

DIRECTIONS IN DEVELOPMENT

Rural Development Strategies for Poverty Reduction and Environmental Protection in Sub-Saharan Africa

KEVIN CLEAVER

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for Poverty Reduction
and Environmental Protection
in Sub-Saharan Africa**

Kevin Cleaver

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Contents

Foreword	<i>v</i>
Preface	<i>vii</i>
1 Rural Poverty, Environmental Concerns, and Agricultural Growth	1
Indirect Benefits of Agricultural Growth	1
How Has African Agriculture Performed?	2
2 Early Strategy for Dealing with Rural Development	4
Integrated Rural Development (IRD) Projects	4
Single Crop Development Projects	5
Agricultural Credit Projects	5
Free-Standing Agricultural Services	5
Irrigation Projects	5
Rural Schools and Health Facilities	6
3 What Was the Impact?	7
4 A Change in Approach	12
Notes	14
5 Is the New Strategy Working?	15
Conclusions from the Data	20
6 Weaknesses in the New Strategy	22
Notes	25
7 Adjustments Needed in the Development Strategy	26
Notes	32
8 The Role of the World Bank	33
Note	36

9 Issues Raised by African Government Leaders and NGOs	37
Urban Bias Is Exaggerated	37
The Strategy for Fighting Rural Environmental Deterioration Is Unconvincing	38
Fertilizer Subsidies Are Needed	38
Regional Integration Is Underemphasized	39
Donors Should Not Strategize for Africa	39
Capacity of "the People" to Participate Is Limited	40
Greater Donor Selectivity Hurts the Neediest	40
Link Debt Forgiveness to Rural Development Efforts	40
Overgeneralization Is Dangerous	41
 Statistical Tables	 43
 References	 62

Foreword

This book traces the history of donor assistance to agriculture and rural development in Sub-Saharan Africa. Initial strategies in the 1970s and 1980s of integrated rural development, agricultural commodity development, agricultural credit, irrigation, and some agricultural services had high failure rates. One problem was the poor economic and agricultural policy environment. Another had to do with flaws in project design. Most projects excluded the private sector and nongovernmental organizations (NGOs). Public sector agricultural services were fragmented into separated donor projects and suffered from weak government commitment. A change of strategy by donors and governments began in the late 1980s and continues to this day. It is characterized by emphasis on economic and agricultural policy reform and by greater donor cooperation within national programs for livestock development, agricultural research, forestry, agricultural extension, small-scale irrigation, and rural roads. Most of these programs are run by government line agencies.

After summarizing the current thrust of government and donor agricultural strategy, the paper identifies recent and emerging problems. A key problem is continued donor support for agriculture in countries where government commitment is weak and agricultural strategy deficient. Other difficulties abound, such as inadequate participation by the rural population in program design and implementation, poor private sector response, and weak capacity of African institutions to manage programs. Solutions to these problems are suggested, including deeper agricultural policy reform, greater donor selectivity in the choice of African government partners, more direct support of donors for private sector agricultural marketing and processing, better institution building, governmental collaboration with NGOs, and support for a broader concept of rural development, including, apart from agriculture, other ingredients such as health, education, infrastructure, finance, and political reform.

The Africa Region of the World Bank is embarking on the implementation of the solutions suggested in this paper, with our full support.

The strategy proposed reflects some of the general principles of the renewal program on which we have embarked, of which greater attention to client feedback is a critical element.

*Callisto Madavo
Jean-Louis Sarbib
Vice Presidents
Africa Region
The World Bank*

Preface

This book traces and evaluates the evolution of donor and African government agricultural and rural development strategy in Africa over the past thirty years. It evaluates the impact of the most recent approaches to agricultural and rural development in Africa and makes recommendations regarding the World Bank's role in these areas. Comments received on an earlier draft from African government leaders, NGOs, academics and Bank staff have contributed to this report. Important issues raised by African commentators are summarized in the final chapter.

Rural development requires definition. In this book it means the improvement of the economic and social well-being of the rural population. Improving participation in political decisions is also part of rural development. The improvements need both a short-term and a long-term dimension, with the long term influenced by environmental considerations. Rural development activities that are not environmentally sustainable will not improve long-term well-being. Also, the benefits of rural development must be widely shared among the rural populations, especially the rural poor.

The recommendations for the Bank are inspired by several sources, including the recent programs proposed by Africa Region agriculture staff, best practice in Africa, and feedback obtained from African participants at recent seminars discussing the subject. The first of these seminars was sponsored by the Sasakawa 2000 Foundation. Former U.S. president Jimmy Carter and Nobel laureate Norman Borlaug helped manage the seminar, which was held at Airlie House, Virginia, in September 1996. The second was the World Bank's Environmentally Sustainable Development (ESD) Conference on the topic "Rural Well-Being: From Vision to Action," held in late September 1996. The third was a two-day conference in October 1996 at which senior managers and agricultural staff of the World Bank's Africa Region discussed rural development strategies in Sub-Saharan Africa.

Another significant event was the development of a global agricultural and rural development strategy for the World Bank. Alex McCalla and Hans Binswanger were the principal architects of the strategy, which was important for the development of this report.

Major contributors of ideas or comments included ministers of agriculture in Benin, Ethiopia, Ghana, Malawi, Mali, Tanzania, Togo, and

Uganda. Helpful comments were received from Chris Doveswell of Sasakawa 2000, Abdoulaye Sawedego of the Food and Agriculture Organization of the United Nations, E. V. K. Jaycox, Daniel Benor, Robert McNamara, and the agricultural staff of the World Bank's Africa Region and from academics and representatives of many NGOs who attended the ESD conference. W. Graeme Donovan and Narendra Sharma of the World Bank contributed intellectually through their writings on African agriculture. P. C. Mohan and Usha Pitts provided editorial assistance. Finally, the vice presidents of the Africa Region of the World Bank, Calisto Madavo and Jean-Louis Sarbib, participated in all three conferences, chaired two, and organized much of the feedback obtained.

1

Rural Poverty, Environmental Concerns, and Agricultural Growth

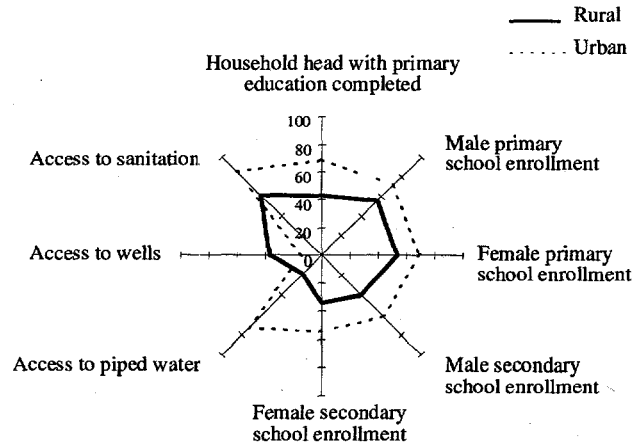
About 70 percent of Africa's poor are rural. Figure 1 presents indicators of well-being for rural and urban populations in seventeen countries for which household budget data are available. About 40 percent of rural household heads have completed primary education, compared with 70 percent of urban household heads. Forty-five percent of the urban population and 30 percent of the rural population have access to sanitation. Forty percent of school-age females in urban areas are enrolled in primary school, compared with 25 percent in rural areas. The relative bias against rural areas for piped water is somewhat offset by the greater access to well water. Overall, these household data show that while a large percentage of the urban population does poorly, the rural population does worse (World Bank 1997).

Poverty reduction will require agricultural development in most African countries—and not only because of the preponderance of the poor who are rural and dependent for the most part on agriculture. Analysis done by the World Bank shows that a necessary, though not sufficient, condition for reducing poverty generally is rapid economic growth. Economic growth of 6 to 7 percent per year has been found to be necessary on average in Africa to obtain a 2 percent per year reduction in the number of poor (World Bank 1997). To obtain an average 6 to 7 percent per year economic growth rate in most African countries requires an agricultural growth rate of 4 to 5 percent. This is due not only to the large contribution of agriculture to gross domestic product (GDP), which is 30 to 35 percent on average (see appendix table 3), but also to the fact that in most countries the major industries are related to agroindustry, agricultural marketing, and farm input supply. Expanding agriculture allows more raw material to market and process and more inputs needed for farming, thus stimulating these sources of growth.

Indirect Benefits of Agricultural Growth

The benefits of agricultural growth are also indirect. The most important of these benefits is the impact of expanded food production in reducing food prices in the cities. Since the poor (including the urban

Figure 1. Welfare Indicators for Rural and Urban Areas in Seventeen Countries of Sub-Saharan Africa



Source: World Bank, 1996.

poor) spend a large proportion of their incomes on food, a reduction in food prices increases their real income. A second indirect effect results from the consumption by farmers of products and services made in the cities. An expansion in farm income from increased agricultural production stimulates demand for nonfarm products.

There are other objectives that are achieved by a focus on agriculture. Many donors, and increasingly African governments, have identified special constraints facing women that reduce economic growth. Most working women are employed in agriculture, and many of the constraints facing them exist in the rural economy (World Bank 1989; Cleaver and Schreiber 1994). These include legal and customary constraints on land ownership and access to credit; absence of male partners who work in towns and cities or off-farm, leaving the woman as the head of the farm; work burdens on women in addition to farming, including household management and water and fuelwood collection; and cultural constraints on women's use of equipment and oxen. Improving the economic status of women will require dealing with the constraints facing women farmers.

How Has African Agriculture Performed?

Sub-Saharan Africa's agricultural performance has been poor on average (World Bank data, summarized in the appendix tables):

- Agricultural growth has averaged less than 2 percent per year for the past thirty years.

- Population growth is more than 3 percent per year.
- Food production per capita is declining. Even with a rapid increase in food imports (7 to 10 percent per year), 30 percent of Africa's population is food insecure.
- Many donor-supported projects fail. (For example, 50 percent of World Bank-assisted agriculture projects during the past twenty-five years have failed to provide sustained economic returns initially targeted at 10 percent or greater.)

In addition, most of the literature now agrees that the major environmental issue facing most of Africa is a combination of soil, water, forest, and pasture degradation in rural areas. The major cause is expansion of farming area resulting from growth of the rural population, combined with farming practices that often mine the soils and cut forests for fuelwood and farming. Africa's natural resources (forests, pastures, rivers, lakes, and wildlands) tend to be poorly managed and are subjected to environmentally damaging practices (IUCN 1989; Lusigi and Nekby 1991; Sharma and Feder 1992; Jolly and Torrey 1993; Cleaver and Schreiber 1994; Keck, Sharma, and Feder 1994; and annual reports from the World Resources Institute, in particular, WRI 1994). One indicator is the rapid forest destruction rate, from 3.5 million to 5 million hectares per year. Additional outcomes of this process are a decline in biodiversity, destruction of animal and plant life, and destruction of environmentally fragile areas.

The implications of the above data are that agriculture is critical to Africa's economic, social, and rural development. But in most African countries agricultural performance has not achieved the ambitious objectives set out for it. The result has been continuing high rural poverty and environmental degradation. On average, this situation has been steadily deteriorating since the independence period of the 1960s.

However, there is great heterogeneity in African agricultural performance. Some countries are doing much better (see the appendix tables). This heterogeneity contains some answers for agricultural strategy because the better performers show the way for the laggards.

2

Early Strategy for Dealing with Rural Development

In the 1970s donor agencies and African governments began significant investment in the five types of agriculture projects described below (Lele 1990, 1991; Cleaver 1993).

Integrated Rural Development (IRD) Projects

IRD projects provided investments needed for development in a specific region within a country. Typical components included:

- Seed production and distribution
- Agricultural research
- Agricultural extension
- Land use planning
- Rural crafts and small-scale industry
- Livestock extension and veterinary medicine
- Forestry and tree planting
- Rural roads
- Water supply for villages
- Health centers and schools in rural areas
- Credit to finance on-farm investment by smallholders
- Management of the project by a project management unit that was expatriate-supported and insulated from the ministry of agriculture.

Private sector marketing or credit was never included. The private sector was often suppressed by the government. Private agricultural trade was highly regulated and in some cases was illegal above certain quantities. Government-owned parastatals marketed locally produced cash crops and imported food crops, and government agencies fixed the prices paid by parastatals to farmers. Farms were private but received public services that were largely provided within donor-financed projects.

Academics, donors, African governments, and nongovernmental organizations (NGOs) applauded this approach in the 1970s and early 1980s. There was remarkable homogeneity across donors and countries in implementing the projects within these policy frameworks. IRD projects are rarely supported by donors today.

Single Crop Development Projects

Single crop development projects were undertaken for such products as cashew nuts, palm oil, rubber, cotton, tea, coffee, cocoa, and sugar. There were three different submodels:

- A model whereby a parastatal company managed plantations for crop production. Production was processed in plants usually located on the plantations. Sugar, rubber, palm oil, and tea were most often managed in this way.
- A model under which project support was provided to small farmers to produce a commodity bought by the parastatal company. The company provided specialized extension and credit to these client farmers. The parastatal also processed the crop. Cotton, coffee, and cocoa were often handled in this way.
- A combination of the first two.

The parastatal company often provided health and education services to employees and client farmers. Company towns grew up. Exports were often managed by a separate government agency but sometimes by the company. The company was owned by the government, although in a very few cases, cooperatives were used.

Agricultural Credit Projects

Agricultural credit projects were managed by government-owned parastatal banks. Typically, a donor loaned funds to the bank, which then lent these funds to farmers for farm investment.

Free-Standing Agricultural Services

Free-standing agricultural services for agricultural research or livestock services were sometimes supported. They were managed by a government organization (typically the ministry of agriculture and livestock development). Livestock services included veterinary, livestock extension, and the marketing of livestock products. More often, such services were provided through rural and commodity development projects.

Irrigation Projects

Government project management units managed irrigation projects in arid or low-rainfall areas. Irrigation projects had a heavy engineering content. The goal was to deliver water to farmers' fields but leave its use

and management up to the farmers. Like IRD projects, irrigation projects often had other components, such as marketing, extension, research, and credit. In the early years, many were relatively large scale.

Irrigation investment did not take off in most of Sub-Saharan Africa as it did in Asia. Large irrigation projects were undertaken in the 1960s and 1970s in only a few countries, notably Madagascar, Mali, Senegal, and Sudan.

Rural Schools and Health Facilities

In addition to the physical and social infrastructure included in rural development projects, there was some effort outside such projects to construct schools and health facilities (Psacharopoulos 1990; World Bank 1994c). In the 1970s and early 1980s these projects focused on structures, leaving teacher and medical training, school supplies, policy, and other "software" to government. Several donors provided significant scholarship programs for high-level training in the donor country, but few returnees practiced in rural areas. Similarly, highway projects often traversed rural areas and provided some transport service, but outside the agriculture project areas rural roads were neglected (World Bank 1987; Riverson, Gaviria, and Thruscutt 1991; Heggie 1994). Rural water supply was supported by some donors, although again, most water supply projects were carried out as part of IRD projects.

3

What Was the Impact?

In most countries the government's price and marketing policy toward agriculture effectively suppressed farmer incentives through the mid-1980s. This situation was ignored by donors during project design. Tanzania, a favorite of the donors at the time, presents a typical case. The government maintained the following policies:

- Official agriculture prices so low as to be confiscatory; black markets developed, despite the risk of confiscation and arrest of farmers and middlemen who participated.
- Government marketing enterprises, characterized by inefficiency, high overhead, and poor service. These enterprises could not meet agricultural marketing needs.
- Farm input supply by government, often accompanied by significant corruption and poor service.
- Legal suppression of potentially competing input supply and marketing by private or cooperative operators.
- An overvalued exchange rate, reducing the local currency value of export crops and eroding the local currency value of imported food. This resulted in the substitution of imports for local food production and a decline in agricultural exports (Cleaver 1993).

There was remarkable homogeneity in these approaches and policies across Africa. A few countries, such as Côte d'Ivoire and Kenya, were more open to private participation, while others, such as Guinea, were even more closed and controlled than was Tanzania (Jaeger 1992; Cleaver 1993; World Bank 1994a; Badiane and Delgado 1995). The result was a reduction in farmer incentives to produce, even when there was substantial donor investment in agriculture.

There was an urban bias in government expenditure (excluding donor funds) throughout Africa. Despite donor support for rural development, little was spent by government on infrastructure, health, and education in most rural areas of Africa. Of course there was variation, with Côte d'Ivoire, Kenya, and Nigeria spending more in rural areas. But in general, highway projects, urban infrastructure, urban health and education facilities, and public employment took precedence over rural development throughout Africa.

These domestic policy problems were exacerbated by agricultural subsidies in industrial countries that caused the reduction of world prices for agricultural products. These products included some from Africa (for example, most livestock, cereals, and oilseed products). The decline in global prices for these commodities further reduced African farmers' income. Some industrial country agricultural products (often dairy products, sometimes cereals) were dumped in Africa, hurting African farmers.

In addition to policy deficiencies and the distortions of world markets, project management units for all five types of agricultural projects circumvented government line agencies. Projects were run by donors and expatriates. Resistance to the projects by staff in government agencies was the reaction. Government capacity was not developed; in fact it was undermined. The enclave projects were not embedded in governments or in indigenous institutions. By the early 1990s the population of expatriates working in African governments and public enterprises exceeded the numbers of European colonial administrators in 1955 (this includes all activities, not just agriculture and rural development). Because the projects were not embedded locally, many of these projects and their services simply disappeared once donor funds dried up and the expatriates went home. It is interesting to note that the Bank's ex-post analysis of these failed projects (World Bank various years) finds significant institutional shortcomings in nearly all cases (Lele 1990, 1991).

Rural development projects often brought serious coordination problems to the country. Each project was independent, with separate administration and donor procedures. Big donors supported big regions within countries; smaller donors supported smaller regions. The United States, Germany, the Scandinavian countries, the Netherlands, France, the United Kingdom, the World Bank, the International Fund for Agricultural Development (IFAD), and the European Union (EU) were major supporters of these projects. Each donor's project was executed independently. Some NGOs supported similar projects, though almost always on a much smaller scale. The projects were, in the aggregate, very expensive, as management and overhead were duplicated in each region. Projects that seemed to be working well in a single region of a country did not work in the longer term for the country as a whole.

There have been some exceptions to the general failure of IRD projects. In Nigeria they have been more successful, although this is in part due to their conversion to the new national services approach discussed in chapter 4. The Nigerian projects are now encountering difficulties similar to those seen in rural development projects elsewhere in Africa. Some IRD projects were transformed into the new approach and were salvaged.

Single crop development projects had the same types of problems. These projects were managed by government parastatals. Production

was costly, and inefficient management practices from the public administration area were applied, rather than market-oriented management. Corruption was often a problem. World Bank public expenditure reviews during this period documented large public sector subsidies to agricultural parastatals. This meant that agricultural marketing and processing drained rather than created value added for African economies. The parastatals often required subsidies from the rest of the economy (through taxes or through repayment of loans required to sustain them by future generations) or assistance from donors (World Bank 1995; Donovan 1996).

There were successes among the single-crop development projects, although often with a curious twist, which should have taught us something about the elements needed for success. For example, cotton projects in West Africa (based on a model developed by the French *Compagnie Francaise pour le Développement du Textile*) were often successful. In this project type, agricultural prices, although fixed by the government, were close to world market levels in many countries (although not all). There was some private participation in the French mother company. Other examples were Côte d'Ivoire rubber (the private sector participated in the rubber company SAPH), Kenya tea (farmers participated in the Kenya Tea Development Authority), Kenya coffee (farmer cooperatives and private companies purchased, processed, and marketed coffee), and private sugar estates in Kenya. Few significant successful commodity projects were owned exclusively by the government (Cleaver 1993; Gibbon, Havnevik, and Hevmele 1993; Jaffee and Morton 1994).

The private sector also had some successes without donor grant or loan assistance. The International Finance Corporation (IFC) invested in some projects. Kenya horticulture, Kenya's East African industry (oilseeds), Ivoirien cocoa plantations, Del Monte pineapples in a number of countries, and Unilever (palm oil and cocoa) in the Democratic Republic of the Congo, formerly Zaire, are among the successful examples.

Public sector agricultural credit projects were a disaster. All public sector credit banks in Sub-Saharan Africa became financially insolvent by the early 1990s, requiring continued donor assistance and government subsidy. In most cases loans were made more often to the political elite and to large farmers than to small farmers, despite the small farmers' better repayment rates. The parastatal banks were generally characterized by high overheads and a poor management culture and were often subject to corruption (Gibbon, Havnevik, and Hevmele 1993; World Bank 1993). The closest to success was the agricultural credit scheme in Malawi, but the difficulty of maintaining that success was enormous. Even here, continuous donor financial injections have been necessary. There are no other exceptions in Sub-Saharan Africa (Morocco's *Caisse National de Credit Agricole* has been highly successful, however).

Large-scale irrigation projects in Africa have had a mixed record. There were a few terrible disasters, such as Kenya's Bura Irrigation Project. Failures in an economic sense were more numerous—examples are Senegal's irrigation projects on the Niger and large-scale irrigation projects in Nigeria and Malawi. There have also been successes, notably Mali's Office du Niger and the Gezira Irrigation scheme in Sudan, until political and economic mismanagement drove the latter country into economic chaos. In general, however, the large public sector irrigation schemes have not been economically viable.

Some Africans have cited the positive experiences indicated above as evidence against condemning past strategy. The argument is that since there are successes—for example, the Office du Niger in Mali—it is not possible to generalize about the failure of large public sector irrigation projects. Similarly, the integrated rural development projects in Nigeria were relatively successful, as was the Benin Borgou Rural Development Project. The problem with this argument is that the number of these successful projects is so limited that present knowledge would dictate extreme prudence, if not reticence, in making investments in new projects following the same model. However, existing successes in the above cases should continue to be supported by governments and donors. Success has been rare enough in African agriculture that it should be cultivated when it occurs, regardless of the model followed.

As these public sector failures mixed with a few successes (and more private sector successes) were occurring in the 1970s and 1980s, the rural population expanded. For survival, people expanded the cultivated land area to produce more. The average rural population growth rate in Africa equaled the agriculture growth rate (2 percent per year). Growth of population and land expansion, not increases in crop yields or in productivity, were largely responsible for the agricultural growth that occurred. Data, some of which are reproduced in the tables, show crop yield stagnation or very slow growth in most countries, while cultivated area expanded at about the rate of growth of agriculture. There were pockets of crop yield expansion, mostly based on better varieties (maize, rice, cotton) combined with fertilizer use (Harrison 1987; Carr 1989; Lele 1990; Vosti, Reardon, and von Urrf 1991; Speirs and Olsen 1992; Doweswell, Paliwal, and Cantrell 1996).

The conclusion following from this experience is that the public sector-managed agricultural and rural development projects widely supported by African governments and intellectuals, the Western academic community, and donors, were fatally flawed in design and execution. This was partly due to factors external to the projects themselves (poor government policy, international prices, climatological constraints, and institutional weakness) and partly to fundamental project design flaws.

In the social sectors the construction of schools and health facilities, without trained and motivated personnel and without supplies, did not succeed in significantly improving levels of rural education and health (Psacharopoulos 1990; World Bank 1994b; Heneveld and Craig 1996). Poorly maintained rural roads and water points were common throughout Africa (Carapetis, Levy, and Wolden 1991; Sharma and others 1996).

4

A Change in Approach

Changes in approach began in the late 1980s and 1990s; but it has been a slow process, based on trial and error and on research.¹

Change in government agricultural policy became an objective of some donors and governments in a growing number of African countries. First, donors supported economic reform, including exchange rate reform, removal of price controls, public expenditure reforms (such as eliminating white elephant projects), and marketing and input supply reform to allow private and cooperative sector participation in a more competitive environment. Private and cooperative banking and financial intermediation were promoted. This process was part of "structural adjustment."

Second, integrated rural development projects began to be phased out by donors and governments, as were public sector agricultural credit projects and large-scale irrigation projects. Commodity projects were continued, often under parastatal management, but with prominence given to efficiency and company restructuring.

Third, a single national agricultural research system and extension system at the country level were developed in many countries and supported by donors and international agricultural research institutes. The two systems were meant to stimulate technology adoption in farmers' fields. Initially, these national programs were government-run, with government departments (line agencies) taking the place of project management units. The participation of the private sector, cooperatives, and NGOs would remain low. Similarly, national veterinary services and national forestry and land management services would be co-financed by consortia of donors and managed by government line agencies.

Fourth, farmers' groups would receive increasing help with input supply management, marketing, irrigation, tree planting, and soil conservation. The Scandinavians and the French were most enthusiastic about this approach, as were some NGOs (Harrison 1987; Gény, Waechter, and Yatchinovsky 1992). Other donors, such as the World Bank, realized only much later the importance of participatory farmers' organizations.

The earliest pilot of what was to become a changed approach was applied to agricultural extension. Kenya saw the first of the new-style agricultural extension projects in 1982 (Bindlish and Evenson 1993). The project was characterized by:

- A time-slice of a national extension program, which coordinated donors.
- Preparation by doing (pilots, testing, and demonstration) in place of expatriate consultant studies.
- Management and supervision by government line agencies. Expatriate advisers have been phased out almost completely. (Few of the twenty-seven extension projects supported by the World Bank now under way in Africa have any expatriate advisers. The projects are managed by existing government institutions instead of project management units.)
- A simple management and institutional framework.
- Expanded Bank staff field presence.
- A cross-Africa network of extensionists, created to share experience and best practice.

In Kenya this approach has worked. Simple technology was adapted by millions of farmers, providing excellent aggregate results in terms of agricultural growth.² A similar positive result has been documented in Burkina Faso (Bindlish, Evenson, and Gbetibou 1993).

Skeptics have questioned whether initial good response from the extension projects can be sustained. Potential problem areas include a lack of new technology available for transfer to farmers, the weakness of agricultural research, and a low-input technology bias of the Bank's model of extension.³

In response, while the problems of agricultural research are a serious medium- and long-term constraint, extension can and does deliver knowledge of both sophisticated and simple technology, depending on the capacity of the particular farmers receiving advice. Farmers able to use more sophisticated advice receive information on higher fertilizer use, farm mechanization, and crop varieties. A second critique is the high purported cost of these programs to government. This is indeed an issue in many countries. Cost containment and cost reduction must become a major goal in the future as these programs are designed to fit within government fiscal capacity.

The other lesson of the Kenyan experience was the synergy between extension and other aspects of the strategy, which was responsible for the good results:

- Economic and agricultural policies were relatively good in Kenya: pricing, marketing and exchange rate policies were "liberal."
- Kenya's government allocated greater expenditure to rural health, education, and roads than did most African governments.

- The private sector was allowed more freedom in marketing, processing, and input supply.
- The cooperative sector flourished.

However, most recently this program has run into significant problems as a result of the government's severe budget squeeze (discussed in chapter 6).

The evolving strategy was articulated in a World Bank agricultural strategy document issued in 1993 (Cleaver 1993). It applied the new philosophy of using government line agencies over project management units, African rather than expatriate management, and a national orientation rather than a regional or commodity focus. The new strategy also included a heavy policy orientation. Economic and agricultural policies were designed to encourage private sector development, market development, reduction of price distortions, and market deregulation. However, the strategy provided little or no direct support to the private sector. In addition to national agricultural extension, research, and policy reform, the following subsectors were proposed as focus areas:

- Building public sector institutions to manage agriculture sector policy and budgeting
- Small-scale irrigation managed by the public sector
- Natural resource management (forestry, parks, public lands, pastoral improvement) by the public sector
- Support to farmers' groups (provided by donors and NGOs)
- Agricultural and rural credit through private and cooperative-owned banks
- National health and education programs (including services to rural areas) managed by the public sector
- Development of infrastructure in national water, roads, and transport programs serving rural areas.

Notes

1. The new approach was only fully articulated in 1993 (see Cleaver 1993; Swegle 1993; IFPRI 1995). The Food and Agriculture Organization of the United Nations (FAO) articulated similar strategies, as did the Canadian and U.S. foreign assistance organizations.

2. For a positive but less enthusiastic view, see World Bank (1996a).

3. The last part of this critique comes from a communication from Chris Doweswell of Sasakawa 2000. Similar criticisms have come, in particular, from French development assistance groups.

5

Is the New Strategy Working?

A qualitative rating of performance on price policy, fertilizer policy, extension, and infrastructure was undertaken for a number of countries. The results are shown in table 1.

The first column in the table reflects an evaluation of the quality of agricultural policy. The second reflects an evaluation of broader economic policy. The most recent assessment (1992–95) shows considerable change, as some countries have progressed and others have regressed, compared with the 1988–92 period.

In tables 2, 3, and 4 the countries listed in table 1 are divided into three groups according to performance on the four key indicators. The countries listed in table 2 performed best, with each country doing relatively well in agricultural policy in 1988–92, and on at least one other indicator. The tables show real (constant price) agricultural growth rates for each country in this better performing group for the period 1988–92. Agricultural growth rates for 1981–87 are shown for comparison.

Agricultural growth rates for this group are relatively strong during 1988–92 for most countries (with some exceptions), and the weighted average growth rate of 3.2 percent per year is satisfactory. Low growth rates for some countries underline the role played by factors such as rainfall, international commodity prices, severe land constraints, and civil disruption.

The medium performers performed well either on policy alone or on two indicators during 1988–92 (table 3). Their agricultural growth rates are much lower on average during 1988–92 than for the top performing countries.

The poor performers performed poorly in both economic and agricultural policy during 1988–92 and well on, at best, one indicator (table 4). As expected, countries doing least well on policy and investment tend to do least well in agricultural growth. Unusually good rains can, of course, overcome some poor policy in an occasional year (as in Chad), but this is an unreliable event.

More recent data were used to see if these patterns continued after 1992. Table 1 includes in the second column an updated assessment of agricultural policy performance through 1995. It shows some countries doing well for the first time in this more recent period while others (which were previously doing well) have deteriorated. Table 5 shows

Table 1. Performance Indicators, Selected Sub-Saharan African Countries, 1992-95

Country	Agricultural policy		Fertilizer policy ^c	Extension policy ^d	Infrastructure policy ^e
	1988-92 ^a	1992-95 ^b			
Benin	x	x		x	
Botswana	x	x	x		x
Burkina Faso	x	x		x	
Burundi	x				
Cameroon					
Central Africa Rep.	x		x		
Chad			x		
Congo, Rep. of	x				
Côte d'Ivoire		x	x	x	x
Ethiopia					
Gabon	x				
Ghana	x	x	x	x	
Guinea	x	x	x	x	
Guinea-Bissau					
Kenya	x	x		x	x
Madagascar	x				
Malawi	x	x	x	x	x
Mali	x	x			
Mauritania		x	x	x	
Mauritius	x	x			x
Mozambique	x				
Niger	x			x	
Nigeria	x		x	x	
Rwanda	x		x		
Senegal			x		
Sierra Leone					
Sudan					
Tanzania	x	x	x	x	
Togo	x		x	x	
Uganda	x	x		x	
Zambia		x		x	
Zimbabwe		x		x	x

x = Country is performing relatively well in the policy area specified.

a. Countries were judged to be performing well in agricultural policy if they either reduced overall taxation of agriculture or raised real producer prices for agricultural exports. The underlying data are in World Bank (1994a), figures 3.3 and 3.4.

b. A qualitative rating, based on recent World Bank evaluations of the economic policy of the country.

c. Countries were judged to be performing well if fertilizer consumption (nutrients per hectare) increased by more than 3 percent per year from 1986 to 1991. (This excludes the Republic of Congo, which suffered a tenfold decline in the 1970s and early 1980s.) There are objections to these data, since fertilizer use is low in nearly all the countries. Although this is true (see the appendix tables), the *rate of increase* is related to the rate of increase of production.

Notes to Table 1 (continued)

d. Based on World Bank project supervision reports on the quality of national extension systems at the end of the period (see also Bagchee 1994).

e. Carapetis, Levy, and Wolden (1991). Kenya was added because of its successful investment in rural roads since 1991.

Source: Derived primarily from Cleaver and Donovan (1995), table A10, with a policy update for 1992-95.

Table 2. Agricultural Growth Rates for Best Performers on Policy Variables among Selected Sub-Saharan African Countries

(average annual percentage change)

Country	1981-87	1988-92
Burundi	3.1	2.5
Central African Rep.	3.4	-0.6
Congo, Rep. of	2.3	-0.4
Côte d'Ivoire	-5.7	2.3
Gabon	1.7	-1.2
Madagascar	2.6	2.0
Mozambique	-0.4	0.6
Zimbabwe	1.9	-2.1
Weighted average	-1.7	0.9

Note: Growth rates represent agricultural GDP in constant prices.

Source: Appendix table A1.

Table 3. Agricultural Growth Rates for Medium Performers on Policy Variables among Selected Sub-Saharan African Countries

(average annual percentage change)

Country	1981-87	1988-92
Cameroon	0.5	-5.8
Chad	2.2	5.6
Ethiopia	-2.2	1.0
Guinea-Bissau	4.2	-2.1
Mauritania	0.9	0.1
Senegal	2.8	-0.2
Sierra-Leone	2.7	-2.9
Sudan	1.3	-0.5
Zambia	8.0	-10.4
Weighted average	0.9	-1.9

Note: Growth rates represent agricultural GDP in constant prices.

Source: Appendix table A1.

Table 4. Agricultural Growth Rates for Poor Performers on Policy Variables among Selected Sub-Saharan African Countries

(average annual percentage change)

<i>Country</i>	<i>1981-87</i>	<i>1988-92</i>
Benin	6.1	4.9
Botswana	-4.6	2.2
Burkina Faso	2.6	0.8
Ghana	0.8	1.6
Guinea	n.a.	3.3
Kenya	2.5	1.6
Malawi	3.0	-1.8
Mali	0.0	2.6
Mauritius	3.4	9.0
Niger	2.2	n.a.
Nigeria	3.8	4.2
Rwanda	-0.6	1.8
Tanzania	4.3	5.0
Togo	6.8	2.0
Uganda	0.2	3.3
Weighted average	2.6	3.2

Note: Growth rates represent agricultural GDP in constant prices.

Source: Appendix table A1.

Table 5. Agricultural Growth Rates for Good Performers on Policy Variables in Both Periods among Selected Sub-Saharan African Countries

(average annual percentage change)

<i>Country</i>	<i>Agricultural growth rate, 1992-95</i>
Benin	4.1
Botswana	1.1
Burkina Faso	4.0
Ghana	1.7
Guinea	4.3
Malawi	1.5
Mali	2.0
Tanzania	5.5
Mauritius	-0.2
Uganda	3.7
Unweighted average	2.8

Source: Appendix table A1.

1992–94 growth rates for countries that performed well in both agricultural policy and investment in both periods.

In five of these countries, agricultural growth has remained strong. Performance worsened in Botswana, Malawi, Mauritius, Mali, and Ghana. Despite sound policy, these countries did poorly, underlining the riskiness of agriculture because of commodity price changes, rainfall variation, and factors other than the indicators that affect agriculture. In Mauritius agriculture is highly dependent on world sugar prices. Botswana has severe rainfall and water constraints. In Ghana fertilizer supply stagnated, and agricultural policy was not as good as overall economic policy. Mali is subject to periodic drought.

Of the countries that turned economic policy around in 1992–95 (table 6), only in Mauritania did the agricultural growth rate show a strong rebound. Agricultural growth continued to be poor in the other three countries, indicating fundamental constraints on agricultural development. The other nonpolicy conditions for agricultural growth were for the most part not in place in these countries. However, Côte d'Ivoire's agricultural growth rose to 5.1 percent in 1995, suggesting that it is overcoming these other constraints. Zambia, however, has performed even worse recently, largely as the result of a 1993–94 drought and slippage on the macroeconomic policy front.

Aggregate agricultural growth rates represent supply response but do not provide a descriptive sense of what is happening on the ground. The most prominent example of supply response is that of the cotton sectors of francophone West African countries, responding to recent policy reform.

In *Benin*, cotton production has expanded, largely as the result of management restructuring and commercialization of the cotton marketing and processing enterprise (SONAPRA), resulting in efficiency gains in ginning and improved cotton marketing. Better input supply, extension advice,

Table 6. Agricultural Growth Rates for Improved Performers on Policy Variables among Selected Sub-Saharan African Countries

(average annual percentage change)

<i>Country</i>	<i>Agricultural growth rate, 1992–95</i>
Côte d'Ivoire	0.9
Mauritania	3.5
Zambia	-1.6
Zimbabwe ^a	-1.0
Average	0.5

a. Data are available only for 1992 and 1993.

Source: Appendix table A1.

investment in animal traction, and public investment in roads reduced costs to cotton growers. Production has doubled since 1993.

In *Mali*, producer prices for cotton were linked to world prices. With devaluation of the currency (the CFA franc) in January 1994, producer prices and farmers' share of ginning profits were increased substantially, stimulating a huge cotton production increase.

Mozambique's cashew nut exports expanded rapidly during the 1994–96 period, with significant increases in producer prices due to a reduction in export taxes. Kenya's agricultural growth increased with exchange rate reform, free market determination of price and marketing, and free private entry into production and export. Uganda's coffee sector has been expanding rapidly since 1992, with private sector entry into agricultural exports, liberalization of coffee prices, removal of coffee export taxes, dismantlement of a coffee stabilization fund, and lifting of foreign exchange controls.

Conclusions from the Data

Many factors affect agriculture: weather, world prices, war and civil strife, as well as economic policy, agricultural policy, and the quantity and quality of agricultural investment and investment in rural development. Therefore, agricultural growth rates can be negative even when policy is sound. But the data show that some countries are consistently succeeding among the group which has gone furthest in implementing the improved strategy set out above. These include Benin, Guinea, Mali, Tanzania, Uganda, and, up to 1992, Nigeria. (Nigeria represents a case of a good agricultural policy performer, with satisfactory agricultural growth, regressing to poor policy performance and low growth.)

Some countries that are implementing many parts of the strategy are generally doing well but are not consistent. These include Botswana, Côte d'Ivoire, Kenya, Mauritius, Togo, and Zimbabwe. It is, however, apparent that even better performers find it difficult to sustain agricultural growth rates of 4 percent per year or more. Recall that such high agricultural growth rates are needed to have a significant impact on economic growth and poverty reduction.

Also lying behind the data for the good performers is a conclusion about agricultural projects. The projects (or, more appropriately, the programs) that increasingly mirror the new strategy are more successful. The number of problem projects for the Bank are less in these more successful countries than for other countries. In fact, many of the World Bank's failed projects are located in states such as Burundi, the Democratic Republic of Congo, Nigeria, Rwanda, and Somalia.

The numbers also are a reminder of the heterogeneity in Africa's agricultural situation. Agricultural conditions in the Sahel, for example, are very different from those in the East African highlands and in the forest areas of central Africa. Major differences include land availability, rainfall, access to irrigation water, forest cover, importance of livestock, and soil type. These differences affect mainly the agricultural content of extension messages, research priorities, investment priorities (for example, the importance of livestock or irrigation), and natural resource management programs. The differences make it necessary for every country to have its own strategy, particularly with respect to agricultural content. A general strategy for Africa is not a finely tuned guide for each country. The differences between countries also affect the outcome of policy and investment for agricultural growth. Growth will vary from one setting to the next. However, the experiences of the past with respect to policy, organization, and the basic approach of various agricultural services are important to consider in the development of country-level strategy.

6

Weaknesses in the New Strategy

Weaknesses in the new agricultural and development strategy have become increasingly apparent in Africa. One of the most debilitating weaknesses has been the widespread failure of structural adjustment to create an enabling environment healthy enough to stimulate private investment in the rural sector (Gibbon, Havnevik, and Hevmele 1993; World Bank 1994a, 1995, 1996c). Donors have exacerbated the situation by working independently or through government, without establishing good instruments to support the private sector. Donor loans and grants through government to the private sector, particularly to small farmers, have not worked well. This is because the government intermediaries are subject to bureaucratic inefficiency.

One alternative to direct donor and government assistance to the private sector is to use private banks, cooperative banks, or microcredit schemes as intermediaries for donor assistance to the private sector. The problem with this strategy is that private banks have shown little interest in smallholder farmers, small traders, or microenterprises in rural areas. Cooperative banks and microcredit schemes are too small to serve many farmers, although they work better. As donors, including the Bank, reacted to the failure of parastatal credit banks by eliminating funding for them, alternative financing vehicles were not developed fast enough to provide for the credit, banking, and savings mobilization needs of the rural sector.¹ In the absence of private sector interest and effective non-government credit schemes, many donors compromised with the new strategy, reverting to the support of government-owned credit banks and marketing and processing enterprises, with poor results similar to those of the past.

Although NGOs are increasing in importance, some are *repeating the past errors of the donors*. These errors include expatriate management, which bypasses African management and does not build African capacity, and small-scale projects with autonomous management, resulting in hundreds of projects that are unmanageable and unsustainable without the NGOs. The Bank's agricultural strategy failed to realize the importance of NGOs and bring them into the strategic discussions, project investments, and so on. Conflict with NGOs, sprinkled only rarely (although increasingly) with cooperation, was the result.²

The poorest are often ignored. National programs and price increases often do not reach subsistence farmers, who live in remote areas and produce

low yields (Cleaver and Donovan 1995).³ Development is bypassing many of the poor. The poorest people in rural areas are:

- The old and disabled
- Women whose husbands work elsewhere (men often migrate off-farm for work)
- Those in remote areas not well served by infrastructure
- People in low-rainfall areas.

The needs of poor women are most often ignored. Traditionally, most agriculture projects have not accounted for lack of access to credit, land, and extension advice, or for the additional time constraints imposed by family maintenance. An exception has been in some of the extension projects that have responded to women's technology needs (World Bank 1989; Cleaver and Schreiber 1994). Nutritional needs and the demand side of the food security equation (as opposed to the production of food) have been relatively neglected.

Although the new strategy identified the building of African capacity to manage as an important element, *efforts to build such capacity were most often half-hearted*. The African capacity that exists often continues to be ignored. Many donors persist in financing expatriates to manage "their" projects. There are few good models of donor interventions that build capacity, although the national extension programs come closest. This lack of clarity is related to difficulties encountered in reforming the civil service (excess employees, poor pay, and poor training). It is also related to donor failure to work in partnership with NGOs and to foster participation by rural populations in project design and implementation. Without development of African capacity at all levels, from farm to government, many donor and government projects remain badly managed and excessively dependent on expatriates. An effective capacity-building strategy has yet to be implemented, although several are on the drawing board (Dia 1996).⁴

The decline in donor support to rural development projects and integrated commodity projects was accompanied by a *decline in investment in rural health, education, and infrastructure* facilities. National health, nutrition, education, and infrastructure programs were not developed fast enough to serve rural areas and counter the decline in donor support. The result was a deterioration in rural health, education, nutrition, and infrastructure services in most African countries, which continues to this day. One indicator is the decline in primary school enrollments seen in the latest World Bank statistics for Sub-Saharan Africa (World Bank 1997). There is no indication of nutrition improvement (see FAO statistics on caloric intake).

The natural resource management projects were not sufficiently effective in retarding the *high rates of soil, water, forest, and wildlife degradation*

affecting most of Africa. (See appendix tables; Free University 1992; Sharma and Feder 1992; Jolly and Torrey 1993; Keck, Sharma, and Feder 1994; WRI 1994; and Badiane and Delgado 1995.) The projects are still too limited in scope and ambition to have much effect on these widespread problems. In addition, the causes of natural resource degradation are complicated, involving the persistence of poverty (the rural poor mine the environment for survival); maintenance of farming techniques that deplete the soil; unregulated logging; the difficulty of controlling poaching; and land tenure systems that often provide no protection for individual investment in the land. Finally, governments have not had the capacity to manage natural resources. Because many natural resource management projects are managed by governments despite weak capacity, and often in conflict with local communities, the likelihood of failure is high. For these reasons, natural resource degradation continues (English, Tiffen, and Mortimore 1994).⁵

Most important, the *lack of government commitment to agricultural development* in many African countries greatly inhibited the quality and quantity of donor efforts. Flagging commitment also caused sustainability problems for public investments and discouraged private investment in agriculture. Governments often did not provide the operation and maintenance funds needed to sustain investments in agricultural research, extension, rural infrastructure, irrigation, environment, water supply, and public marketing and input supply. This is the present fate of the Kenya National Agriculture Extension program, which began so well. The government's budget squeeze is starving the program. Donors financed such investments even when it was clear that government commitment was lacking (that is, with little selectivity) and government operating budgets insufficient. The result was as expected: even potentially good investments were not sustained upon the departure of the donor. A related problem is that without government commitment, donors continued to substitute for government commitment by financing and managing their own donor agriculture projects. These efforts remain uncoordinated, supporting an unstructured mixture of extension systems, credit systems, and marketing systems in each country. Each project tends to reflect the donor's own views rather than government views or national needs.

All of the above problems resulted in part from *insufficient analysis of constraints on rural development*, a scarcity of quality support for development of government strategy, and lack of selectivity by donors in choosing their partners.

There is variation in the severity of the above problems, contributing to the variation in agricultural growth results. Many projects work well, especially in the countries doing relatively well. But all countries suffer from most of these problems to some extent (Lele 1990; FAO 1995; Donovan

1996). This inhibits the achievement of higher growth rates in all countries.

Notes

1. An interesting assessment has been made by the staff of the Consultative Group to Assist the Poorest (C-GAP), which supports microcredit development. C-GAP staff found in 1996 an absence of viable microcredit schemes in Africa to which support might be offered.

2. Chris Doveswell of Sasakawa 2000 expresses some skepticism that the NGO he represents will be able to work effectively with the Bank in the long term. This cooperation is being tested in Burkina Faso, Guinea, Mali, and Uganda, where the World Bank and Sasakawa 2000 are collaborating.

3. The analysis was based on donor-financed poverty assessments undertaken in fourteen African countries.

4. The Bank is supporting the development of an African Capacity Building Initiative by Africans. The United Nations Development Programme (UNDP) is also designing capacity-building strategies.

5. One place where improvement occurred was in Machakos District, Kenya.

7

Adjustments Needed in the Development Strategy

The critical subsectors requiring investment, operation, and maintenance remain those identified at the end of chapter 4. The data show that economic and agricultural policy reforms of the type recommended by the Bank (market liberalization) stimulate growth when combined with investment and efficient management of agricultural extension, fertilizer, and rural infrastructure. Donor and government programs should rely more on African management and less on expatriates, as stipulated in existing agricultural strategies.¹ Programs should also be national in scope. However, for the reasons enumerated above, this existing strategy is necessary, but not sufficient. What more needs to be done?

Government commitment and strategy. Solving the fundamental problem of the lack of African government commitment to agriculture will require expanded efforts in information, education, and communication. These efforts should be undertaken by interested Africans. The Global Coalition for Africa (GCA) is beginning to promote such an effort, as is the Sasakawa 2000 project. To help convince skeptical government leaders, GCA supports a group of African agricultural specialists and several government leaders who are committed to African agricultural development (CMA/WCA 1993).²

National agricultural and rural development strategy. Each African government should develop a comprehensive agricultural and rural development strategy that can be supported by the government, the private sector, NGOs, donors, and, most important, the country's own farming and agricultural community. The quality of the strategy, and of its execution, will demonstrate commitment, or lack of it, by the nation and its partners. The strategy should be developed at the national level, with participation by the affected communities. All sectors involved in rural development should play a part: education, health, nutrition, water, roads, agriculture, industry, and finance.

First, donors need to work together to develop a joint agricultural and rural development strategy for Africa that supports the emerging African strategies, such as the model recently developed with the support of the Global Coalition for Africa (GCA). Second, donors should be more selective in their assistance, providing more to countries whose

governments demonstrate commitment to rural development through sound strategy, policy, and adequate allocation of local resources. Fewer funds should go to rural development in countries that fail to demonstrate commitment. Over time, more effective governments will manifest their increased effectiveness by increased interest in rural development, sensible policy, and more investment. Donors could then expand assistance to such committed governments.

Private sector. It is necessary to develop more effective instruments of donor support to private sector farmers, marketing and processing companies, and banks. These instruments do not need to be part of agricultural projects but could be part of direct support to private enterprises that process, market, and provide savings and loan services to agriculture. This donor support would stimulate greater private equity investment in these activities as well. Private sector projects in rural microenterprise development, rural savings and loan, and private marketing and processing need focused attention. Donor institutions like the World Bank's Multilateral Investment Guarantee Agency (MIGA) and the IFC, France's Proparco, Britain's Commonwealth Development Corporation (CDC), Germany's Kreditanstalt für Wiederaufbau (KfW), and the European Investment Bank already possess the instruments to expand support to such enterprises. Bilateral donor grants can be helpful, as could guarantees by the World Bank. World Bank lending is unlikely to be appropriate in many cases because it must transit through government. However, some World Bank lending to private enterprises, guaranteed by governments, is possible. The Bank can also support business advisory services, which in turn support private agricultural marketing and processing.

As a prerequisite for private sector investment, effective policy reform programs are needed to create the elusive "enabling environment." Such an enabling environment will encourage private sector investment in farming, marketing, processing, and input supply. The traditional structural adjustment elements of liberalized price, exchange rate, marketing, and credit systems represent only one element of this enabling environment. More is needed, such as land tenure reform, legal protection of women (credit and land), an effective legal system in rural areas, decentralization of administrative decisionmaking to local (including rural) areas, and freedom of association for cooperatives and farmers' groups. These broader policy reforms must be included as components of structural adjustment, sector adjustment, or sector investment projects. Without them, private direct investment (foreign and local) will have difficulty expanding into rural industry and farming.

NGOs, donor coordination, and sector investment programs. African and international NGOs are expanding in number in many African countries, coincident with political opening in many of these countries. Some donors have

moved quickly to support NGO projects, while at the same time financing public sector-managed projects. A better idea for supporting public sector services (in addition to private sector investment) would be for African governments to invite NGOs to join donors and governments in supporting public sector expenditure programs in agriculture. These sector investment programs might have a policy component (as above) and support some combination of national services for agricultural extension, research, livestock, forestry, soil conservation, agricultural planning, land tenure, and irrigation. In countries with very strong capacity, a single sector investment operation combining all these activities could be mounted. Government would lead, and the donors and NGOs wishing to support agriculture would co-finance. There are two advantages to this plan. First, it avoids the large number of donor-inspired agriculture projects, each with its own separate services. Second, by avoiding donor- and NGO-inspired duplication, African management capacity could be more efficiently utilized and expatriate managers reduced to a minimum and eventually eliminated. Government commitment would be tested through its leadership of the national sector program. Subsequent donor support would be pooled for the ongoing public expenditure program in agriculture.

Early experience with sector investment operations (the first is in Zambia) indicates that they are difficult to manage and that many donors and NGOs do not wish to give up their independent projects. Furthermore, governments too readily add ineffective programs; if agricultural policy is weak, the programs do not have the desired outcome. For most countries less ambitious subsector programs may be more appropriate, in which the public expenditure program in agriculture is broken down into a half dozen component parts, each of which is financed separately. Examples of such programs include agricultural extension, research, forestry, land tenure, irrigation, and planning. Though more numerous than a single agriculture sector program for each country, this larger number of subsector programs would avoid the typically hundreds of separate and largely ineffective and competing donor projects. Even for subsector programs, however, agricultural policy will have to be sound if outcomes are to match ambitious objectives. Where policy is weak, pilot projects, combined with intensive policy work, might be the best intervention.

An issue for sector investment programs is the role of the private sector. The private sector should participate in planning, monitoring, and evaluating the program. However, private sector investment will remain outside the public expenditure program. Similarly, representatives from the health, education, banking, and infrastructure sectors should participate in the design, monitoring, and evaluation of agriculture sector programs. But investments in these nonagricultural rural activities would be organized outside the agriculture sector investment programs.

Rural infrastructure, health, and education. Similar to their treatment of agriculture, donors and governments need to include rural infrastructure, health, and education within national programs. There is no case for including these activities in agriculture or rural development projects, since such an approach has failed in the past. But national education and health programs generally allocate too little to primary facilities and rural areas. Rural roads and rural water are also neglected. Donors should focus their resources on those sectors where relevant investment programs and government policies are most sensible and where governments are most committed. The sector investment approach represents the best strategy, as long as it is modified where government capacity is weak.

Natural resource management and the environment. Experience thus far suggests that an expanded and higher-quality effort is needed to arrest deforestation and soil and water degradation, as well as destruction of biodiversity more generally. There are starts with forestry management (as opposed to logging) projects, natural resource management programs in the Sahel, environmental action plans containing important rural actions, rural water management projects, and, most important, research and extension programs that include soil and water conservation and tree planting. Other than research and extension, most activity is in the preliminary stages and on a relatively small scale. Impact is still difficult to assess, and the problems of environmental degradation are deepening in most countries. A review of the experiences thus far would be worthwhile, to identify the interventions that work best and apply them on a broader scale. The number of pilot projects can be greatly expanded, in partnership with governments, NGOs, and other donors.

The joint FAO/World Bank soil fertility initiative is just getting off the ground, foreseeing support for a combination of efforts that:

- Develop extension messages to farmers for better soil and water management techniques
- Expand the technical frontier through research on soil fertility problems and solutions
- Support public investment in soil and water conservation and rehabilitation works in fragile public lands
- Reform the system of land tenure.

These efforts must be enacted on a large scale. Associated actions that will help are general education that includes the teaching of conservation to schoolchildren and population projects to reduce pressures on the land caused by rapid population expansion (Harrison 1987; Repetto 1988; Free University 1992; Gény, Waechter, and Yatchinovsky 1992; Jolly and Torrey 1993; Cleaver and Schreiber 1994; Keck, Sharma, and Feder 1994; Paarlberg

and Breth 1994; Ilkpi and Olayemi 1995; Bruce and Migot-Adholla 1996). It is now apparent that management, or participation in management, by local communities (forest dwellers, irrigation water users, pastoralists, farmers, hunter-gatherers) will be critically important for natural resource management projects.

Capacity building and farmer participation. The building of African capacity to manage is an objective that extends beyond the needs of the agricultural and rural sectors. Management of government services, private marketing and processing, and farmers' fields all require strengthening. Major instruments for capacity building include better and more effort toward using existing African capacity rather than substitution by expatriates; better training of African managers and staff; more use of nonpublic institutions in agriculture projects; privatization (which incorporates Africans outside of government); and civil service reform. Farmer participation and extension efforts to strengthen farmer capacity are equally important. Fostering the participation of farmer beneficiaries in project development and execution will be critically important (Dia 1996).

Reviews of Bank agriculture projects find, first, that project training is often the least well defined component of a project. Second, there are many nonformal organizations in African rural society: village associations, women's associations, savings and loan associations, and farmers' cooperatives, which can take part in projects or execute parts of projects. The public sector can be divested of many activities, both to these rural organizations and to private entrepreneurs (Jaffee and Morton 1994). This reform will allow government to focus on the essential public services such as extension, research, forestry, livestock development, and planning. For these essential services, general civil service reform is often needed. This would include a reduced public sector work force that is better paid and maintains a clearer management and supervisory structure (such as that provided by the training and visit system of extension). Pilot projects need to be undertaken in which management of project services is placed in the hands of local communities, villages, or other groupings (pastoral associations, water user associations, women's groups, and cooperatives).

Helping the poorest of the rural population. Although the above additions to the strategy should help in assisting more people in the rural sector, the extreme poor will benefit less or, in some cases, not at all. Dealing with this problem will require targeting of agricultural, education, health, and nutrition services to poor areas and to poor groups. The objection to targeting is an economic argument. The efficiency of providing infrastructure, health, education, and agricultural services to poor areas and to vulnerable people is often portrayed as having high costs and low payoffs. For example, regions that are physically isolated are most costly

to serve. Also, the disabled are unlikely to reap enough from services to justify expenses in an economic sense. This objection needs to be investigated in each case and will no doubt frequently prove to be true. Safety nets for the rural poor will need to be articulated in these cases, where lower-return investment is made to achieve social rather than economic objectives. These safety nets might include grant funds for self-help and local infrastructure or marketing projects, food for work, and labor-intensive public works. Nutrition components should be added to health projects. In cases of extreme suffering due to drought or war, direct food distribution will often be necessary.

The application of the principles discussed above to the basic strategy will result in a change in each element of the strategy. (The proposed changes are indicated by italics.)

- National agricultural extension *with participation by farmers, NGOs, and the private sector and with closer attention to fiscal sustainability*
- National agricultural research *with better links to farmers' needs at one end and to international research at the other*
- Agricultural policy reform and institution building *with more focus on land tenure, decentralization of the public administration, overcoming of constraints on rural women's participation, and reform of the legal system*
- *Farmer-managed* small-scale irrigation
- Expansion of natural resource management programs with *more farmer and community management*; support for national water, forestry, and soil fertility programs
- *Support to farmers' groups to mobilize participation by farmers and especially by women's groups in project preparation and implementation*
- *Direct support for private sector marketing and processing by equity investment arms like IFC and MIGA*
- Agricultural and rural credit through rural-based *private and cooperative-owned banks which mobilize savings, use market-determined interest rates, and undertake serious loan recovery efforts*
- Expansion of national health, education, population, and nutrition programs that include services to the rural population, and *a focus on primary services*
- Development of infrastructure in national water supply, rural roads, and transport programs, each serving rural areas *with participation by the private sector*
- *Use of extension, farmers' groups, credit, social services, and policy reform to deal with women's issues*
- *Safety net for the poorest*
- *Capacity-building efforts in all projects and programs.*

All of the above are based on the government's agricultural strategy, operationalized through sector investment and policy programs, with monitoring and evaluation built in.

In summary, government programs should be made explicit in strategies and prepared in a highly participatory manner. Donors can assist with analysis and identification of best practice from elsewhere. Analysis of the strategy's impact on the poor and women will need attention. Similarly, monitoring and evaluation require strengthening for both projects and overall strategies. Although investment costs have not been estimated (it is an impossible task), they will be much higher than present levels of government, donor, and private investment.

Notes

1. Such as those proposed by the World Bank in 1993 (Cleaver 1993), IFPRI, Sasakawa-Global 2000, the FAO, and other donors (Canada and USAID). The proposals here benefited from the thinking of agricultural staff in the World Bank and from a draft Bank-wide agricultural strategy (World Bank 1996b).

2. Baba Dioum of Senegal organized the West African Conference of Ministers; Professor Mandivamba Rukumi of the University of Zimbabwe and the permanent secretary of agriculture of Zimbabwe have organized agricultural strategy on a regional basis for eastern and southern Africa.

8

The Role of the World Bank

The World Bank is the largest donor to African agriculture, infrastructure, health, and education. Consequently, it will have a comprehensive role in supporting the strategy. Consistent with the above proposals, certain parts of the Bank strategy would be continued and other parts modified. The subsectors that the Bank will support will remain the same, although with a clearer statement of responsibilities by technical units outside of agriculture. The subsectors to which the Bank will provide support in Africa, along with the modification in approach to respond to the problems identified above, include:

- National agricultural extension
- National agricultural research
- Agricultural policy reform and institution building
- Small-scale irrigation
- Natural resource management
- Support to farmers' groups
- Support for private sector marketing and processing
- Rural financial intermediation
- National health and education programs
- Development of infrastructure in national water, rural roads, and transport programs, each serving rural areas.

The Bank will be more selective in targeting countries for rural development programs, focusing on those that demonstrate commitment to appropriate agricultural policy and investment. The Bank will assist such countries in developing comprehensive agriculture and rural development strategies that include the elements listed above. These strategies should be developed in a participatory manner, involving government, farmers' groups, NGOs, and the private sector. The Bank's country strategy should derive from this exercise. Analysis of impact on the poor and on women would be incorporated in Bank assistance for the preparation of each strategy.

The Bank will expand its information, education, and communication initiatives to help African governments generate widespread commitment by their citizenry. The Bank will support regionwide African efforts such as that by the GCA, Global 2000, the West African Conference of

Agricultural Ministers, the Eastern and Southern Africa Conference, and other institutions to mobilize commitment to agriculture within Africa.¹ The Bank will support the GCA's effort to create an Africawide council for agricultural development led by prominent Africans. These efforts will seek to develop a donor consensus as well.

Bank finance will increasingly be directed toward national sector or subsector investment programs. Each of the areas identified at the beginning of this chapter might be the object of a subsector operation or could be combined into one or more sector operations. These would contain both policy content and financial support for public sector expenditure in the agricultural subsector of interest or, in some cases, the entire sector. Governments would lead the operation, donors and NGOs would be invited to participate, and the national agricultural and rural development strategies would provide the framework. In order to remain manageable and avoid diluting its resources, the Bank would focus its agricultural work on about five of the above agricultural subsectors in each country of concentration, unless local capacity proves sufficient to combine one or more broader sector investment operations. In most countries the institutional capacity does not yet exist for comprehensive agriculture sector investment programs. Therefore government strategies will be supported through subsector programs and pilot projects.

Through well-articulated country assistance strategies, the Bank would ensure that national education, health, nutrition, transport, water, and economic policy programs provide support for rural and agricultural development. To ensure adequate support, the participation of agricultural staff in the design of these programs will be necessary. However, staff working in the sector concerned would be responsible for the Bank's intellectual contribution to these nonagricultural components of rural development.

The Bank's affiliates, the IFC and MIGA, will expand their investment in agroindustry, agricultural marketing, and farm input supply. Pilot projects will be launched to support a broader variety of private and cooperative savings and loan institutions that serve rural areas (as well as urban areas). Microenterprise and microcredit development in rural areas will be supported by C-GAP. Agricultural development requires the involvement of the entire World Bank group.

Natural resource management, forestry, and water projects will be evaluated to identify best practice and poor practice. The stock taking will conclude with proposals for prototype projects that can be replicated widely. The coordinating group, which manages the Bank's Soil Fertility Initiative, will oversee this effort. Natural resource management projects will incorporate more beneficiary participation in preparation and management; community development efforts; and local ownership of land, water, forests, and wildlife. This will result in a

shift of the management of natural resources from being an exclusively government responsibility to being a shared responsibility with local communities and individuals. The soil fertility action plan will be implemented; under this plan soil fertility issues in focus countries are addressed through a combination of sector operations, research and extension programs, and natural resource management projects. The Bank will support national water development plans as part of the United Nations Special Initiative for Africa.

All ongoing and proposed Bank-financed agriculture projects would be reviewed by the Africa Region's capacity-building team to identify changes that would both enhance the positive impact on using and developing African capacity and eliminate activities which undermine that capacity. Likely components include replacement of expatriates with African experts, clearly defined training programs, use of nonpublic institutions to execute project and program activities, recruitment of Africans from outside government service, use of local NGOs to manage project components, and civil service reform piloted in the agriculture ministry.

A participatory preparation and implementation plan involving farmers will be developed for every agriculture project supported by the Bank. In Africa a particularly promising project management system will be introduced, based on an approach pioneered in Brazil. This approach features an investment fund for the use of local communities that add their own resources. Women's issues will be incorporated in all these plans. Agricultural extension, natural resource management, savings and loan associations, and policy reform will be the focus for introducing and emphasizing the role of women. Beneficiary assessments and client consultation will become important tools.

The existing agricultural portfolio of the Bank will be restructured to reflect the above strategy. Poorly performing projects would be either drastically restructured or canceled.

Safety nets for the poorest would be established for the most destitute among the rural and urban populations. The preparation and supervision of safety nets are specialized activities, best handled by specialized staff in the World Bank Africa Region's Institution and Social Policy technical group. This activity would not be an area of agricultural focus.

The World Bank Group would more actively support the worldwide liberalization of agricultural trade and discourage inefficient industrial country agricultural policies that reduce African export markets.

The World Bank will monitor and evaluate progress of its strategy in each African country using standardized performance indicators. Data will be maintained in the "Live Data Base" managed by the Africa Region of the Bank. Data for selected performance indicators are shown in the appendix tables. Best practice will be identified and shared with staff, donors, and borrowers. Through the Region's Best Practice System, a

knowledge network will be created. The impact of activities on the poor and on women would always be assessed and modifications made in plans, where necessary, either to mitigate harmful effects or to obtain positive effects. Tradeoffs would be assessed between investments and policies that maximize rural income growth, versus those maximizing poverty reduction.

The World Bank would thus focus on the more promising countries and the most promising agricultural subsectors. The Bank would also help mobilize assistance for nonagricultural investments in rural areas that are critical to agricultural and rural development and poverty reduction. The Bank will select four countries for intensive and immediate implementation of the strategy (Guinea, Malawi, Mali, and Uganda). Application of this strategy will require a significant expansion in Bank lending to agriculture and to other rural development services.

Note

1. These two conferences have published subregional agricultural strategies compatible with what is proposed here.

9

Issues Raised by African Government Leaders and NGOs

Many of the issues raised by Africans and NGOs during discussion of this report have been identified above—notably, the need for rural financial intermediation, the negative impact of industrial country agricultural policy and protection on African agriculture, and the observation that some projects of the integrated rural development and commodity types worked well. Additional discussion issues follow.

Urban Bias Is Exaggerated

One criticism states that the report makes too much of the urban bias in public expenditure. These critics point out that rural-urban linkages are important. Towns and cities serve as major markets for cash sales by farmers, as collection points for marketing of both outputs and inputs, as centers in which larger secondary schools and provincial hospitals serving rural areas can be established, and as centers for local administration. Many farm families have members working in towns and cities and returning investment funds to the farm.

All of the above observations are correct. However, it is still the case that most of the poverty assessments undertaken by the Bank in Africa have concluded that public expenditure programs and price policy have greatly favored urban areas, and larger cities in particular. This may contribute to Africa's high rate of urbanization, the highest in the developing world. But since it is true that the urban and rural sectors are linked, how does this affect rural development strategy? One way is in the distribution of public investment directed to urban areas between large cities and secondary towns and cities. In much of Africa, the rural sector would benefit from greater public expenditure on secondary towns than on the large megacities because of the former's importance to the rural economy. Rural areas have an interest in efficient urban renewal services as well.

The Strategy for Fighting Rural Environmental Deterioration Is Unconvincing

An important criticism of the strategy claims that it does not say enough about the rural environment.

In defense of the strategy, it should be noted that the content of rural environment strategy will vary significantly from country to country. In the Sahel the main problems are soil degradation on relatively low-rainfall farms in pastoral areas and on hillsides, along with poor water management (both river water and groundwater, as well as farmer management of rainwater). In the tropical forest areas the major problems involve poor management and conservation of natural forests, dwindling supplies of fuelwood and building material, lack of biodiversity conservation, and poor fertility management on farmers' fields. Rainwater for farming is abundant, but soils tend to be poor. In the East African highlands, problems relate to high-density population settlement and the need for an intensified agriculture using organic (compost) and inorganic fertilizer, high-yield seeds and livestock, and better farmer management of soils and water. In the coastal zones of West Africa the issues are similar to those in the East Africa highlands, although the agricultural environment and types of crops differ (see World Bank 1996d).

Generally, the intensification of agriculture is good for the environment in Africa because it permits farmers to increase their incomes and farms to support more people without opening up new farmland in environmentally sensitive areas such as forests, wildlands, and pasturelands. Soil and water conservation can be practiced on-farm, as can afforestation. But this is not enough. Better management of the commons (forests, rivers, pastureland, and parks) will be necessary. Experience shows that the most important missing factor is incentives for local populations to participate in the management of these common and public property resources. If people have no such incentive, they will move into these areas, converting them to open-access lands for exploitation without efforts to conserve. Incentives can include salaried employment in these areas, turning over areas for community use and management in an agreed sustainable manner, and other participatory schemes.

These efforts should be complemented by keeping infrastructure (especially roads that bring settlers) out of the most sensitive areas and by a scale increase in natural resource management programs. There are examples of good pilot projects.

Fertilizer Subsidies Are Needed

Several African participants indicated that public distribution of subsidized fertilizer will be necessary to increase fertilizer use. The low levels

of fertilizer use in Africa are claimed to be an extremely important element in low crop yields.

It is true that fertilizer use is extremely low and will need to increase as part of a crop intensification strategy. This is why fertilizer use is given such prominence in this book. But public sector distribution of subsidized fertilizer has been a significant part of traditional African government and donor agricultural strategies in Africa. The fact that fertilizer use is still so low is a testimony to the failure of this approach. Subsidies are burdens on the public treasury and serve largely to reduce costs to farmers, thereby stimulating demand. The problem with fertilizer use has been more on the supply side, and subsidies cannot remedy this, since additional demand is unhelpful when supply is already constrained. Government distribution systems have been unwieldy, often resulting in the wrong fertilizers being distributed at the wrong time and captured by those well enough connected to obtain it. Corruption in distribution has been common.

A better approach would concentrate on privatizing the import, manufacture, and distribution of fertilizer. There are examples of successful development of private sector fertilizer distribution. (Malawi is the most recent example.) Techniques to heighten the impact of privatization include removing licensing and foreign exchange rationing from fertilizer imports, eliminating subsidies, redirecting public funds to extension support to farmers, assisting new distributors to become established, and constructing roads.

Regional Integration Is Underemphasized

Several critics indicated that regional economic integration would help develop agriculture. Reduction of barriers to agricultural trade between African countries would open up competition and markets.

It is agreed that the reduction of trade barriers between African countries in agricultural products would stimulate agriculture and create more competition. Even greater gains can be made in exporting and in import substitution, behind low trade barriers to products from *all* countries. Nevertheless, the Bank supports initiatives for regional integration in Africa.

Donors Should Not Strategize for Africa

Several critics pointed out that while this report supports the idea that Africans should develop their own agricultural strategies, here is a donor again suggesting a strategy for Africa.

Donors should certainly attempt to reduce the production of papers on development strategy. But as long as there is a vacuum on the African side, this vacuum will be filled by donors. In addition, donors need to assess the value of their assistance in order to improve it.

Capacity of "the People" to Participate Is Limited

Several critics indicated that large proportions of the African population have not received sufficient preparation to participate significantly in strategy and project design and implementation. They were therefore cautionary regarding increasing popular participation.

It is true that education and democratization will improve the environment for popular participation over time. But we find that even in the current context, greater participation in program and policy design by stakeholders or their representatives improves both the design and popular commitment.

Greater Donor Selectivity Hurts the Neediest

Many African critics did not like the strategy's call for greater donor selectivity in the countries and subsectors within countries to be assisted. Countries that are poorly managed need help, according to these critics, to overcome their problems. If donors ignore such countries, it will take longer for the countries to resolve their problems. Similarly, the critics stated that requirements for agricultural development are wide-ranging. Focus on a few subsectors is unlikely to generate the accelerated agricultural growth rates desired.

As donor resources decline, it is sensible to focus resources where they will have the largest impact (by country and by sector). Continued high rates of failure of donor projects undermine the industrial country constituency for aid and will lead to further cuts. Wasted aid resources do not help the affected country.

Link Debt Forgiveness to Rural Development Efforts

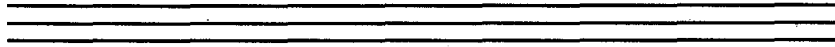
Many critics felt that the African debt problem should be linked to the rural development strategy. If the debt were written off, African countries could put more resources into agriculture and the environment, as well as into other investments. Some critics suggested that donors should provide debt writeoff in return for greater government investment in agriculture and rural development.

Indeed, it is the unsustainable debt burden of many African countries, as well as of some developing countries outside of Africa, that has led to the debt initiative recently developed by the World Bank and the International Monetary Fund (IMF), with the assistance of other partners in development. But tying debt relief to agricultural development makes little sense as a general proposition. Debt relief should be tied to overall sound economic policy.

Overgeneralization Is Dangerous

There was concern that solutions suggested in the paper were too general. Adapting the strategy to each country's circumstances would result in a range of diverse solutions.

This is a valid critique. The key to resolving issues is a country agricultural strategy, which is converted to investment and policy programs. These will vary, as indicated in the text. In particular, the agricultural content of extension, research, livestock, and natural resource management services will vary from one ecological zone to the next. But there are some common problems and findings that will help motivate these country strategies, and these have been identified here. Unfortunately, the critics are correct in predicting exceptions. No general strategy can single-handedly capture the diversity of solutions to the agricultural and rural development problem faced by the different countries of Sub-Saharan Africa.



Statistical Tables

Table A1. Agricultural Growth Rate, Africa, 1975-95
(percent)

<i>Country</i>	<i>1975-84</i>	<i>1985-89</i>	<i>1990-MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
Chad	-1.0	3.6	<u>8.5</u>	<u>8.9</u>	<u>20.0</u>	<u>6.0</u>	-3.7	—	—
Tanzania	—	<u>5.0</u>	<u>5.5</u>	<u>5.6</u>	<u>8.1</u>	<u>6.4</u>	<u>5.2</u>	3.5	3.5
Namibia	—	<u>5.4</u>	<u>5.4</u>	<u>0.0</u>	<u>6.6</u>	-4.6	<u>14.5</u>	<u>14.1</u>	—
Guinea-Bissau	-2.6	<u>7.3</u>	<u>4.5</u>	3.7	3.0	3.6	<u>5.3</u>	<u>7.3</u>	3.4
Guinea	—	<u>4.2</u>	<u>4.3</u>	3.4	3.6	3.8	<u>5.0</u>	<u>5.1</u>	<u>5.0</u>
Benin	3.0	<u>4.6</u>	<u>4.1</u>	-1.3	<u>7.9</u>	2.9	1.8	<u>9.7</u>	—
Burkina Faso	1.0	<u>4.6</u>	4.0	-6.7	<u>20.7</u>	1.2	1.3	-0.2	—
Uganda	—	2.7	3.7	<u>5.2</u>	2.9	-1.0	<u>9.3</u>	1.8	<u>5.9</u>
Mauritania	2.9	<u>4.5</u>	3.5	-6.6	<u>4.2</u>	1.8	<u>9.7</u>	3.0	<u>5.0</u>
Togo	2.8	<u>4.3</u>	3.0	3.1	-1.2	1.8	<u>15.1</u>	-6.3	—
Niger	1.3	2.9	—	—	—	-7.4	<u>0.7</u>	—	—
Nigeria	-3.0	<u>6.4</u>	2.6	<u>4.2</u>	3.5	2.1	1.4	2.4	3.0
Congo, Dem. Rep. of	1.7	2.5	—	—	—	—	—	—	—
Tunisia	1.2	-1.2	2.3	<u>30.3</u>	<u>13.9</u>	<u>5.5</u>	-5.3	-9.9	-9.0
Mali	2.6	<u>10.1</u>	2.0	-1.2	-5.3	<u>15.2</u>	-8.7	<u>6.6</u>	<u>8.6</u>
Egypt, Arab Rep.	2.8	<u>0.3</u>	2.0	1.7	1.8	1.4	1.6	2.9	3.0
Ethiopia	—	3.9	1.8	1.6	<u>7.1</u>	-2.2	<u>6.2</u>	-4.7	<u>4.1</u>
Ghana	<u>0.2</u>	2.3	1.7	-2.0	<u>4.7</u>	-0.6	2.8	1.0	<u>4.2</u>
Madagascar	<u>0.2</u>	2.8	1.6	2.1	<u>0.5</u>	1.7	3.2	-0.5	2.7
Malawi	2.2	1.2	1.5	-0.2	<u>12.8</u>	-25.1	<u>53.0</u>	-29.3	<u>28.3</u>
Mozambique	—	3.7	1.3	1.1	-4.0	-11.3	<u>21.3</u>	<u>5.0</u>	—
Somalia	<u>8.1</u>	3.5	—	1.3	—	—	—	—	—
Botswana	-3.5	<u>12.2</u>	1.1	3.6	2.7	2.0	-1.0	-1.1	2.5
Comoros	—	3.7	<u>0.9</u>	2.8	1.6	-0.8	<u>0.7</u>	1.3	1.5
Algeria	3.6	<u>7.1</u>	<u>0.9</u>	-9.2	<u>15.3</u>	2.0	-4.3	-10.8	<u>20.0</u>
Côte d'Ivoire	2.7	1.3	<u>0.9</u>	<u>10.4</u>	-3.8	-3.9	2.3	2.1	<u>5.1</u>

Central African Rep.	0.6	3.1	0.8	0.0	-3.1	0.8	2.9	5.0	—
Cape Verde	—	<u>12.3</u>	0.8	<u>6.4</u>	1.3	-1.2	-2.4	—	—
Cameroon	<u>5.6</u>	0.2	0.1	<u>7.8</u>	-2.9	2.7	-2.2	-3.8	4.0
Mauritius	-2.5	0.6	-0.2	<u>9.8</u>	-1.9	<u>6.5</u>	-7.2	-6.8	—
Gabon	—	2.0	-0.5	-4.3	3.5	-2.2	1.1	-3.4	2.3
Seychelles	-2.3	-2.5	-0.5	<u>17.5</u>	0.3	-6.7	-1.8	-4.8	—
Kenya	<u>4.1</u>	<u>4.4</u>	-0.9	3.5	-0.7	-3.3	-3.3	3.1	—
Zimbabwe	-0.1	1.5	-1.0	-6.7	3.1	-24.4	<u>48.5</u>	—	—
Angola	—	0.5	-1.2	-0.3	4.8	<u>11.0</u>	-28.0	<u>12.0</u>	<u>7.5</u>
Congo, Rep. of	3.4	<u>4.8</u>	-1.4	1.6	-8.4	3.2	-8.8	3.6	<u>6.7</u>
Swaziland	1.7	0.8	-1.5	3.1	<u>3.9</u>	-17.7	<u>9.8</u>	0.4	—
Zambia	0.5	<u>5.6</u>	-1.6	-8.9	<u>5.2</u>	-33.1	<u>79.6</u>	-19.8	-13.2
South Africa	0.2	<u>7.6</u>	-1.7	-6.8	3.8	-27.2	<u>17.2</u>	8.6	3.2
Equatorial Guinea	—	1.0	-1.7	0.7	-6.6	-3.9	0.1	<u>5.3</u>	—
Gambia, The	2.6	0.2	-1.8	-12.5	<u>16.7</u>	-22.2	<u>11.0</u>	<u>4.2</u>	—
Burundi	2.0	<u>4.1</u>	-2.5	<u>5.6</u>	2.1	3.0	-7.1	-10.6	-5.2
Senegal	-1.2	<u>4.7</u>	-2.6	<u>9.8</u>	-2.5	-0.9	-5.4	-12.2	—
Sierra Leone	<u>8.1</u>	1.6	-3.3	<u>4.3</u>	-14.2	-15.5	<u>5.4</u>	<u>12.6</u>	-6.1
Sudan	1.5	-1.1	—	-3.6	-4.2	—	—	—	—
Morocco	1.3	<u>10.0</u>	-5.2	-5.0	<u>21.7</u>	-35.5	-4.7	<u>63.0</u>	-45.9
Lesotho	-5.1	<u>6.3</u>	-5.2	2.4	-29.5	-23.3	<u>18.3</u>	<u>46.0</u>	-31.3
Rwanda	<u>5.5</u>	1.0	-8.6	-2.7	<u>5.6</u>	<u>5.3</u>	-15.0	-41.2	<u>22.5</u>

— Not available.

Note: The table shows the annual growth of value added (in constant 1987 dollars) in agriculture. This covers the value added in forestry, hunting and fishing, as well as in agriculture. The high benchmark, underlined, is the target set to achieve food security. The low figure, bolded, represents a probable decline in a country's ability to feed its population.

a. Average agricultural GDP, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A2. Agricultural GDP, Africa, 1975-95

(millions of 1987 U.S. dollars)

<i>Country</i>	<i>1975-84</i>	<i>1985-89</i>	<i>1990-MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
Nigeria	9,142.8	10,208.0	12,478.0	11,717.9	12,131.5	12,380.7	12,549.6	12,851.6	13,237.1
Algeria	4,198.3	6,121.7	7,049.2	6,351.3	7,320.2	7,463.7	7,140.7	6,372.8	7,646.7
Egypt, Arab Rep.	5,586.8	6,564.4	6,931.7	6,612.5	6,731.5	6,825.6	6,934.8	7,135.9	7,350.0
South Africa	3,866.4	4,825.3	4,883.3	5,200.9	5,399.4	3,930.5	4,605.4	5,002.4	5,161.2
Sudan	5,187.8	5,075.5	4,692.7	4,793.2	4,592.1	—	—	—	—
Uganda	3,464.2	3,517.7	4,390.2	4,056.3	4,173.2	4,132.2	4,516.0	4,596.0	4,867.2
Ethiopia	3,393.4	3,110.0	3,628.0	3,405.3	3,647.8	3,566.0	3,785.6	3,607.5	3,756.1
Morocco	2,227.8	3,429.4	3,528.4	3,760.7	4,576.7	2,952.6	2,813.6	4,585.7	2,481.2
Côte d'Ivoire	2,962.0	2,893.0	3,223.7	3,330.3	3,202.2	3,076.8	3,146.7	3,211.2	3,375.0
Cameroon	2,396.8	2,846.5	3,116.4	3,192.4	3,100.9	3,184.4	3,112.9	2,994.0	3,113.7
Ghana	2,388.7	2,610.5	2,882.8	2,717.1	2,846.0	2,827.7	2,907.5	2,937.2	3,061.5
Kenya	1,708.0	2,169.6	2,360.7	2,439.5	2,422.2	2,341.6	2,265.0	2,335.1	—
Congo, Dem. Rep. of	1,878.1	2,232.5	—	—	—	—	—	—	—
Tanzania	1,344.6	1,591.9	2,142.2	1,838.9	1,987.8	2,115.1	2,225.0	2,302.9	2,383.5
Tunisia	1,059.7	1,284.0	1,702.4	1,587.1	1,808.1	1,906.6	1,805.5	1,626.8	1,480.3
Mali	668.0	828.8	1,061.0	1,018.6	965.1	1,111.5	1,015.0	1,081.5	1,174.5
Senegal	910.0	984.2	1,004.0	1,077.5	1,050.6	1,041.6	985.0	865.2	—
Angola	—	937.3	953.6	954.3	1,000.2	1,110.2	799.3	895.2	962.4
Madagascar	709.7	812.7	920.2	888.8	893.4	908.6	937.8	933.6	958.8
Niger	716.3	844.7	909.0	—	954.3	883.4	889.4	—	—
Burkina Faso	578.1	718.1	844.7	715.7	863.9	874.2	885.8	884.1	—
Zimbabwe	659.5	813.6	778.2	784.7	809.0	611.4	907.8	—	—
Rwanda	716.4	831.5	717.1	804.7	849.4	894.1	760.0	447.0	547.6
Benin	404.0	571.4	704.9	633.9	683.9	703.9	716.8	786.1	—

	Somalia	450.2	607.5	632.1	632.1	—	—	—	—	—
	Mozambique	520.3	562.4	614.3	623.3	598.1	530.7	643.6	675.9	—
	Guinea	—	498.7	611.7	550.3	569.9	591.6	620.9	652.3	684.8
	Burundi	444.0	557.5	575.5	600.1	612.9	631.6	586.5	524.5	497.3
	Malawi	455.3	513.9	562.2	531.2	599.2	448.7	686.4	485.2	622.5
	Togo	295.6	437.5	520.5	496.8	491.0	500.0	575.3	539.3	—
	Chad	308.3	350.0	448.0	381.5	457.9	485.4	467.3	—	—
	Central African Rep.	361.1	424.8	444.5	443.9	430.2	433.6	446.2	468.5	—
	Sierra Leone	298.0	436.1	401.0	479.6	411.5	347.7	366.6	412.7	387.7
	Gabon	339.1	375.1	378.6	374.2	387.3	378.9	382.9	369.9	378.5
	Mauritania	213.9	258.1	287.6	256.6	267.4	272.2	298.6	307.6	323.0
	Congo, Rep. of	214.5	273.6	286.3	308.4	282.6	291.6	265.8	275.4	293.9
	Namibia	207.0	225.6	279.3	250.5	267.0	254.6	291.6	332.7	—
	Zambia	212.8	262.2	257.0	260.8	274.3	183.6	329.6	264.3	229.5
47	Botswana	106.4	100.5	139.4	135.1	138.8	141.6	140.2	138.6	142.1
	Guinea-Bissau	70.5	84.3	111.5	100.2	103.2	107.0	112.6	120.8	124.9
	Comoros	61.3	74.9	83.6	82.1	83.5	82.8	83.3	84.4	85.6
	Swaziland	63.4	72.9	74.1	77.6	80.6	66.4	72.9	73.2	—
	Gambia, The	67.9	73.2	70.2	68.4	79.8	62.1	68.9	71.8	—
	Equatorial Guinea	—	73.7	69.8	74.6	69.7	67.0	67.0	70.6	—
	Lesotho	75.4	67.4	61.5	82.8	58.3	44.8	52.9	77.3	53.1
	Cape Verde	15.2	24.2	28.5	28.6	29.0	28.6	27.9	—	—
	Seychelles	15.5	13.2	13.9	14.7	14.7	13.8	13.5	12.9	—

— Not available.

a. Average agricultural GDP, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A3. Agriculture as a Percentage of GDP, Africa, 1975-95

<i>Country</i>	<i>1975-84</i>	<i>1985-89</i>	<i>1990-MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Somalia	57.8	62.2	62.8	62.8	—	—	—
Ethiopia	49.8	46.7	54.6	45.9	55.3	61.6	57.2
Tanzania	44.7	48.5	51.0	49.6	49.9	51.2	51.6
Equatorial Guinea	—	62.4	50.5	58.9	55.9	47.7	45.3
Burundi	56.1	50.9	48.8	51.1	48.6	49.2	48.7
Uganda	60.9	53.0	48.4	53.3	49.4	48.3	48.3
Ghana	55.3	48.4	47.3	47.9	48.6	48.6	47.6
Guinea-Bissau	46.9	45.3	44.6	44.0	44.0	43.8	44.8
Mali	56.7	46.0	43.8	45.0	43.4	44.6	42.4
Central African Rep.	37.8	38.8	43.4	40.9	42.4	44.7	47.4
Chad	44.7	38.7	39.1	32.7	40.7	41.7	41.3
Comoros	34.3	38.4	38.8	40.4	39.7	39.5	36.7
Sierra Leone	34.5	48.5	38.3	43.9	40.6	36.0	34.3
Malawi	35.5	40.2	38.2	40.8	39.5	29.7	44.7
Niger	46.6	35.3	37.5	35.3	37.5	38.8	38.5
Togo	29.4	33.6	37.2	33.7	32.6	36.1	45.7
Benin	33.2	34.3	36.0	36.1	37.2	36.7	35.8
Rwanda	43.8	39.3	33.6	30.4	31.4	31.6	32.8
Liberia	29.5	33.6	—	—	—	—	—
Côte d'Ivoire	25.3	28.9	33.2	33.8	32.7	31.5	32.5
Mozambique	33.5	42.1	32.9	38.4	36.0	30.5	30.9
Burkina Faso	32.5	35.4	32.5	31.4	33.5	32.4	34.0
Madagascar	29.4	31.1	31.8	29.5	30.7	30.9	31.7
Nigeria	30.1	36.4	31.4	32.4	30.1	26.4	33.3
Congo, Dem. Rep. of	25.9	30.0	—	—	—	—	—
Sudan	33.6	31.2	29.7	29.1	27.7	32.1	—
Cameroon	28.0	23.4	28.7	24.2	25.0	26.2	31.8

São Tomé and Príncipe	—	21.8	27.1	30.0	29.3	26.5	22.8
Mauritania	27.7	26.2	24.6	26.6	25.9	23.8	23.8
Zambia	14.7	14.3	24.5	18.2	15.8	21.3	33.0
Kenya	30.7	27.6	24.0	25.0	23.3	23.0	24.3
Guinea	—	23.6	23.8	23.4	23.6	23.8	23.9
Gambia, The	30.2	27.7	23.0	22.5	23.4	22.3	23.2
Senegal	23.0	20.9	19.3	19.9	19.6	20.0	20.1
Angola	—	15.2	17.6	17.9	24.8	19.1	19.7
Egypt, Arab Rep.	21.6	18.8	17.2	16.9	16.8	17.1	16.3
Morocco	16.7	17.1	16.8	17.7	20.1	15.7	14.7
Eritrea	—	—	15.2	—	—	25.4	11.0
Tunisia	14.8	13.8	14.7	15.7	16.7	16.1	14.7
Cape Verde	11.4	13.1	13.5	13.7	13.9	13.4	12.9
Zimbabwe	13.2	14.3	12.9	14.4	14.4	9.4	13.4
Congo, Rep. of	11.6	11.6	11.4	12.9	11.3	11.6	10.8
Namibia	10.8	10.6	10.4	10.2	10.9	8.9	9.4
Lesotho	23.3	17.5	10.3	16.1	9.7	7.5	9.9
Algeria	8.3	10.1	10.3	11.0	9.2	10.9	10.8
Swaziland	20.7	14.8	9.6	11.2	11.4	7.5	9.2
Mauritius	14.8	11.9	8.9	10.3	9.6	9.3	8.2
Gabon	6.3	9.3	8.3	8.6	8.3	8.4	8.2
Botswana	17.3	5.9	5.3	5.5	5.2	5.1	5.7
Libya	2.3	4.5	—	—	—	—	—
South Africa	6.4	5.5	4.2	4.8	4.6	3.8	4.0
Seychelles	7.0	5.2	4.2	4.6	4.8	4.3	3.7

— Not available.

a. Average share of agriculture in the country's total GDP, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A4. Food Production Index, Africa, 1975-93
(1979-81 = 100)

<i>Country</i>	<i>1975-84</i>	<i>1985-89</i>	<i>1990-MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Algeria	99.3	102.0	109.4	96.8	115.8	117.9	107.2
Angola	103.8	91.1	82.4	82.6	84.4	84.1	78.7
Benin	98.5	107.1	114.9	111.8	118.1	114.5	115.2
Botswana	103.6	81.1	74.9	78.3	78.8	76.9	65.8
Burkina Faso	99.4	125.4	125.0	112.8	130.3	128.7	128.2
Burundi	102.0	97.5	94.1	96.0	95.1	95.1	90.0
Cameroon	103.1	93.4	81.6	89.8	81.5	77.6	77.3
Cape Verde	87.0	139.1	126.5	133.1	111.5	122.8	138.7
Central African Rep.	99.4	95.5	94.4	94.1	93.3	95.0	95.4
Chad	96.4	93.6	96.6	92.0	97.6	101.0	96.0
Comoros	102.1	90.7	89.0	86.5	101.8	81.8	85.9
Congo, Dem. Rep. of	101.4	99.8	100.6	100.6	101.0	100.6	100.4
Congo, Rep. of	101.7	97.8	86.0	91.3	85.1	83.9	83.5
Côte d'Ivoire	96.6	102.3	96.9	100.5	95.5	94.3	97.2
Egypt, Arab Rep.	101.8	107.5	117.8	115.0	116.4	119.5	120.4
Ethiopia	96.5	88.3	86.0	87.1	85.3	85.6	—
Gabon	98.2	87.4	84.0	87.3	84.8	82.7	81.1
Gambia, The	129.7	99.3	66.1	71.2	75.4	56.9	61.1
Ghana	101.8	101.6	94.6	85.5	96.9	98.3	97.8
Guinea	99.1	94.5	98.2	95.1	96.5	99.5	101.8
Guinea-Bissau	106.9	113.3	113.1	116.6	110.4	112.4	112.9
Kenya	104.8	105.1	93.1	102.4	97.7	91.7	80.7
Lesotho	100.2	86.2	76.4	93.9	75.9	64.3	71.7
Liberia	101.0	95.1	59.6	63.8	60.8	59.4	54.3
Libya	98.2	73.9	69.8	77.0	79.2	71.0	51.9

Madagascar	101.0	90.8	84.9	87.4	85.8	83.3	83.1
Malawi	100.6	80.9	64.2	66.6	69.9	49.5	70.8
Mali	98.5	94.1	91.1	89.9	96.8	86.9	90.9
Mauritania	94.2	86.8	83.8	88.8	88.3	79.8	78.4
Mauritius	104.8	103.6	100.8	100.5	100.8	103.0	99.0
Morocco	100.4	126.7	130.1	135.9	151.8	116.9	115.8
Mozambique	100.7	84.6	77.8	88.6	81.6	66.3	74.9
Namibia	88.1	71.8	71.7	70.3	72.1	71.9	72.7
Niger	90.7	68.1	73.9	64.7	79.6	77.2	74.1
Nigeria	103.3	107.3	126.0	122.3	122.9	128.5	130.4
Rwanda	97.9	90.7	81.3	83.4	86.1	80.6	75.0
São Tomé and Príncipe	99.4	70.1	59.3	54.8	51.6	65.9	64.8
Senegal	116.3	109.5	95.3	98.3	99.6	87.7	95.6
Sierra Leone	104.8	98.9	89.2	96.2	94.5	84.5	81.7
Somalia	99.3	94.6	71.9	87.5	71.1	60.9	68.0
South Africa	93.1	84.9	76.4	81.7	81.4	66.7	75.8
Sudan	95.0	81.7	77.7	66.1	78.3	85.9	80.4
Swaziland	98.2	98.4	86.1	90.7	96.6	78.1	79.2
Tanzania	100.9	98.6	88.3	94.7	91.8	83.9	82.8
Togo	96.1	88.1	87.8	91.2	83.7	81.2	95.0
Tunisia	102.8	98.6	124.6	112.8	143.6	115.8	125.9
Uganda	120.4	99.5	102.1	105.2	102.6	99.3	101.3
Zambia	112.1	99.6	88.7	89.0	89.5	74.7	101.5
Zimbabwe	103.2	94.3	69.3	87.9	79.8	43.1	66.4

— Not available.

a. Average food production index, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A5. Fertilizer Use, Africa, 1975–95

(1,000 metric tons per square kilometer)

<i>Country</i>	<i>1975–84</i>	<i>1985–89</i>	<i>1990–MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Egypt, Arab Rep.	263.9	362.3	346.6	364.4	364.5	300.6	357.0
Mauritius	222.6	257.9	238.8	245.4	243.8	235.7	230.1
Seychelles	107.7	—	—	—	—	—	—
Malawi	9.6	13.1	19.7	13.7	19.8	20.8	24.3
Zimbabwe	18.5	20.4	19.2	23.0	19.3	14.0	20.6
Tunisia	8.0	12.3	11.8	10.1	11.9	11.9	13.4
Morocco	7.4	10.7	9.9	10.7	10.2	9.4	9.4
Swaziland	10.4	9.3	9.5	10.0	9.1	9.8	9.2
South Africa	10.1	8.5	8.2	8.4	7.8	7.8	8.9
Nigeria	2.2	4.3	6.3	5.5	5.9	6.8	7.0
Benin	1.3	3.7	5.8	4.8	5.1	6.6	6.9
Libya	4.2	5.0	5.8	5.0	5.5	5.8	6.9
Togo	1.1	4.4	4.2	4.4	4.5	4.7	3.4
Kenya	2.4	4.5	4.2	4.5	3.7	3.9	4.6
Senegal	5.6	3.7	3.2	2.2	2.8	3.1	4.6
Algeria	4.0	5.6	3.0	3.6	2.5	2.5	3.4
Gambia, The	8.5	10.2	2.9	2.2	3.3	3.0	3.0
Côte d'Ivoire	2.7	2.2	2.8	2.1	2.6	3.3	3.2
Lesotho	1.6	1.8	2.4	2.0	2.5	2.5	2.7
Burkina Faso	0.9	1.8	2.2	2.2	2.1	2.2	2.2
Cameroon	3.7	4.9	2.1	1.9	2.0	2.2	2.5
Zambia	1.9	2.4	2.1	1.7	1.8	2.4	2.4
Ethiopia	0.6	1.2	2.0	1.9	1.7	2.3	—
Cape Verde	1.5	1.9	—	—	—	—	—
Tanzania	0.8	1.2	1.3	1.3	1.3	1.2	1.3

Burundi	0.6	1.4	1.3	0.9	0.2	2.3	1.7
Rwanda	0.3	0.7	1.1	1.8	1.0	0.4	1.3
Ghana	2.5	1.2	1.0	1.4	0.9	1.1	0.6
Comoros	—	—	0.9	—	0.9	0.9	0.9
Sudan	0.5	0.5	0.7	0.7	0.8	0.6	—
Mali	0.5	0.5	0.6	0.5	0.5	0.7	0.8
Sierra Leone	0.6	0.7	0.6	0.5	0.2	0.5	1.1
Djibouti	6.0	0.5	—	—	—	—	—
Madagascar	0.3	0.3	0.3	0.4	0.3	0.3	0.3
Guinea-Bissau	0.4	0.4	0.3	0.4	0.4	0.2	0.3
Angola	0.4	0.5	0.3	0.3	0.2	0.3	0.2
Equatorial Guinea	0.3	—	—	—	—	—	—
Congo, Dem. Rep. of	0.4	0.2	0.2	0.3	0.4	0.1	0.2
Central African Rep.	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Guinea	0.2	0.1	0.2	0.2	0.3	0.1	0.3
Congo, Dem. Rep. of	0.1	0.2	0.2	0.2	0.1	0.2	0.2
Chad	0.1	0.1	0.2	0.1	0.2	0.2	0.1
Mauritania	0.0	0.0	0.1	0.1	0.1	0.2	0.1
Gabon	0.2	0.4	0.1	0.2	0.1	0.1	0.1
Uganda	0.1	0.1	0.1	0.0	0.1	0.1	0.2
Niger	0.2	0.2	0.1	0.2	0.0	0.1	0.1
Mozambique	0.4	0.1	0.1	0.1	0.1	0.1	0.1
Somalia	0.0	0.1	0.1	0.1	—	—	—
Liberia	0.7	0.4	0.0	0.0	—	—	—
Botswana	0.1	0.0	0.0	0.0	0.0	0.0	0.0

— Not available.

a. Average amount of fertilizer use, 1990 to most recent year in which data are available.

Source: Africa Regional Database 1996.

Table A6. Cereal Crop Yield

(kilograms per planted hectare)

<i>Country</i>	<i>1975-84</i>	<i>1985-89</i>	<i>1990-MR^a</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>
Egypt, Arab Rep.	40.9	49.0	58.0	56.4	56.1	56.8	60.0	61.0
Mauritius	27.9	40.6	41.9	41.9	37.2	44.3	42.4	43.4
São Tomé and Príncipe	15.2	16.8	21.5	19.3	21.2	22.2	22.4	22.6
Madagascar	17.0	18.4	19.3	19.5	19.1	19.5	19.8	18.7
South Africa	17.0	17.6	18.4	17.8	18.9	9.4	21.8	23.9
Gabon	16.7	15.3	17.0	15.8	16.7	17.4	17.6	17.4
Djibouti	24.6	15.6	16.0	16.7	15.7	15.0	16.3	16.3
Zambia	15.6	19.1	15.8	13.5	16.4	7.7	23.0	18.5
Kenya	14.9	17.0	15.2	14.9	15.2	15.1	12.2	18.8
Uganda	13.6	14.1	15.2	15.0	14.3	15.3	15.4	15.7
Guinea-Bissau	7.2	14.9	15.1	15.3	16.2	14.4	13.5	15.9
Burundi	11.1	12.0	13.4	13.5	13.7	14.0	13.8	12.2
Ethiopia	11.0	11.6	12.8	12.8	12.3	13.4	—	—
Comoros	11.2	11.6	12.8	12.8	13.0	13.0	13.3	11.9
Tunisia	7.8	8.2	12.7	11.5	15.6	15.2	12.2	8.9
Nigeria	12.0	14.0	12.4	12.2	12.7	12.0	12.6	12.5
Tanzania	11.3	13.0	12.3	14.6	12.1	10.9	12.1	11.7
Swaziland	13.5	16.8	12.3	10.7	17.5	9.8	12.5	11.0
Zimbabwe	12.2	15.0	12.1	16.2	13.3	4.1	11.9	15.0
Cameroon	9.0	12.1	12.0	12.4	11.9	11.6	12.1	12.1
Sierra Leone	13.6	13.0	12.0	12.0	12.4	12.4	11.8	11.3
Ghana	7.6	9.8	11.6	9.9	12.2	10.4	13.4	12.1
Gambia, The	11.3	11.9	11.6	10.1	11.1	12.4	11.9	12.4
Rwanda	11.2	12.3	11.5	12.7	12.0	12.0	11.0	10.0
Morocco	8.8	12.6	11.0	11.2	15.8	5.9	5.9	16.1
Lesotho	9.2	7.5	10.9	12.3	10.4	4.9	9.7	17.2

Malawi	11.7	11.2	10.0	9.9	11.4	4.7	14.9	9.0
Côte d'Ivoire	8.4	8.9	9.7	8.8	8.9	9.0	11.4	10.5
Congo, Rep. of	6.9	8.1	9.1	8.9	8.8	9.2	9.2	9.2
Benin	7.1	8.2	9.0	8.5	8.8	9.1	9.2	9.5
Liberia	12.5	12.4	8.7	7.7	7.8	6.0	10.8	11.1
Central African Rep.	5.8	10.5	8.7	8.5	8.4	9.4	8.9	8.1
Congo, Dem. Rep. of	7.9	8.0	8.4	8.0	8.0	8.1	8.9	9.1
Algeria	6.2	7.7	8.4	5.8	11.3	10.7	6.8	7.6
Mali	8.0	10.2	8.3	7.3	9.7	7.5	7.5	9.6
Guinea	9.3	9.0	8.2	7.6	8.2	8.8	8.2	8.3
Burkina Faso	5.6	6.9	8.1	6.0	8.8	8.5	8.8	8.5
Togo	8.1	8.2	8.1	7.5	7.6	8.6	8.8	7.8
Senegal	6.7	8.0	8.0	8.0	8.3	7.9	8.4	7.5
Mauritania	4.3	8.3	8.0	8.7	6.7	8.6	8.4	7.6
Eritrea	8.4	8.2	7.4	6.4	6.4	9.5	7.3	7.2
Namibia	6.4	6.6	6.8	7.4	7.4	2.9	7.2	9.2
Libya	5.1	6.4	6.5	6.7	6.9	6.5	6.4	6.1
Chad	5.5	6.1	6.3	5.6	6.2	7.3	5.7	6.5
Sudan	5.8	5.0	5.7	4.6	7.0	6.7	5.1	5.0
Somalia	5.0	7.7	5.5	7.9	5.6	5.1	4.5	4.1
Mozambique	6.2	4.5	4.2	4.7	3.3	1.8	5.6	5.4
Angola	5.9	3.8	3.7	3.3	4.3	4.5	4.1	2.4
Botswana	3.0	2.4	3.3	3.3	4.0	2.4	2.8	3.9
Niger	4.0	4.0	3.0	2.1	3.6	3.0	3.1	3.1
Cape Verde	4.3	4.6	2.7	3.2	1.7	1.9	3.6	3.0

— Not available.

a. Average yield per planted hectare, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A7. Annual Average Deforestation Rate, Africa, 1990s

<i>Country</i>	<i>1990-MR^a</i>
Tunisia	-1.9
Morocco	-1.5
Libya	-1.4
South Africa	-0.8
Swaziland	-0.1
Cape Verde	0.0
Comoros	0.0
Djibouti	0.0
Egypt, Arab Rep.	0.0
Mauritania	0.0
São Tomé and Príncipe	0.0
Seychelles	0.0
Congo, Rep. of	0.2
Mauritius	0.2
Rwanda	0.3
Ethiopia	0.3
Namibia	0.3
Somalia	0.4
Equatorial Guinea	0.4
Niger	0.4
Central African Rep.	0.4
Botswana	0.5
Liberia	0.5
Kenya	0.6
Cameroon	0.6
Burundi	0.6
Gabon	0.6
Congo, Dem. Rep. of	0.6
Sierra Leone	0.6
Zimbabwe	0.7
Senegal	0.7
Burkina Faso	0.7
Angola	0.7
Nigeria	0.7
Chad	0.7
Mozambique	0.7
Guinea-Bissau	0.8
Algeria	0.8
Gambia, The	0.8
Madagascar	0.8
Mali	0.8
Uganda	1.0
Côte d'Ivoire	1.0
Sudan	1.1
Zambia	1.1

<i>Country</i>	<i>1990-MR^a</i>
Guinea	1.2
Tanzania	1.2
Benin	1.3
Ghana	1.3
Malawi	1.4
Togo	1.5

a. Average rate of deforestation, 1990 to most recent year in which data are available. A negative rate indicates an *increase* in forest cover. In countries with positive rates, forest cover is decreasing at 1 percent or more a year.

Source: Africa Regional Database 1996.

Table A8. Rural Population with Access to Safe Water
(percent)

<i>Country</i>	1975-84	1985-89	1990-MR ^a	1990	1993
Mauritius	60.0	95.0	—	—	—
Mauritania	—	16.0	85.5	—	85.5
Seychelles	—	—	80.0	—	80.0
Libya	82.0	75.0	—	—	—
Egypt, Arab Rep.	61.0	90.0	73.6	73.6	—
Sudan	44.0	20.0	73.0	—	73.0
Côte d'Ivoire	10.0	77.0	73.0	—	73.0
Gambia, The	27.0	33.0	71.0	56.0	86.0
Zimbabwe	—	11.8	65.0	—	65.0
São Tomé and Príncipe	—	—	61.1	61.1	—
Rwanda	—	60.0	—	—	—
Burundi	—	24.5	55.0	—	55.0
Niger	33.0	34.2	54.3	54.3	—
Benin	20.0	21.8	54.0	44.9	63.1
Togo	10.0	26.0	53.6	53.6	—
Botswana	39.0	52.5	53.0	—	53.0
Comoros	52.0	—	—	—	—
Guinea	20.0	14.5	51.0	—	51.0
Equatorial Guinea	—	—	48.0	—	48.0
Tunisia	29.0	65.5	47.5	28.4	66.6
Ghana	14.0	40.1	46.0	—	46.0
Tanzania	38.0	47.0	45.0	45.0	45.0
Zambia	16.0	32.0	43.0	—	43.0
Swaziland	—	7.0	42.0	—	42.0
Malawi	53.0	37.9	41.0	—	41.0
Lesotho	14.0	27.0	40.0	40.0	—
Kenya	4.0	21.0	39.8	36.6	43.0

Guinea-Bissau	—	29.5	37.0	27.0	47.0
Cape Verde	—	35.0	33.7	33.7	—
Namibia	—	—	33.5	30.0	37.0
Ethiopia	1.0	42.0	32.0	44.0	20.0
Gabon	34.2	50.0	30.0	—	30.0
Senegal	—	27.0	—	—	—
Chad	26.5	—	—	—	—
Nigeria	—	30.0	26.0	41.0	11.0
Mali	19.7	17.0	25.0	—	25.0
Liberia	—	24.5	—	—	—
Cameroon	—	28.3	24.0	—	24.0
Somalia	20.0	22.0	—	—	—
Morocco	2.0	17.0	17.5	—	17.5
Mozambique	2.0	12.0	17.0	17.0	17.0
Djibouti	20.0	21.0	14.2	14.2	—
Central African Rep.	5.0	14.0	—	—	—
Sierra Leone	2.7	14.0	—	—	—
Uganda	—	12.0	—	—	—
Congo, Dem. Rep. of	12.0	10.5	—	—	—
Madagascar	14.0	17.2	10.0	10.0	—
Congo, Rep. of	9.0	7.0	8.0	—	8.0
Algeria	70.0	55.0	—	—	—
Angola	—	16.4	—	—	—
Burkina Faso	23.0	26.0	—	—	—

— Not available.

Note: In high-performing countries, underlined, the vast majority of rural people have access to safe water. In low performers, bolded, only a small minority have access to safe water.

a. Average, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

Table A9. Proportion of Urban Population with Access to Safe Water

(percent)

<i>Country</i>	1975-84	1985-89	1990-MR ^a	1990	1993
Tunisia	<u>96.0</u>	<u>99.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Morocco	63.0	74.0	<u>100.0</u>	—	<u>100.0</u>
Botswana	<u>95.0</u>	<u>99.0</u>	<u>100.0</u>	—	<u>100.0</u>
Mauritius	<u>100.0</u>	<u>100.0</u>	—	—	—
São Tomé and Príncipe	—	—	<u>99.7</u>	<u>99.7</u>	—
Zimbabwe	—	<u>99.8</u>	<u>99.3</u>	—	<u>99.3</u>
Seychelles	—	—	<u>99.0</u>	—	<u>99.0</u>
Comoros	<u>99.0</u>	—	—	—	—
Namibia	—	—	<u>97.5</u>	<u>98.0</u>	<u>97.0</u>
Côte d'Ivoire	<u>30.0</u>	60.0	<u>97.0</u>	—	<u>97.0</u>
Burundi	—	62.4	<u>97.0</u>	—	<u>97.0</u>
Egypt, Arab Rep.	<u>93.0</u>	<u>100.0</u>	<u>95.1</u>	<u>95.1</u>	—
Congo, Rep. of	<u>81.0</u>	42.0	<u>94.0</u>	—	<u>94.0</u>
Libya	<u>100.0</u>	<u>92.0</u>	—	—	—
Malawi	60.0	<u>67.8</u>	<u>91.0</u>	—	<u>91.0</u>
Lesotho	51.0	—	<u>90.0</u>	<u>90.0</u>	—
Ethiopia	58.0	<u>93.0</u>	<u>90.0</u>	—	<u>90.0</u>
Gambia, The	<u>100.0</u>	<u>100.0</u>	<u>89.5</u>	<u>92.0</u>	<u>87.0</u>
Sudan	72.5	<u>100.0</u>	<u>88.5</u>	—	<u>88.5</u>
Algeria	<u>100.0</u>	<u>86.0</u>	—	—	—
Sierra Leone	50.0	72.0	<u>85.0</u>	<u>85.0</u>	—
Kenya	<u>100.0</u>	61.0	<u>84.6</u>	<u>95.2</u>	74.0
Swaziland	—	<u>100.0</u>	80.0	—	80.0
Gabon	75.0	—	80.0	—	80.0
Guinea	—	76.5	78.0	—	78.0
Angola	—	77.4	—	—	—

Zambia	<u>86.0</u>	70.0	76.0	—	76.0
Ghana	<u>86.0</u>	75.0	76.0	—	76.0
Cape Verde	—	<u>99.5</u>	74.9	74.9	—
Benin	—	62.0	73.3	65.1	<u>81.5</u>
Nigeria	—	60.0	72.0	75.0	69.0
Cameroon	—	46.5	71.0	—	71.0
Togo	49.0	68.0	64.4	—	64.4
Senegal	56.0	63.0	—	—	—
Tanzania	<u>88.0</u>	<u>82.5</u>	62.5	60.0	65.0
Niger	58.0	48.0	57.9	57.7	58.0
Somalia	58.0	57.0	—	—	—
Madagascar	76.0	<u>81.4</u>	55.0	55.0	—
Rwanda	—	55.0	—	—	—
Congo, Dem. Rep. of	38.0	52.5	—	—	—
Burkina Faso	50.0	50.0	—	—	—
Liberia	—	50.0	—	—	—
Mauritania	—	80.0	48.5	—	48.5
Uganda	—	45.0	—	—	—
Mali	58.0	48.0	41.9	41.9	—
Mozambique	<u>82.0</u>	50.0	39.5	35.0	44.0
Chad	35.0	—	—	—	—
Djibouti	53.0	50.0	26.5	26.5	—
Central African Rep.	—	26.5	—	—	—
Guinea-Bissau	—	19.8	17.8	17.5	18.0
Equatorial Guinea	—	47.0	10.0	10.0	—

— Not available.

Note: In high-performing countries, underlined, the vast majority of urban people have access to safe water. In low-performing countries, bolded, only a small minority have access to safe water.

a. Average, 1990 to most recent year for which data are available.

Source: Africa Regional Database 1996.

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