate markets, not simply "liberalize" them.[33] This meant attention to the development of infrastructure to ensure

coordinated and sustainable systems of input delivery, farm finance, and reliable output markets, not simply trusting the market to take over.

As already seen in chapter 4, the negative impact that weak political support and capacity in the borrower can have on the success of the reform process was not well appreciated. The weak political will among several governments led to partial adoption of reforms and delayed implementation, and even reversals in several cases.

At the sector level, policy makers saw incentives in terms of changing prices, whereas individual farmers were motivated by considerations of income, of which price and costs are a part (Donovan and Casey 1998). A large number of farmers whose product never enters the market did not benefit from improved output prices, but were adversely affected by input prices.