

Chapter 4: Why has agriculture been neglected so far?

To understand why agriculture has been neglected so far in most development policies in Africa, we must look at three explanatory factors that are often debated. The first relates to the political economy of agricultural taxation, long documented after the seminal contributions of Krueger (1974) and Bates (1981, 1983). The second refers to the budget bias against agriculture, which was at the forefront of debate among agricultural ministers during the 2003 Maputo Conference. The decrease in agricultural public expenditure over the past decade tends to strip agricultural policies of their sector-specific components in favour of infrastructure, health and education spending. The third factor involves a review of market failures specific to agriculture, and an explanation of why, after a state withdrawal, the market itself may be reluctant to invest in agriculture.

4.1 The political bias against agriculture

It has long been recognized that low-income agrarian economies tend to discriminate against food producers. However, as economies develop and agriculture shrinks relative to the rest of the economy, policies progressively tend to favour farmers. This was particularly true for the period between independence and the first wave of structural adjustment programmes in the 1980s, when most African countries implemented policies that underpriced food through an overvalued exchange rate.

In examining the origins of cheap food policies and food subsidy programmes, de Janvry and Subramanian (1993) found that most were started in response to economic and political pressure on the state:

1. Food price controls were introduced in Bangladesh, India and Pakistan to stem inflationary pressures associated with war scarcities and droughts.
2. Cheap-food policies also originated as a side-effect of the import-substitution industrialization strategy pursued through strategic protectionism and overvaluation of the domestic currency, which occurred in much of Latin America during the 1950s and 1960s and in parts of Africa until the beginning of the structural-adjustment programme period. This policy was often reinforced by access to food aid or concessional imports. Because food prices are a major determinant of the real wages of urban workers, cheap food policies have contributed to keeping industrial wages low. While selected commercial farmers succeeded in tapping institutional subsidies, mostly on export markets, smallholders were at a disadvantage because they lacked access to cheap credit, subsidized irrigation, improved seeds and other inputs. Smallholders' income tended to stagnate or decline.
3. Food subsidy programmes aimed at the entire population were instituted at a high cost to government budgets under socialist or populist regimes, in which the state engaged in redistributive measures (for example, in Egypt and Sri Lanka).

By reinforcing the economic and ideological arguments for cheap food policies and food subsidies, electoral and pressure-group politics provided some convincing arguments in favour of their perpetuation in spite of poor economic achievements of the 1970s. Clientele-seeking in middle- and upper-income classes was a major motivation of cheap food policies through overvalued exchange rate in Latin America (Lattimore and Schuh, 1976). In Africa, public procurement at below-market prices benefited certain groups. Bates demonstrated that in many African countries, parastatal agencies may not have succeeded in handling

more than 20 to 30 percent of marketed output (Bates, 1981). At the same time, state-sponsored agricultural development projects provided subsidies to large farmers in the form of subsidized irrigation, fertilizers, credit and other inputs. But the targeting of benefits toward the clientele most necessary for political support did not include those groups most at risk nutritionally.

Box 4.1: Types of food and nutrition policies before the structural adjustment period

1. Cheap food policy at no direct cost to government. Food prices may be depressed, either across the board or selectively, by imports at an overvalued exchange rate or through concessional aid, state monopoly procurement and sale or export taxes and levies.
2. Untargeted food-subsidy schemes. Food prices are lowered by the introduction of a consumer subsidy. Producer prices may be at the same level or above consumer prices. Part of the demand may be fulfilled by imports subsidised by the state. Little or no restriction is placed on access to subsidized food, and coverage of the population is often fairly uniform.
3. Targeted interventions. Access to subsidized food or to nutritional supplements is restricted geographically, by means tests or to segments of the population that are considered to be at high risk of malnourishment, such as school children, pregnant mothers and babies. The benefits of cheap food to the poor can also be restricted by subsidizing only those foods that, while nutritionally sound, are considered inferior by the rich.

Source: de Janvry and Subramanian (1993)

4.2 The budget bias against agriculture

After two decades of state withdrawal resulting from structural adjustment programmes, a consensus has emerged on the important role of the state in creating the conditions to make markets work and, even more, to make them work for the poor. As most economists, donors and policy advisers agree, one prerequisite is to provide such basic public goods as rural infrastructure, research and extension, education and health, without which efficiency gains cannot be reaped and income opportunities vanish. They are now at the core of World Bank PRSPs. Data show that Africa is still lagging behind Asia, and Latin America and the Caribbean (LAC) in terms of agricultural public expenditure (Table 4.1 and Figure 4.1).

This situation is all the more dramatic because there is an obvious correlation – if not causation – between investments in public goods provision, factors productivity and growth. Returns on public investments in the key components described in Table 4.1 below have been evaluated over the period 1990-98. According to the World Bank, the evidence suggests that total factor productivity (TFP) in developing countries has grown at 1-2 percent per year (only slightly less than in industrialized countries), and that research accounts for one-third to one-half of that growth. Studies have found a high rate of return on investments in research in developing countries (see Echeverría, 1990, and Evenson and Rosegrant, 1993, for a review of over 100 such studies). An overview of 289 studies on economic returns on agricultural research and extension everywhere in the world found median rates of return of 58 percent on extension investments, 49 percent on research investments, and 36 percent on investments in research and extension combined (Alston *et al.*, 2000). Similarly, investment in education (Duflo, 2001) and infrastructure (Fan and Hazell, 2001) exhibit significant returns and have a positive impact on poverty. IFPRI studies in India and China suggest that investments in rural infrastructure, agricultural research and development (R&D) and human capital are at least as productive in low-yield, rainfed areas as in high-yield irrigated areas, and that they have a much larger impact on poverty (Fan, Hazell and Thorat, 2000; Fan, Hazell and Haque, 2000). Should agricultural policies be restricted to – and even be substituted by – infrastructure and R&D policies, or is there still room for agricultural policies in their traditional, broader sense? Specific market failures, other than the inability of private firms to provide public goods in rural areas, should not make us forget

that making the market work for the poor and insecure requires more than roads and research. It takes something much harder to provide: trust and a secure environment.

Figure 4.1: Agricultural public expenditures, share of agricultural GDP (%)

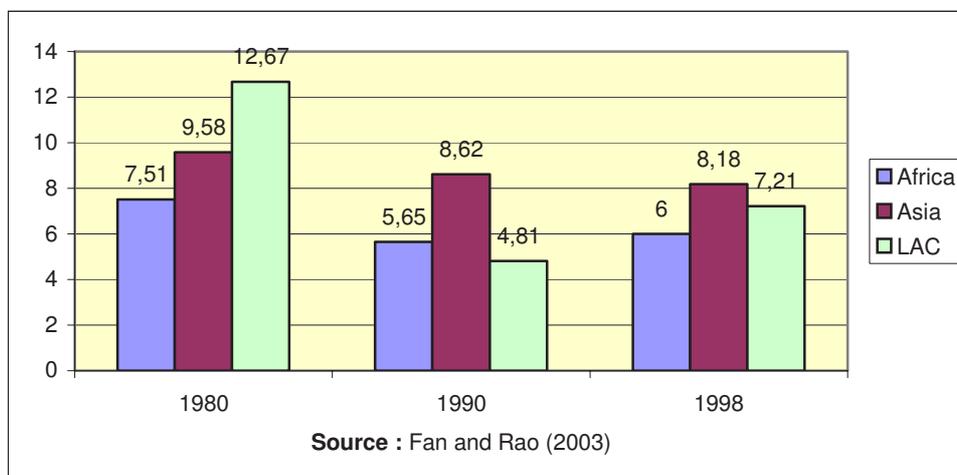


Table 4.1: Composition of total public expenditure (%)

	Africa		Asia		LAC	
	1990	1998	1990	1998	1990	1998
Agriculture	6	5	15	10	8	3
Education	12	16	14	20	16	19
Health	3	5	5	4	4	7
T&C	6	4	12	5	11	6
Social security	5	3	4	3	19	26
Defense	12	10	18	11	7	7
Other	55	57	33	47	35	32

Source: Fan and Rao (2003)

Box 4.2: Rural public goods provision contributes to growth

Public goods are essential elements of the economic environment. Because of their characteristics of low **excludability**³² and low **rivalry**³³, public goods suffer from market failure. Typical examples of public goods of relevance to agriculture are the law, the rules and regulations established by public agencies, services provided the police, the judiciary system and agricultural inspection agencies. These are typically provided by the government and paid for out of taxation because they potentially benefit all members of the community, and "free riding" makes it difficult to charge users directly for these services. However, for many agricultural services the degree of excludability or rivalry is often determined by the precise nature of the service and the conditions under which it is delivered. Thus similar services, such as extension advice, may be delivered by the private sector in some situations but can only be provided efficiently by the public sector in others³⁴.

The importance of public goods for agriculture has already been underlined. The absence of such facilities leads to situations such as:

1. Difficult access to markets because of lack of roads, market information and quality standards (or their poor enforcement).
2. Limited adoption of improved technologies because of the lack of effective technology production and outreach facilities (research and extension networks).
3. Low productivity of labour because of insufficient access to education and health services.

The other economic advantage of the provision of public goods in rural areas is that it will increase job opportunities, thereby contributing to income generation.

In Africa, public resources allocated to the production of public goods for agriculture have seen their share in total government budget shrink. It is also lower than in other developing regions.

4.3 The market bias against agriculture

Macroeconomic reforms under structural adjustment programmes (SAPs) and the withdrawal of the state from most productive and marketing activities tended to leave markets to determine what a country should import or not. In this new context, reliance on food imports is not a problem *per se*, as long as exports can finance imports and economic growth is adequate to generate sufficient income for people to purchase their food. If exports do not generate enough to pay the food import bill and the balance of payments deteriorates, the exchange rate adjusts downward (leading to an increase in the price of food in local currency) so as to equalize imports and exports values, while interest rates rise to equalize investments and savings. Therefore, the macroeconomic implications will depend on the ability of the country to develop its exports to pay its import bill. This is where SSA countries may be different or even unique in comparison to other countries. SSA exports have been so poorly and inefficiently developed and diversified in the past that many countries rely today on a small number of non-diversified products, among which mineral and agricultural products are prominent. The downward slope and volatility of the terms of trade often create situations where fluctuating food import bills have to be paid by fluctuating export receipts, with recurrent imbalances between the two (see Collier and Gunning, 1999).

³² Low excludability means that it may be difficult to exclude people from "free riding" and enjoying the benefits of goods and services even if they have not paid towards their provision. Producers would find it difficult to recoup the full costs of their provision and, from an economic efficiency viewpoint, would thus tend to under-produce such goods.

³³ Low rivalry means that one person's consumption of the goods does not reduce its availability to others. As the cost to society of additional consumers enjoying the benefits of pure public goods is zero, economic efficiency requires their price to be set at zero. As a result it would not be profitable for the private sector to attempt to sell these goods.

³⁴ This paragraph and its footnotes are extracted from Smith, 2001.

Decreasing and unstable terms of trade for countries specializing in agricultural production and exports epitomizes the risk associated with agricultural activity, whether at the national (macro) level or at the household (micro) level.

The dominant economic thinking today argues in favour of the superiority of markets in efficiently allocating scarce resources, and recommends reduction and refocusing of government interventions. Numerous SSA countries have adopted this approach since the mid-1980s, with the state disengaging from direct involvement in economic activities. Yet experience shows that for reform of the role of government to translate into economic benefits, two major conditions must be met:

- Essential public goods should be effectively provided; and
- markets should exist or be developed (for each product or service), especially insurance markets covering price and yield risks.

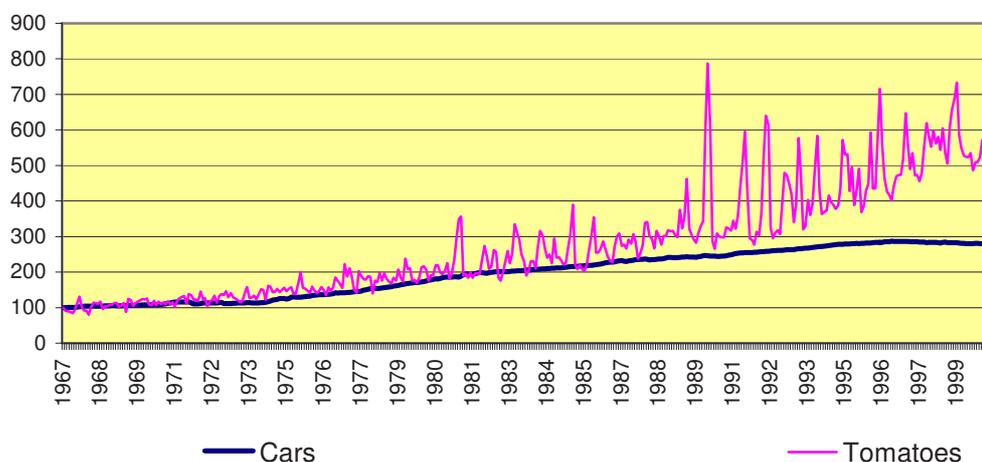
As mentioned in the previous section, public goods provision is a key input for development. In numerous SSA countries, however, public goods delivery has been far from adequate, particularly in rural areas where households are scattered over a large territory (Paarlberg, 2002). But this is only one part of the picture. For a number of key goods and services, the market is missing (credit, insurance and fertilizer in some places). High price instability combined with the absence of futures markets is generally the rule in SSA. It is usually attributed to imperfect market information (see for example Boussard, 1992, and Stiglitz, 2002). Hence the conditions for market efficiency are not met in most SSA countries because of agricultural peculiarities in terms of special dispersion (which increases the cost of infrastructure provision, among other public goods) and market instability. As a consequence, investment and growth are low, and poverty and food insecurity widespread.

Perhaps the market instability issue is worth emphasizing, now that the lack of public goods provision in rural areas has been well documented, and the “missing markets” phenomenon is debated less. Agriculture is characterized by two great sources of uncertainty, which undermine optimal allocation of resources:

1. Yield uncertainty is generated by climatic or other hazards such as pests and diseases. This risk is normally “insurable”, because it can be calculated. Most of the time, the poor are not insured, because they cannot afford to pay for insurance and have to tackle risk through other means (adapted technology, irrigation, storage, animal health monitoring, disease and pest prevention etc.). Existing crop-insurance schemes have generally not worked very well because of the “moral hazard” associated with false accident reports and other falsifications. To be sustainable, these schemes require a very powerful state capable of enforcing contracts.
2. Price uncertainty, which is generated by the occurrence of local or international market shocks. Price fluctuations may sometimes be associated with exceptionally good physical conditions resulting in higher than expected production. This risk can also be calculated. Unfortunately, price fluctuation is usually a consequence of complex “chaotic” mechanisms, which are tied to the market itself (Boussard, 1996). Therefore, the market-forces risk cannot be removed through the mechanism of insurance because any attempt to do so would lead to insurer bankruptcy. It can be alleviated by futures markets and other financial products, but at significant cost (and in any case, it is difficult for a poor farmer to get access to futures). This kind of risk is specific to agriculture, and due to the fact that consumers are not very sensitive to price changes in the case of food. Figure 4.2 illustrates this fact: the price of tomatoes in the United States is very volatile, while the price of cars is fairly

constant. What is true for tomatoes in the United States is true also of any food commodity on the African market.

Figure 4.2: Tomato retail price index in large American cities, compared to new car retail price index



Source: Economagic.com

The important thing to realize about such instability is that it prevents investment, and thus the substitution of capital with labour.

Yield and price variability cause large changes in income³⁵. Volatility of incomes is extremely detrimental to growth, because it induces coping strategies that impede investment and entrepreneurship. Risk also exacerbates problems of income distribution because, when it remains uninsured, it hurts the poor while favouring the rich, who can afford to invest in risky businesses and may obtain high returns. Credit becomes almost impossible in the presence of high income variability, because it is in the common interest of banks and debtors to avoid reimbursement failures. Thus, risk and uncertainty management is a critical part of farmers' decision-making, which in turn affects their land use and farming decisions. As a consequence, it is also a major determinant of global food supply. A study by Boussard and Gérard of 2 800 agricultural commodities shows a difference of about 2 points in growth rates between the "stable" and "unstable" series³⁶.

4.4 In conclusion

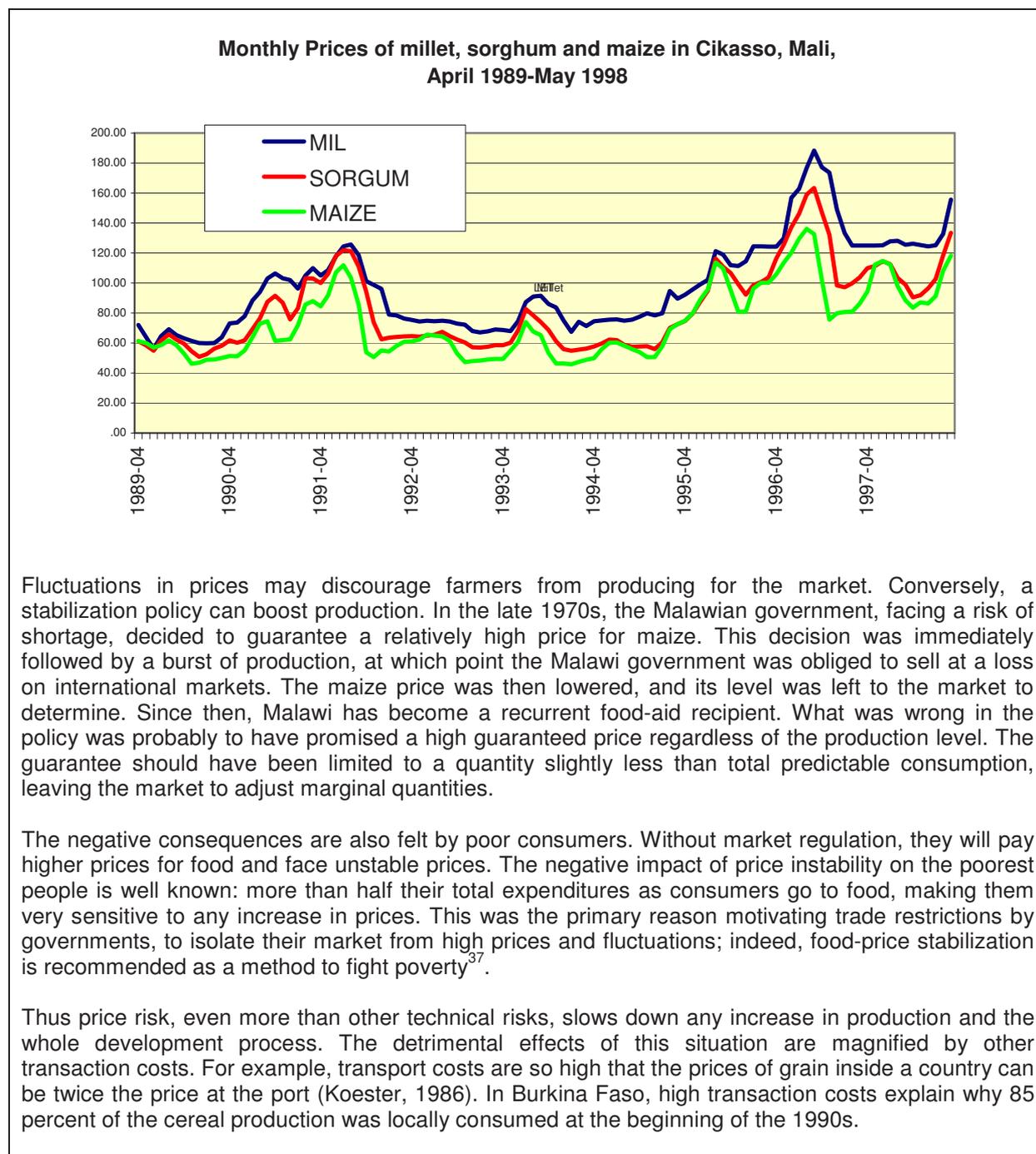
All three of these biases tend to discriminate against agriculture. Politicians are used to taxing the sector heavily; public spending focuses instead on education and defense; and deregulated markets do not perform because of intrinsic markets failures such as missing markets in insurance and credit. But should we conclude that agriculture is doomed to be the "black sheep" of development policies? History proves that markets and public intervention can be mutually supportive for growth-led food security enhancement led by agricultural growth. Instruments designed to secure farmers in their investment decisions are prominent

³⁵ Newberry and Stiglitz (1981) note that prices and yields instability could cancel each other out, because of their opposite effect on farmers' income. This is true if low prices are actually caused by high supply from the farmers under consideration. But low prices can be (and are, most of the time) caused by many other events.

³⁶ Specifically, the average of growth of the most "unstable" series is about 4 percent a year, while it is 6 percent a year for the most stable. This difference is significant in terms of variance analysis, the main difficulty in the study being the definition of stability. See Boussard and Gérard (1995).

among the policy measures employed by all successful agricultural development endeavours, as we shall see in chapter 5.

Box 4.3: Agricultural market instability in sub-Saharan Africa



³⁷ Timmer, 2000.

Chapter 5: Selected success stories from around the world

Until now, despite a few illustrative examples, food security and development problems have been dealt with here from an almost purely theoretical point of view. To complement this theoretical perspective, this chapter reviews a few actual cases.

The first case presented is the Marshall Plan – the recovery programme for Europe after the end of World War II, which was highly successful. The second example is the Latin American experience. It has not been a complete success, for many Latin American countries continue to suffer from economic crises and are still considered developing countries. We will examine the shortcomings of Latin American growth and the pitfalls into which these countries fell. The third and last case is the “Asian miracle”: Asia is famous for its very high growth rates. Japan, almost ruined after World War II, managed to turn itself rapidly into a major economic power. Korea followed almost the same path, and other Asian countries, although perhaps not at the same level, still performed well, and are close to entering the “club” of developed countries. The underlying question is whether, and how, Africa could follow a similar growth pattern.

5.1 Europe and the “Marshall Plan” (1947-1951)

5.1.1 Europe after World War II

At the end of World War II, most of Europe’s infrastructure was destroyed or out of service. Agriculture was also in bad shape after a period of neglect during which peasants had been enlisted or conscripted as soldiers. In March 1946, according to an important American official, Europe was in need of “wheat in April, or coffins in June”³⁸. U.S. emergency aid came in abundance at that time, facilitated by the logistics that had been set up for the war. Boats and harbours hastily established for the transportation of military equipment were made available for transport of food aid and equipment. Aid was distributed through a gigantic food-rationing organization, which, in fact, had been set up in all belligerent countries at the very beginning of the war³⁹.

Yet, for the same reasons discussed earlier (see chapter 2), aid was not considered to be a sustainable solution for feeding Europe, let alone eliminating poverty. Besides, an economic appraisal of the situation revealed that the deep roots of the crisis were not entirely war-related. Since the start of the twentieth century, labour productivity in Europe had been lagging behind that of America. The main reason was slow capital accumulation. To increase the capital-to-worker ratio, the only solution was to save and invest. But even with a high savings rate, the efficiency of capital goods manufacturing was questionable due to the low productivity of workers. Capital goods had to be imported to increase productivity. Because gold and currency reserves had been largely squandered during the war, it was not possible to pay for these imports. The similarity with some characteristics of the situation in Africa today is striking.

The Americans themselves urged European countries to take care of their problems, if possible on a regional basis, because, first of all, it was necessary to present a unified front against Communism, and, second, economies of scale were expected from a larger market under concerted organizational rules. The Marshall Plan (from the name of Secretary of

³⁸ Fiorello La Guardia, former mayor of New York, quoted in Bossuat, 1997.

³⁹ “Tickets” were issued and distributed to households according to their composition, giving each of them an entitlement to acquire a certain quantity of food. Food merchants were not allowed to sell without tickets. The total amount of tickets distributed corresponded more or less to the national food availability. Although, obviously, the system nurtured “black market” and illegal parallel food trade, and at the same time was a heavy burden for administrative bodies, it was relatively efficient in guaranteeing the poorest a minimum access to food.

State General George Marshall, who solemnly made the offer on June 5, 1947, in a famous speech delivered at Harvard University) was the answer to these problems.

5.1.2 The Marshall plan

The plan had two sides: a financial side, whereby a considerable amount of financial resources was put at the disposal of governments; and an organizational side, because these sums were made available only if European governments were ready to follow the advice of the international organization – the OEEC, now the OECD – in charge of administering the plan. Among the requirements, the most important was that European governments set up coherent economic policies with well-targeted priorities, and a careful allocation of the resources provided to purchase capital goods from the United States. As can be seen from this brief description, the spirit of the plan was far from pure liberalism, and reflected the uncontested belief that public policy could yield successful economic results. The main idea was to reap the benefits of harmonious synergy between state interventions and private enterprise initiatives.

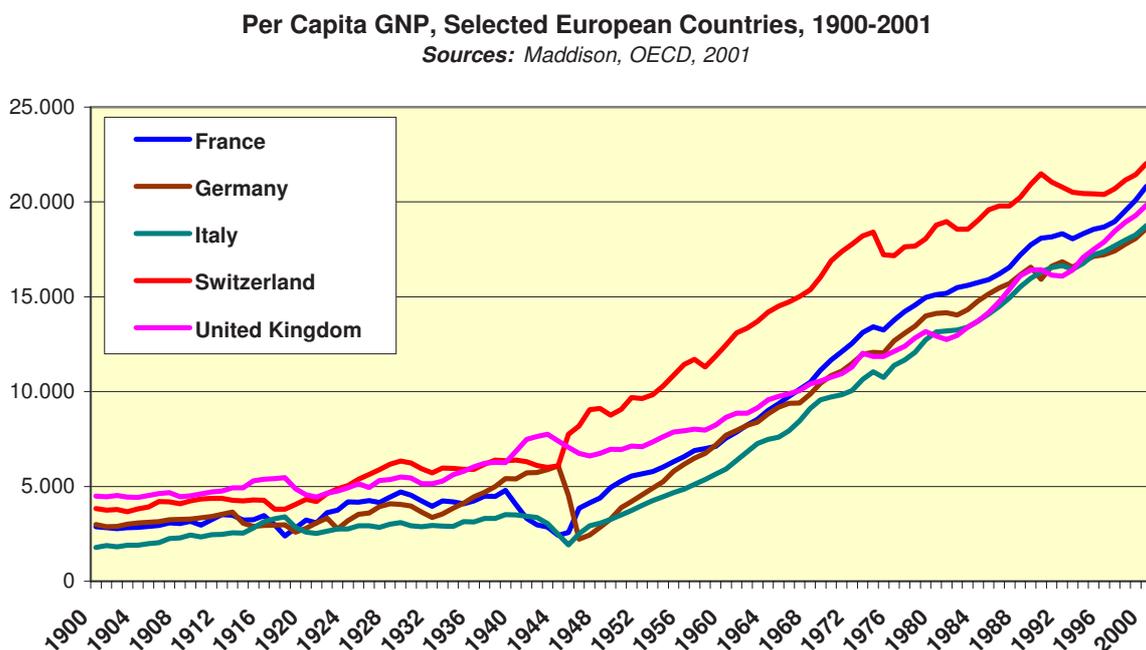
At the same time, in most European countries, “economic plans” were elaborated independent of, but complementary to, the Marshall Plan. They were designed to promote a state-supported economic recovery, but were only indicative plans. Ultimately, they left the market to determine prices and quantities, as well as the success or failure of businesses. Planning boards were established where private-sector leaders, government officials and trade union executives could exchange ideas and projects, check the validity of their expectations and solve conflicts. In these boards, the state was the ultimate arbiter, because it controlled foreign trade through the ministry of finance. In this context, the Marshall Plan was a strategic instrument in the hands of the ministries of finance, for it allowed much greater purchases than what would have been possible otherwise⁴⁰.

It is difficult to know where exactly the key to success lay. It has been argued that the amount of the transfers – about 1 percent of American GNP, or 3 percent of European GNP – was too small to have exerted any significant influence⁴¹. Other authors, by contrast, celebrate the Marshall Plan as a unique historical achievement. Beyond the policies and institutions, the general mobilization of the population and stimulation of the will to succeed were also certainly important factors for which the plan may have been a catalyst. What is certain is that European economies quickly and surprisingly recovered from the war. Production reached the prewar level as early as in 1949 although per capita income in Europe matched that of American in the early 1970s, long after the end of the Marshall Plan. Figure 5.1 below shows clearly the boost of growth that followed the disaster of 1944-45. It shows that Switzerland, unaffected by the war, also benefited from the boost. The worst performer was Britain, for reasons still to be elucidated; although British income per capita was the highest in 1945, it was the lowest in 1990.

⁴⁰ Yet the discrepancy between the export capacity and the financial needs of European reconstruction must not be exaggerated: in France, for instance, in 1948, for 1954 the plan estimated an export capacity of \$10 billion, while the need for imports was \$12 billion. The Marshall aid provided almost exactly the required \$2 billion shortfall, which gave the required boost, in the absence of which the whole system would probably have collapsed.

⁴¹ See Bradford De Long and Eichengreen, 1991.

Figure 5.1: One century of European growth



5.1.3 The case of Japan

The Marshall Plan was restricted to Europe because the U.S. Congress objected to extending it to Asia. Yet the situation in Japan was quite similar to Europe. The Truman administration found solutions to overcome the reluctance of the Congress. In fact, the Marshall Plan recipes were also applied to Japan and for a longer period, because the Korean War, after 1952, encouraged the American government to do everything possible to keep Japan free of Communism. The economic results were quite similar to those in Europe, if not better.

In Japan, government supervision of the economy was even stronger than in Europe. The famous MITI (the Ministry of Economy) not only set priorities and allocated foreign money to firms, but also provided “advice” regarding market shares of various companies. In so doing, it made some conspicuous errors – for instance, attempts to prevent Honda from building cars, on the ground that this firm had to stick to its traditional product, motorbikes. Errors of this size and nature are unavoidable for this kind of agency. On the whole, however, MITI was extremely successful, allowing Japanese firms to meet quality standards that resulted in their achieving the strong positions they still occupy today on the world market.

It is now almost unanimously admitted by economic historians that this achievement would not have been possible without the association of the MITI operations with American aid. Thus, in Japan as well as in Europe, intelligently spent foreign aid was extremely productive, leading to economic development despite adverse conditions. Another striking element is the public intervention/private sector combination. Why shouldn't a similar “virtuous circle” not begin in Africa, through the NEPAD process?

It is difficult to answer such a question in a few words. According to some observers, an essential ingredient present in Europe and in Japan in 1945 was human capital. And it may be that insufficient human capital is one of the key constraints facing Africa. This would suggest giving highest priority to the development of knowledge and skills in the continent.

5.2 The Southeast Asian experience

The rapid and sustained economic growth exhibited by the Asian “Tiger” states – Hong Kong, Singapore, South Korea, Taiwan – since the 1960s, followed a decade later by some ASEAN countries – Indonesia, Malaysia, Thailand and Vietnam – is an outstanding example of success not only with respect to economic development but also to poverty alleviation and food security improvement. In the late 1960s, these countries were importing increasing quantities of food. Experts were very pessimistic about their ability to feed their growing populations in the near future. However, over 25 years later, most of them exhibit great progress in food security and poverty alleviation. Moreover, most of these countries have become self-sufficient in staple foods. Despite the diversity of these countries, common factors explaining these impressive performances can be identified.

5.2.1 Development strategy, trade policy and the role of the state

In most of these countries, governments played a key role in the development process: defining objectives to be attained and strategies to be applied through development plans, providing infrastructure, handling selected economic activities and encouraging private investment. In addition, whenever land distribution was too inequitable, land reforms were undertaken. Although government intervention was a common feature, policies were not all the same. They were in general carefully adapted to each specific case. It is possible, however, to identify a few general patterns.

At the beginning of the development process, emphasis was put on an import-substitution strategy. This was due to the necessity of meeting the basic needs of an increasing population in a situation where foreign exchange was lacking. Public expenditure was concentrated on investment in rural infrastructure such as roads, markets and irrigation; on the funding of extension services; and implementing mechanisms to stabilize agricultural prices to boost agricultural production to meet domestic food demand. During this phase, farmers were generally highly taxed in order to finance a high level of public expenditure while maintaining a balanced budget. In Taiwan, for example, this taxation was implemented through compulsory delivery to the government at prices about 20 percent lower than market prices. Land tax was also levied, with the double advantage of creating government revenue and an incentive for farmers to cultivate the best land. Simultaneously, the government stabilized the price of rice through public storage and rice procurements. By providing price stability and physical rural infrastructure, the policy compensated the agricultural sector for the bias generated by the taxes imposed and the overvaluation of the exchange rate. With fixed nominal exchange rates, the overvaluation of the exchange rate – typically imposed for lowering the cost of imports that constituted a large share of investment – indirectly taxed the agricultural sector⁴².

During this period, development was mainly based on the industrial boom, concentrating on labour-intensive industries in line with the comparative-advantage theory. In order to benefit from foreign technology while protecting the new industries from foreign competition, free port areas open to foreign investment and free from the domestic-market protection were established. Availability of an educated labour force, macroeconomic stability and sufficient provision of public goods created an attractive context for foreign investment. Because of productivity gains in agriculture, the formerly agricultural labour force was more and more able to engage in industrial production. National economies shifted from an agriculturally oriented economy to an industrially oriented one.

⁴² See Ahmed and Delgado (1993), or Collier and Gunning (199*).

In its second phase, as more and more rice needed to be imported to satisfy domestic demand⁴³, taxes imposed on the agricultural sector were reduced in order to encourage production. By then, the growing industrial exports were sufficient to finance public expenditures without taxing agriculture. In South Korea, for example, the government concentrated on rural electrification, raising the proportion of electrified rural households from 40 percent in 1972 to 90 percent in 1977, and maintained domestic rice prices above the international price. This policy was successful in raising production to a level sufficient to supply enough food and industrial goods to satisfy domestic demand. However, as production grew, the size of the market quickly became too small, and then trade policies were modified and the development model shifted to to an export-oriented one.

Despite the diversity of the countries in the region, the common factors appear to be:

- A mix of market mechanisms and of government support to agriculture.
- The evolution from an initial high taxation of the agricultural sector to progressive subsidization.
- The emphasis on price stability and the development rural infrastructure.

5.2.2 The key role of agricultural policies: public goods provision and market regulation

The development strategy adopted in most of these successful countries focussed on:

- Improving the functioning of agricultural markets, through the stabilization of agricultural prices.
- Providing the necessary infrastructure, economic incentives and extension services to facilitate an increase in agricultural labour productivity.

One important characteristic of government intervention in these countries is that it was limited to avoiding market failures and trying to complement private economic activities, rather than substituting public activities for private ones. The idea was to achieve relative stability in agricultural prices and to improve the access of farmers to the market in order to increase economic opportunities generated by trade, while at the same time protecting the poor.

Stabilization of food prices in Asia has been based on public storage aimed at achieving a guaranteed floor price for producers and preventing sharp increases in food prices for consumers. Such was the case for rice in Taiwan and Thailand. In Thailand, the price of rice was never completely isolated from the world market, however. Until the 1990s, imports and exports were subject to licensing. If the domestic price was low, export licences were auctioned to international traders, resulting in a price increase. If it was high, import licences were auctioned to bring down the price. In this way, the domestic price was neither completely stable, nor too far from the international price; but it was also much more stable than the world price for rice. This mechanism helped to make sound investments in mills and irrigation. The current Thai competitiveness in paddy production can largely be ascribed to this policy.

In other countries of the region, such as South Korea and Indonesia, import bans and direct subsidies were implemented in order to protect the domestic market in agricultural products and to maintain domestic prices above the world price. But this does not mean that the commodity chain was in the hands of public companies; private operators were collecting

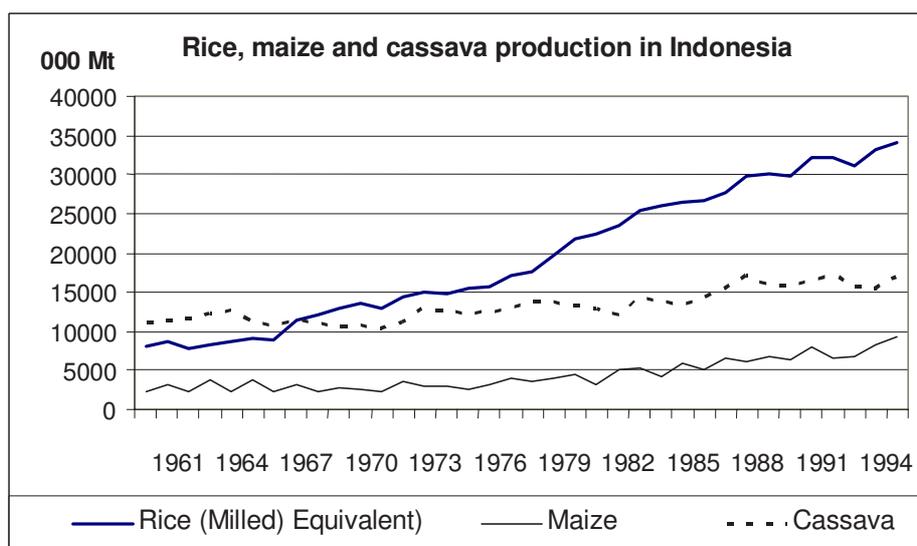
⁴³ For example, in South Korea rice imports represented 2 percent of domestic demand in 1962 and 18 percent in 1969 (Chaponnière, 1983).

and storing grain. They were given the guarantee of a government rescue in the event that they could not operate on a commercial basis. As a result, public intervention in agricultural markets generally affected only a small volume of the production marketed and it complemented private activities, thus avoiding too large a fluctuation in domestic market prices.

Finally, public investment, not only in infrastructure such as roads and irrigation facilities, but also in human capital through extension services, played an important role in the success of the “Green Revolution” in Asia. Price incentives also stimulated growth in rural areas. As rural income increased, it created demand for goods and services in rural areas, acting as a source of growth and increased employment. Because rural wages and employment increased, the impact on poverty alleviation was strong.

Figure 5.2 illustrates the success of Indonesia. In the second half of the 1970s, the country had regularly been the world’s largest rice importer. During the world food crisis of 1973-1974, Indonesia found itself unable to buy enough rice on the world market. Government intervention was subsequently intensified and Indonesia promoted the adoption of high-yielding rice varieties, coupled with an increased use of fertilizers at subsidized prices, an expansion of the area under irrigation and the provision of a stable market environment through the stabilization of the rice price and promotion of extension services. With these measures, Indonesia followed the classic Green Revolution pattern.

Figure 5.2: Major agricultural production in Indonesia



Source: based on FAOSTAT

The agricultural policy followed in most Southeast Asian countries was based on public investment in infrastructure and human capital associated with price stabilization and price incentives. It contributed to raising rural household productivity and income and also increased the national food supply. Far from discouraging private trade activities in agriculture, the market-regulation policy succeeded in increasing trade. In following such a strategy, Southeast Asian countries managed, within one generation, to escape from hunger and poverty and to achieve national food security (Timmer, 2000).

5.2.3 Development lessons from the East Asian miracle

The East Asian miracle was based on a combination of factors: a high savings rate interacting with high levels of human capital in a stable market environment (See Stiglitz, 1996). Well-designed government intervention, which complemented markets rather than replacing them, played a key role.

The high saving rates in the region could be explained by cultural factors (Stiglitz, 1996). But the key determinant of success was that savings were efficiently used and the technological gap was quickly reduced. These countries, in line with the example of most developed countries, followed a mixed strategy in which government played an important role, correcting market failures and creating the conditions for an optimal operation of markets. Government investment in education, as well as in physical and institutional infrastructures, contributed to the increase in the return on private investment, thereby stimulating investment and promoting growth. This made the country attractive for foreign investors and facilitated rapid technology transfer.

At this point, the problem of funding government expenditure needs to be raised. In Asian countries, infrastructure inherited from the colonial era,⁴⁴ as well as massive foreign aid, played an important role. For example, Taiwan and South Korea had relatively good agricultural infrastructure (roads, irrigation infrastructure and market facilities) and industrial equipment (textile and agribusiness plants) before World War II. These countries were indeed already considered as remarkable production areas for food and tropical commodities, as well as for industrial products. As in the case of the Marshall Plan in Europe, the context of the Cold War in the 1950s was also a key factor in massive American aid. This aid was very efficiently used, initially for postwar reconstruction and later, as pre-war production levels were again reached, to promote further economic development. From the early 1950s to 1965, U.S. economic aid greatly contributed to postwar rehabilitation in Taiwan, helped offset budget deficits and financed around 30 percent of total imports. South Korea was also one of the major recipients of U.S. aid after the partition of the country. Similarly, Japan provided massive aid during postwar reconstruction and overtook the U.S. as the region's largest commercial partner in the late 1960s (Mao and Schive, 1995).

Finally, if the subsidy-seeking theory implies that government intervention systematically contributes to inefficient resource allocation, the East Asian experience shows that this is not always the case. On the contrary, well-designed and flexible government intervention can be highly adaptive to a changing context and can contribute to quick economic growth. In these countries, the government role was confined to:

- Designing and implementing policies to ensure macroeconomic stability, which is an essential condition for economic development because it reduces risk associated with economic activities.
- Making markets work more efficiently or creating markets where they did not exist. Capital markets were particularly weak in Asia and so government created institutions to promote savings and encourage investment in specific sectors.
- Ensuring political stability and creating an atmosphere conducive to private domestic and foreign investment. Availability of public goods played a major role in industrial development. High returns on capital and a well-educated workforce made these countries attractive to foreign investment, which increased the pace of development.

⁴⁴ Taiwan was part of China until 1949 while Korea was colonized by Japan between 1910 and 1945.

- Export-oriented industry was supported by an industrial policy that sometimes protected industries during their infancy.

5.3 The Latin American experience

Trade regimes in the region had a strong import-substitution and an anti-export bias from the 1960s to the 1980s, which aimed at changing the development strategy from a primary product-based growth to growth based on the development of the manufacturing sector. This policy was supported by considerable investment in infrastructure. There was a sharp contrast between import-competing activities and export-oriented sectors – and this contrast remains today. Imported goods were protected: for example, even during the decade spanning 1985 to 1995, the average Nominal Protection Rate (NPR) was still 18.7 percent. By contrast, exported goods were taxed across the board: during the same period, the average NPR was -7.7 percent. For some countries, there were significant policy-induced transfers of income out of the farming sector (even if some controversies remain over their net value). For the period 1985-1990, prior to the structural-adjustment reforms, transfers out of agriculture amounted to between 12 and 23 percent of agricultural GDP in Argentina, the Dominican Republic, Ecuador and Uruguay. Brazil and Paraguay extracted only small amounts from agriculture. This reflected, in part, the new political scene, in which power was progressively taken from the traditional landowners by industry-related groups. Those input subsidies and non-price transfers that existed in favour of agriculture did not really compensate for the negative transfers imposed on the sector. During the same years, Chile (which had reformed much earlier, in the mid-1970s) and Colombia were subsidizing their agriculture, from 5 percent to 8 percent of agricultural GDP. Among the support instruments utilized, marketing boards (public monopoly) for staples, import quotas and variable levies (price band) were widespread (Spoor, 2000). This approach was initially successful in developing an industrial base in the region.

In the aftermath of the second oil crisis of the late 1970s, however, the Latin American debt crisis erupted. Interest rates rose sharply following a decade of vast borrowing of cheap capital, while an international recession brought a drastic fall in prices of exports. The primary objective of trade liberalization programmes in the 1980s was to reorient the economy of Latin American countries towards those sectors where their traditional comparative advantage resided. It was not merely a question of eliminating explicit export taxes, but also of reducing the implicit taxation resulting from distorted relative prices that favoured imported goods and, indirectly, non-tradables.

Throughout most of the 1980s, price policies in many Latin American and Caribbean economies, including Argentina, Brazil, Colombia and, to a lesser degree, Mexico, remained unchanged. With the elimination of most of the direct market-intervention instruments, intervention in agricultural markets was minimal by the late 1980s and early 1990s. In some cases, price controls were replaced by the more indirect price bands (e.g., Brazil, Chile, Colombia and El Salvador), which focused on dampening the effects of extreme world market price fluctuations on the domestic market through the use of variable import tariffs (both negative and positive). Other countries retained the minimum price policies, but state agencies lost their capacity to buy market surpluses, so that minimum prices had only a token significance. Finally, the liberalization of input and output markets, deregulation and openness toward external markets were accompanied by a transition from traditional redistributive land reform policy to the establishment of land markets.

5.3.1 *Agricultural performance before and after reform*

While Latin America's GDP grew at high and sustained average rates of 5.9 percent in 1970-1975 and 5.5 percent in 1975-1980, the agricultural sector did reasonably well with growth rates of 3.4 percent and 3.6 percent, respectively. Table 5.3 shows annual average rates of

growth of agricultural value-added at constant prices in Central America⁴⁵. For all five countries, the most rapid rate of growth was during the years of most intense implementation of the import substitution strategy, 1970-74, or in the previous decade when such policies were being put into place.

⁴⁵ Source : Weeks (1998).

Table 5.1: Summary of policy regimes in Central American countries, circa 1994⁴⁶

Policy Area	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Exchange rate pre-liberalization	Fixed to US dollar	Fixed to US dollar, market segmented by type of transaction	Fixed to US dollar	Multiple exchange rates	Fixed to US dollar, (multiple rates), large black market premium
Exchange rate post-liberalization	Free, with some Central Bank (CB) intervention	Free, with some CB intervention	Flexible, administered	Free, with some CB intervention	Flexible, administered (crawling peg)
Tariffs pre-liberalization	Rates to 100%, import surcharges, tariff exemptions	Tariff range 5-35%, with 50% for certain products	Tariff range 0-40%, surcharge on imports	Tariff range 0-120%, surcharge on imports	Tariff range 4-253%
Tariffs post-liberalization	Large tariff reductions, harmonization to CA Tariff System (0- 20%); special tariff rice	Large tariff reductions, harmonization to CA Tariff System (0-20%)	Harmonization to CA Tariff System (0-20%)	Tariff range 0-40%, harmonization to CA Tariff System (0-20%)	Harmonization to CA Tariff System (0-20%)
Import restrictions pre-liberalization	Deposits for imports, licences for basic grain	Permits for basic grain	Licences for basic grain, wheat, sugar, seeds, milk, fruits, agricultural inputs	Licences from central bank for all imports	Licences for all imports
Import restrictions post-liberalization	Licences required for poultry and dairy products	Licences for sugar and molasses	Restrictions for cattle and processed meat	Licences for sugar and poultry	Restrictions on sugar imports
Export restrictions/incentives pre-liberalization	Permits to export grain, seeds, sorghum; export taxes	Permits to export grain, export taxes	Permits for most agricultural exports (not coffee)	Permits for all exports, export taxes, "temporary" export surcharge	Restrictions on foreign exchange retention by exporters, permits for most exports
Export restrictions/incentives post-liberalization	Restriction on wood exports; export taxes on coffee based on world price (not charged in 1993-94)	Restrictions on exports to CA of cotton, sugar, coffee and wheat flour; export taxes eliminated	Elimination of export licences; export taxes of coffee & bananas (1 & 1.5% of value)	Licences required for sugar, edible oils and poultry; export taxes on coffee (non-processed, if world price above US\$70), bananas (US\$50 per box), sugar (if world price above US\$15)	No licences, no export taxes

"Pre-liberalization" refers to the situation just prior to the following dates: Costa Rica 1985, El Salvador 1990, Guatemala 1985, Honduras 1990, and Nicaragua 1990. CA: Central America; CB: Central Bank.

⁴⁶ **Source:** Weeks, 1998. Aspects of the previously dominant package included minimum price programmes, "buyer of last resort" policies, consumer subsidies and even large-scale procurement programmes. Radical reforms were only implemented in the 1990s. In Brazil, for example, the combination of various supportive policies for agriculture (e.g., minimum prices, subsidized credit and state procurement) remained in force until 1987, when the first reform programmes were implemented. In Colombia, such practices continued through the early 1990s. In Chile, *Comercializadora de Trigo S.A.* (COTRISA) continues to purchase grain.

Table 5.1 : Summary of policy regimes in Central American countries, circa 1994 (con't)

Policy Area	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua
Post-liberalization	Profit margin regulations for: rice, beans, white maize, molasses; price setting for sugar, coffee, bread flour, poultry	No price controls or guaranteed prices;	No price controls or guaranteed prices;	No price controls or guaranteed prices except for sugar & coffee (low quality);	No price controls or guaranteed prices;
State marketing pre-liberalization	National Production Council (CNP) intervened in grains market (except rice) through domestic and external sales and purchases	Food Regulator Institute (IRA) intervened in grains market through domestic and external sales and purchases	Agricultural Marketing Institute (INDECA) intervened in grains market through domestic and external sales and purchases	Agricultural Marketing Institute (IHMA) intervened in grains market through domestic and external sales and purchases; State monopoly on grain imports	National Basic Food agency (ENABUS) active on grains market through domestic external sales and purchases, owned 80% of storage facilities; state controlled 55% of all imports & 98% of all exports
post-liberalization	In beans and white corn (minor)	Marketing agency closed, state monopoly on trade in coffee and sugar eliminated, price band for yellow maize, rice and sorghum	No state participation in basic products trade, national price band for yellow maize, rice and sorghum	State supplier of basic products imports small amounts of rice, sugar, chicken, maize; price band for yellow maize, rice and sorghum	State role reduced to a minimum, price band for yellow maize, rice and sorghum

Note: "Pre-liberalization" refers to the situation just prior to the following dates: Costa Rica 1985, El Salvador 1990, Guatemala 1985, Honduras 1990, and Nicaragua 1990.

Table 5.2: Characterization of policy regimes by period, 1960-1995

Periods Country	1960-1969	1970-1979	1980-1984	1985-1989	1990-1995
Costa Rica	Shift towards import substitution	Import substitution interventions	Moderate liberalization & deregulation	Liberalized (from 1983)	Liberalized
El Salvador	Shift towards import substitution	Import-substitution interventions	Strong intervention	Moderate liberalization and deregulation	Liberalized
Guatemala	Shift towards import substitution	Import-substitution interventions	Moderate liberalization & deregulation	Continued liberalization and deregulation	Liberalized
Honduras	Minor import substitution policies	Mild Interventions (not part of regional import substitution)	No change	Little change	Major liberalization and deregulation
Nicaragua	Shift towards import substitution	Import-substitution interventions	Strong intervention	Moderate liberalization and deregulation	Major liberalization and deregulation
Comments	CACM officially begun in 1963	CACM at its peak in first half of decade (without Honduras); insurrection in Nicaragua 1977-79	Collapse of the CACM; war in El Salvador and Nicaragua	War continues in El Salvador and Nicaragua, ceases in both countries by end of decade	Government changes in Nicaragua (1990)

Source: Weeks, 1998. CACM stands for Central America Common Market.

The rural population of Latin America and the Caribbean was still nearly 43 percent of total population in the first half of the 1970s and around 35 percent a decade later. However, individual countries followed divergent economic evolutions. Spoor (2000) classified them according to their patterns of crisis and recovery: early, late or prolonged crisis during the 1980s, followed (though not always directly) by adjustment, with swift or slow recovery. Bolivia, Chile, Colombia, and Costa Rica experienced an early crisis with a swift recovery that was already evident in the 1985-1990 period. Brazil and Mexico show a pattern of decline that culminated in a late crisis with slow recovery. In the case of Brazil, the GDP growth rate dropped to 0.9 percent in the first half of the 1980s, but this was moderated by a surprisingly good performance in agriculture with a 3.8 percent annual sectoral GDP growth. Finally, for various reasons (including political turmoil), Argentina and Peru underwent a prolonged crisis in the 1980s.

Striking examples of both positive and negative impacts of market and trade liberalization can be seen in the case of Brazil. The so-called “conservative modernization process” of Brazilian agriculture in the 1990s led to a large increase in production, but has also resulted in social exclusion and high environmental costs. The creation of the Ministry of Agrarian Development (MDA) in 1993 can be seen as a recognition of “family agriculture”, but the best way to support its development is still the subject of debate. Modernization and competitiveness are two topics at the heart of this debate. An analysis of the distribution by the Brazilian national program to support family farms (PRONAF) of agricultural credits for family farmers from 1996 through 2001 (Tonneau, de Aquino and Teixeira, 2005) concludes that the internal logic of the programme and its implementation already contain the criteria

that lead to the exclusion of the poorest family farmers (Table 5.2.). The practical result is a “new inequitable modernization process” in Brazil’s rural areas, which contributes to even greater social exclusion and regional differences.

Box 5.1: The Brazilian national programme to support family farms (PRONAF)

The Brazilian national programme to support family farms (PRONAF) was implemented in 1994 to promote the productive capacity of the rural poor by providing credit to this population, which had no previous access to formal bank credit. This policy was aimed at reducing inequity and poverty in Brazilian society. It was a huge innovation, because agriculture had traditionally been based on large landholdings. The first beneficiaries were small family farmers whose activity was based mainly on family labour, with a maximum annual income of 27 500 *real*, at least 80 percent of which came from the property. The state commercial banks were responsible for the financial intermediation. Basically, the programme relied on interest rate subsidies, which were necessary in the Brazilian macroeconomic context (Real Plan). Although the number of beneficiaries was significant, until 1998 the program favoured smallholders of southern Brazil, who had higher incomes and better market integration, because banks’ risk-aversion still kept them from lending to the poorest farmers. Demands and protests by several groups led to the programme’s extension to populations with lower annual incomes through larger interest-rate subsidies. Despite the increasing number of contracts, the programme has several drawbacks. Among them is its hugely increased cost, particularly through bank fees, including high administrative and bank spread cost (both paid by the government). Another is that for the poorest family farmers, the policy is in the end the equivalent of a direct subsidy and has not succeeded in guaranteeing a long-term link with formal banks.

Source: Abramovay and Piketty (2005).

Box 5.2: The development of a capital-intensive production model in Mato Grosso (Brazil)

The state of Mato Grosso has recently become the leading soybean producer in Brazil. The growth of related activities (crushing, trade in machinery and input products, transportation and storage etc.) has also been spectacular. Among the factors explaining this boom, agricultural credit has played an original and very important role. At the same time as the state is transforming its intervention modes, the private sector is taking over functions no longer performed by the state. The agricultural financing system consists of a mix of public money (principally for long-term investments) and private funds (productive expenses, such as seeds and other inputs), together with the producers’ own funds. The risks linked to the development of this capital-intensive production model make this system weak and unstable. The expansion of large-scale soybean farming in this frontier region may thus make producers dependent on multinational firms and have a significant social and environmental impact. The Brazilian government has lost much of its ability to affect the Mato Grosso soybean industry, except as regards infrastructural investments.

Source: Bertrand, Cadier and Gasquès (2005).

5.3.2 Summary findings from experience in Latin and Central America

Four main points emerge from the agricultural development experience in Latin America:

- First, the import-substitution industrialization (ISI) model, which was implemented throughout much of the region during the postwar period until the early 1980s, discriminated against agriculture through exchange-rate overvaluation, export taxes, protection of the industrial sector and direct market interventions, but was very successful for a period in terms of overall growth. The overvaluation of the exchange rates brought a spurt in imports

during the 1970s but poor export performance. The agricultural sector did reasonably well in the 1970s and the first half of the 1980s despite price discrimination, and benefited from a general infrastructural development and a support package that included public investment, subsidized credit and agricultural services.

- Second, liberalization reforms had a negative impact on sectoral performance as a consequence of the elimination of subsidies, credit and technological support services. Sectoral data suggest that at least in some instances, earlier public interventions in market-led modernization processes paid off (e.g., Chile and Costa Rica). In other cases, in which long-term public support was followed by a process of market liberalization and deregulation, recovery came only with the use of careful measures of "re-regulation" and risk-mitigating measures during periods of contraction (e.g., Bolivia, Brazil and Colombia, but also Chile).
- Third, the new development model for Latin America and the Caribbean, which was introduced with the structural adjustment of the 1980s and early 1990s, is quite exclusionary⁴⁷, leaving the poor behind. The dynamics of economic growth are largely to be found among commercial farmers who have been able to establish linkages with foreign (mostly transnational) companies, thereby integrating themselves in domestic and international agribusiness complexes. The early optimism about the options for small-scale farmers and peasants to modernize through contract farming for agribusiness did not really translate into reality.
- Finally, there are indications that the gap (in levels of technology, productivity and income) between commercial and entrepreneurial farmers and the peasant sector, considered by some as "non-viable", has grown larger than ever. Policies directed toward modernizing the peasant sector and mitigating the human costs of economic adjustment are generally absent.

The historical examples given here help indicate the objectives that need to be targeted by agricultural policies in order to sustain food security and income growth. Public goods provision, market stability, appropriate technical programme development, agricultural services provision, activities to mobilize economies of scale, provision of off-farm job opportunities and regional or international market integration are the key objectives implicit in the success stories reviewed.

Country experiences demonstrate that contrary to the conventional wisdom reported in the previous chapter, agriculture *can* be a powerful engine of food security and growth. Provided that agricultural policies are targeted toward explicit market failures, such as those listed in the first column of table 5.5, then agriculture can become an efficient engine for growth. This conclusion is similar to many other findings and in line with the 2003 Pretoria Conference on past successes in African agriculture, in which policies based on correcting market failures have delivered outstanding outcomes.

⁴⁷ M. Spoor (2000). *Two Decades of Adjustment and Agricultural Development in Latin America and the Caribbean*. Serie Reformas Economicas 56. Document prepared for the project "Growth, Employment and Equity: Latin America in the 1990s", financed by the Government of the Netherlands (HOL/97/6034), on which this section is based.

Table 5.3: Food security channels, countries' experiences

Objective	Channelled effects	Impact	Country or region
Rural public good provision	Risk reduction Improved access to solvent demand	Growth in labour productivity and solvent demand	SE Asia (1970s, 80s) Europe, Japan (1950s)
Market stability	Specialisation, credit cost reduction, adoption of innovations	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Technical itineraries development	adoption of innovations, intensification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Agricultural services provision	adoption of innovations, intensification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Scale effect	Unit cost reduction, diversification	Growth in labour productivity	SE Asia (1970s, 80s) Europe (1960-90s) Latin America (1960s, 70s)
Off farm job opportunities	Real income increase	Growth in solvent demand	SE Asia (1980s, 90s) Europe (1950-70s) Latin America (1980s, 90s)
Regional/international markets integration	Market extent growth	Growth in solvent demand	Europe (1960-90s) Latin America (1980s-)

Box 5.3: Successes in African Agriculture

The 2003 Pretoria Conference on “**Successes in African Agriculture**” demonstrated that African prospects are not necessarily bleak. The review of the case studies of African successes prepared for the conference isolated some “seeds of hope” on which African stakeholders could rely and that, whenever possible, could be replicated to shape the future. The summaries of these case studies are striking. The 12 success stories investigated differ widely in terms of instigators of change, points and levels of intervention, levels of subsidy involved, nature of commodities (food or cash, export or domestic market), regional diversity, duration and scale. The targeted market may vary (domestic or export); incentives varied from being granted on inputs to outputs, and from upstream to downstream activities. No explicit form of farm support emerges from the cases analysed. Even the question of subsidies is unclear: in some cases large public subsidies appear to be part of the conditions for success (in the cases of maize, cotton and dairy), in others not (cassava, horticulture and natural resource management). Overall prerequisites for success identified include: good governance; sustained funding for agricultural research and extension; soil and water conservation; replication of proven commodity-specific breeding and processing successes; marketing and information systems; vertical supply chains; and regional cooperation in trade and agricultural technology⁴⁸. These results largely conform to the arguments developed in this report.

⁴⁸ IFPRI 2020 Focus, 2004.

Table 5.4: Overcoming market and government failure for agricultural productivity growth

Market failure	Overcoming market failure	Overcoming government failure
Public goods	Sustained funding for agricultural research and extension Transport, communication, storage ("market") infrastructure provision	Good governance State development
Externality	Soil and water conservation	Good governance State development
Imperfect information	Marketing and information systems Vertical supply chains Regional cooperation in trade and agricultural technology	Good governance State development
Market power	Restoring competition and investment-incentive climate	Good governance State development
Incomplete market	Risk reduction	Good governance State development

Public intervention to correct market failures can sometimes make the situation worse, for example in cases of government failure or poor governance. Good governance is a cross-cutting issue that has implications for all other policies and activities, and it means having legitimate conciliation and negotiation structures, upon which renewed partnerships can be built, with transparency and accountability during implementation. In all cases, efficient and legitimate states are absolutely necessary for long-term and sustainable growth and development.

Direct transposition to Africa of past food policies from other countries is of course dubious and doomed to fail. What seems more promising is the better understanding of the channels through which food security can be achieved that such examples can provide. Successful experiences isolate two impact factors common to situations that are otherwise so diverse, namely, labour productivity and solvent demand growth. Their relevance in the African context will be examined, before some possible policy implications are discussed.

Chapter 6: Channelling food security through labour productivity and solvent demand growth

Among food insecure households, incomes are generated by directly selling goods produced at home or by selling labour. Poverty exists when income derived from either by selling goods or labour, or both, is insufficient to meet the basic needs of the population. Selling goods may be insufficient because the products are not competitive; the causes of inadequate income are then directly related to low labour productivity. But the level of sales may also be insufficient due to the lack of national solvent demand, which is directly related to low income. The lack of solvent demand explains in turn the lack of economic growth and of job opportunities. Solvent demand growth is a key variable often neglected in food security analysis, partly because boosting national demand is no longer in the scope of public intervention in post-Keynesian economies. We have nonetheless provided some analysis of the relevance of too low solvent demand in explaining food insecurity, and its applicability to designing feasible public interventions for food insecure African countries today.

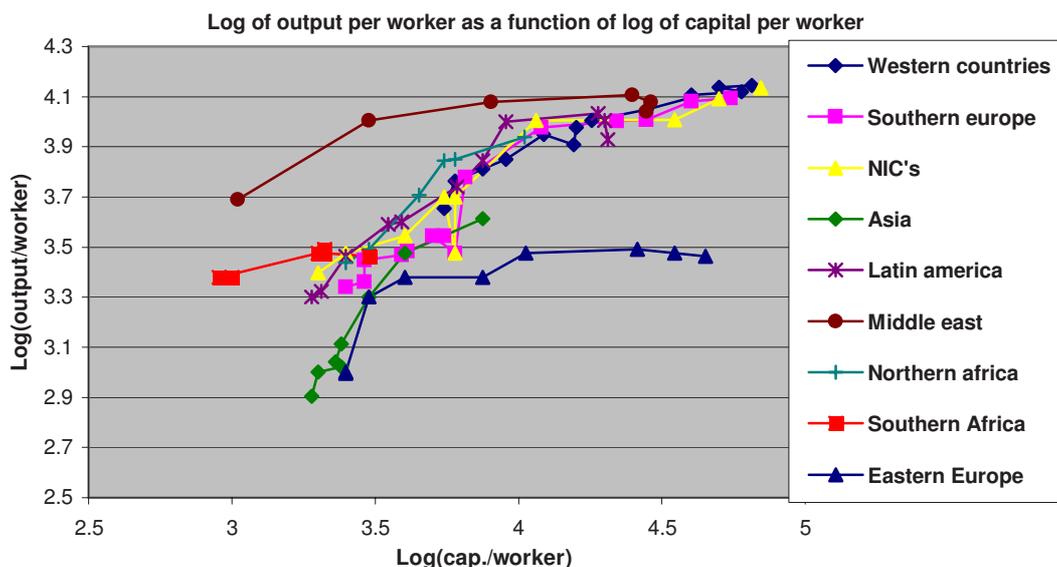
6.1 The central role of capital per worker

6.1.1 Capital per worker in economic growth

It has been shown above that if, in order to obtain a reasonable level of food security, any permanent recourse to international charity is ruled out, then the only option is to make the agricultural sector competitive. But how does one make the agricultural sector competitive? Although it is not specific to agriculture, the first and essential point in this respect is the role of capital per worker, as shown in figure 6.1.

Figure 6.1 has been drawn using records of total (agricultural and non-agricultural) output per worker (in constant U.S. dollars) during various decennia between 1870 and 2000 (some series begin only in 1920 or in 1950, so that the number of points per series is not always the same). A clear tendency is perceptible, with an almost linear relation between the quantity of capital and the output per worker in logarithmic scale. There are a few exceptions: "Eastern Europe", with a far below-average performance, (which, to some extent, may be ascribed to the strange definition of capital in the national accounts of the USSR and some other countries); the "Near East", probably as a consequence of the petrol subsidy that makes the case not very significant; and "Asia", which started in a very bad situation, but recovered rapidly, through the famous "miracle".

For other country aggregates, there is no miracle: the relation between capital and growth is uniform, and valid for Southern Africa as well as for Western Europe. Southern Africa is notable in that it stands at the bottom, with the smallest capital quantity per worker and the smallest output. Only Asia was in a significantly worse situation at the beginning of the twentieth century, and (against all odds) recovered quickly, while Africa is still in the "normal" but lower part of the distribution.

Figure 6.1: Historical relation between output per worker and capital per worker⁴⁹

Source: based on Baier, Dwyer and Tamura (2004)

Caution must be exercised regarding this notion of capital per worker, in order not to misinterpret the above statements. Capital is not a homogenous commodity, the quantity of which can be compared between Europe and SSA in a straightforward manner. It is a collection of various pieces of material that are useful (and deserve the name of capital) only insofar they are adapted to a given situation, time and location. A computer given to a Stone Age hunter would not really increase his capital stock. For that reason, the authors of the study referenced above (Baier *et al.* 2002) rightly point out that the examination of the capital stock per worker is not sufficient to explain the observed wealth increase in developed countries over the last two centuries. What they call "human capital" and technical progress are just as important.

"Human capital" includes the ability to choose which proper specific capital item to build (or acquire) in a given situation and location. For instance, one can avoid using a tractor when a pair of oxen is more appropriate to the situation; conversely, replacing the pair of oxen with a tractor may be more appropriate in a different setting. Development is not simply a matter of gathering large quantities of capital and applying them indifferently. On the contrary, the major difficulty lies in fine-tuning ways to make the best possible use of a scarce and protean resource. In the past, many African "projects" (especially agricultural projects) have neglected this important aspect of capital management, by using capital-intensive techniques that were fully justified in wealthy countries facing land scarcity, but were perfectly nonsensical in a poor and relatively land-abundant countries such as those in Africa. The consequences of this observation will now be examined in the context of agriculture.

⁴⁹ Here, "Western countries" include the United States, Canada, and northern Europe (United Kingdom, Sweden, France, etc.); "Southern Europe" is Cyprus, Greece, Italy, Spain, etc.; "Eastern Europe" corresponds to former socialist countries (Russia, Yugoslavia, etc.); "NIC's" are Japan, Korea, Singapore, etc.; "Asia" is India, Pakistan, Sri Lanka, Indonesia, etc.; "Near East" is Iran, Iraq, Saudi Arabia, etc.; "Southern Africa" is quite similar to SSA; "Latin America" includes Argentina, Brazil, Honduras, Nicaragua, etc.; "Northern Africa" goes from Egypt to Morocco. See Baier *et al.* (2002) for details.

6.1.2 The case for agriculture: what is agricultural capital?

The quantities (be it output per worker, or capital per worker) shown in figure 6.1 are computed from a mix of agriculture and other sectors. The only specificity of agriculture here is that, whereas industrial sectors generally are not technically flexible (producing a computer requires about the same mix of capital and manpower, whatever the production location and circumstances), agriculture is by contrast extraordinarily malleable. One can produce rice with almost no capital (sowing rainfed rice and letting it grow requires only a small quantity of seeds, albeit with very poor labour productivity - less than 0.2 ton/worker/year), or with almost no labour (the Texan rice grower can produce 500 tonnes per worker/year, using enormous combine harvesters, large quantities of fertilizer and pesticides etc.).

This is one of the reasons why poor countries are agriculturally oriented: agriculture is the only activity compatible with a very low quantity of capital per worker. The other reason is to be found on the demand side: agriculture produces food, and food is the only significant consumption of the poor. At the same time, it is not possible to continue operating such capital extensive techniques in agriculture if one wants to escape low labour productivity and poverty. As shown above, development requires an increase of capital use both in agriculture and in other sectors. But it is not just any capital that is needed at any stage of agricultural (or economic) development.

The capital can be privately or publicly owned, depending on circumstances

First, it must be stressed that the capital in question here is not only the private farm-level capital, but also public and private capital that determines the environment within which farms operate.

Because agricultural activities need land, producers are distributed throughout the countryside. For example, for agricultural producers to be able to supply food and other commodities to urban dwellers and buy inputs and equipment required for production as well as the goods they consume, markets, roads and other facilities are needed, and these require capital. A great part of this off-farm capital is of a public nature. They also need knowledge and a variety of services to be able to capture fully the potential of growth offered by agriculture.

Similarly, the lack of fertilizer is often held responsible for the low productivity of African farmers. Indeed, subsidizing fertilizers has often been a policy recommendation, despite the drawback of input subsidies, as noted above. But another way of obtaining the same effect as a fertilizer subsidy is to provide a set of public facilities to the fertilizer commodity chain. Indeed, Jayne *et al.* (2003) show that typically, 50 percent of the farm-gate fertilizer cost in countries like Kenya, Ethiopia and Zambia is ascribable to domestic marketing costs, while only 10 percent accrues to retailers, importers and others. This means that the same effect as a fertilizer subsidy could be obtained by reducing domestic marketing costs through reducing port fees; coordinating the timing of fertilizer clearance from the port with up-country transport; reducing transport costs through port, rail and road improvements; reducing high fuel taxes; and reducing the uncertainty associated with government input-distribution programmes that impose additional marketing costs on traders. According to Jaynes *et al.*, estimated reductions in the farm-gate price of fertilizer from implementing the full range of options identified in each country range from 11 to 18 percent. Price reductions of this magnitude, if passed along to farmers, would increase farmers' effective demand for fertilizer. Investments in selected publicly provided goods, often considered outside the scope of fertilizer marketing policy *per se*, strongly affect the costs of fertilizer and farmers' willingness to pay for it, and hence the performance of markets.

Capital must be released in small quantities in accordance with absorption capacities

The quantity of capital at the disposal of agriculture must be released prudently. Among the many management defects pointed out by analysts regarding agriculture in sub-Saharan Africa, inefficient, low-profitability projects are prominent. It is true that many agricultural development projects have been poorly managed, resulting in bad performance and, sometimes, sheer disaster. The main conclusion generally derived from these experiences is that Africans are not capable of managing a complex economy. But as Jeffrey Sachs⁵⁰ remarked, "the idea that African failure is due to poor governance is one of the great myths of our time. They can't get out of the hole on their own", meaning that not only management recipes, but also real investments are inescapable.

It must be stressed that the probability of failure for any investment is much larger for an isolated big project than for a cluster of small ones. As noted above, in the presence of an abundant labour force and scarce capital, the marginal productivity of investment is very large: rates of return of 100 percent or more are not uncommon for such small pieces of investment as ox carts or improved seeds. At the same time, as capital per capita increases, this marginal productivity decreases rapidly. When the levels of per capita capital stock reach levels of the same order of magnitude that they are in developed countries, there are no reasons for the rate of return to be larger than in a developed-country context. Actually, there are reasons for it to go lower, in the absence of infrastructure, market organizations and other facilities.

Given this dynamic, one can understand why scarce capital is better employed in many small projects designed to help poor, capital-deprived peasants than in a few large, highly capital-intensive projects. If African leaders (and their expatriate advisors) can be reproached, it is for channelling scarce foreign aid into gigantic projects. Who can resist the wide smile of a president coming to inaugurate a new dam, surrounded by press photographers? Yet a dam doubling yields over 10 000 hectares can be much less efficient than a credit project increasing yields by only 15 percent over 100 000 hectares.

The only exception would be economies of scale in large projects – but in fact, there are practically no economies of scale in agriculture. Visibly, if a technique is profitable over one hectare, it can be reproduced without change over millions of hectares; thus, agriculture is a "constant return to scale" activity, which can be undertaken indifferently in large or small farms without a significant change in productivity. Actually, there are reasons that small family farms are a little more productive, because in such a setting, the actors monitor themselves, choose the most efficient solutions and constantly improve their methods. By contrast, large projects usually are very beneficial to a few, and not necessarily competent⁵¹, managers, leaving grassroots actors with no incentive to work (for which they are labelled "lazy").

On the contrary, as soon as the provision of credit, transportation, output collecting or input delivering activities are involved, the existence of economies of scale is much more likely⁵². This is a source of market failures, and a justification for state intervention. Indeed, state intervention here is required to provide a stable and friendly environment to farmers, allowing

⁵⁰ See Eviatar, 2004.

⁵¹ For instance, René Dumont (*L'Afrique noire est mal partie*, le Seuil, Paris 1962), a famous agronomist, tells the story of a project supposed to develop groundnut production in Casamance (southern Senegal), the leader of which was a former French marine officer. He was perfectly ignorant of the elementary bases of agronomy, but sure of the necessity of big tractors, and very proud of using the recovered anchor chain of a famous liner to slash the trees of the tropical forest. By doing so, he destroyed the soil he was supposed to improve.

⁵² Even for these activities, however, one must be prudent in concluding economies of scale do exist: see Fafchamps, Gabre-Madhin and Minten, 2003.

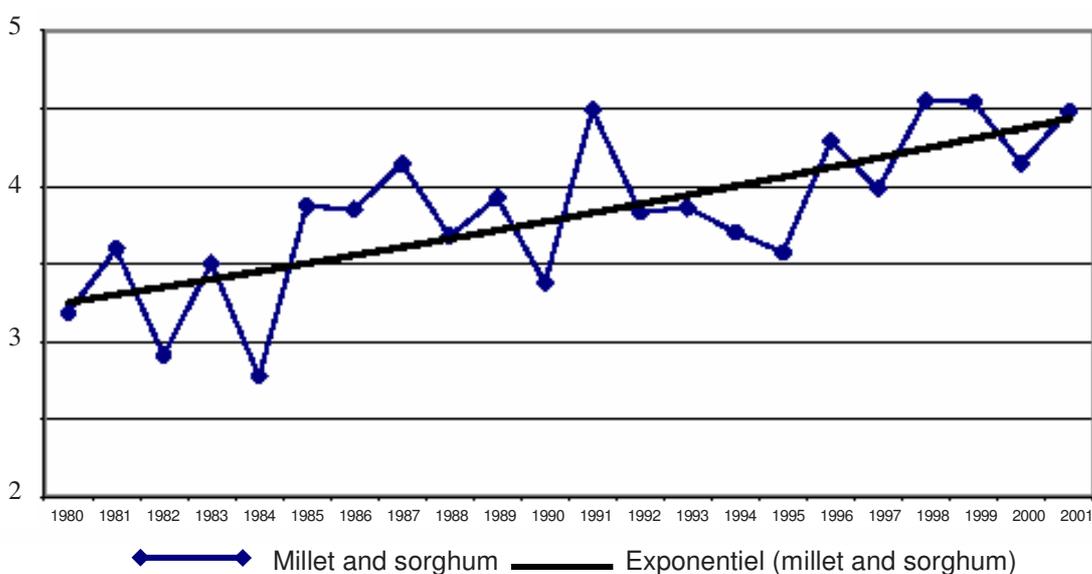
them the freedom to organize themselves in a way that best suits them, and making their own profitability computation in a familiar context. Even so, state intervention must not replace traditional moneylenders and bush traders. On the contrary, for most of their activities, again, they are their own best monitoring officers. But they must be placed in the position of benefiting from the economies of scale brought about by collective action. Thus, they must discuss with authorities to determine the best public investments, such as roads or market structures. At the same time, they must be prevented from benefiting from unjustified subsidies in such a way as to be rewarded only in proportion to their contribution to the collective effort.

6.2 Labour productivity growth is not enough: the case for increasing the extent of the market

Root causes of insufficient solvent demand differ according to location. When considering local household demand, the lack of income among a large share of the population is responsible for the lack of solvent demand. As explained above, it is directly related to low labour productivity and to the lack of job opportunities. For the richest consumers, imported goods are often preferred for consumption. Moreover, exports subsidies, as well as food aid, have a negative impact on agricultural output prices and divert part of the local demand to foreign supply. Negative financial transfers due to the burden of the debt repayment also affect the national income and thus solvent demand. As has already been underlined, the drastic cut in public expenditures since the mid-1980s has led to a sharp drop in public demand. The lack of foreign demand is explained by high transaction costs that isolating local markets from the rest of the world, low competitiveness of local goods due to low productivity and foreign market protection through tariffs and non-tariffs barriers.

Mali is a striking illustration of the necessity for boosting agricultural labour productivity (without being restricted solely to this area). In Mali, about 76 percent of the population is rural and poverty is more prevalent in rural areas; 81 percent of the poor and 98 percent of the poorest live in rural areas. Keeping this in mind, pro-poor growth seems necessarily to mean labour-intensive growth in the agricultural sector (Marouani and Raffinot, 2001). Mali experienced growth during 1994-2000, with a rather modest poverty reduction. GDP increased by 33.3 percent between 1994 and 1999 (about 5.5 percent per year). During the same period, the productivity of labour for food crops improved steadily (Figure 6.2) while the incidence of poverty fell by 4.6 points, or only 6.7 percent. Why then did not farmers' income follow the movement of labour productivity?

The first hypothesis made by researchers Marouani and Raffinot is that the increase in productivity has been followed by a fall in agricultural prices. Indeed, it is well known that good harvests in the Sahel region cause a dramatic fall in prices (and poor harvests increase prices). Thus, increases in productivity could be offset by the reduction of food prices. It is difficult to assess the net effect on the income of the poor because it depends on whether they are net sellers or buyers of food. For net sellers, a good harvest may result in decreasing monetary income. Using rice equivalent to compute the poverty line, Marouani and Raffinot find in this case an increase of the poverty head count.

Figure 6.2: Productivity of cereals in Mali (1980-2001)

Source: Marouani and Raffinot, 2001 (based on FAOSTAT)

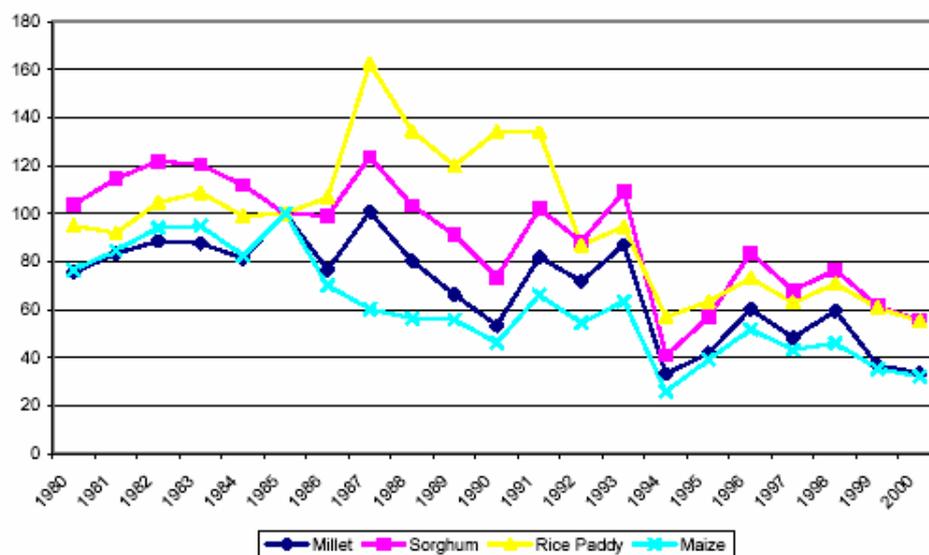
In a more theoretical study, De Janvry and Sadoulet (2002) attempt to tackle this problem within the framework of a general equilibrium model. They use an “African archetype” to compute the impact of an increase of agricultural productivity. In their model, a 10 percent increase in total factor productivity (such as improved seeds in all crops) results in an increase of 7.6 percent in the income of rural poor households (with a large positive growth in non-agricultural employment, which in turn causes an increase in the demand for food). In the model, poor rural households are supposed to produce all the food they consume, so they do not benefit from the decrease in food prices. The impact of a 10 percent increase of productivity in food crops is less important, resulting in an increase of 3.9 percent in the real income of small- and medium-scale farmers. This is because they do not benefit from the decrease in food prices (-12 percent) and because in the model, the cereal sector represents only 13 percent of the GDP (twice more in Mali). Eswaran and Kotwal (1992) presented a theoretical model in which increases in agricultural productivity and reduction in food prices allow people to buy other products, leading to the emergence of an internal market for manufactured goods.

A second hypothesis focuses on the deterioration of the terms of trade between agriculture and industry. Such deterioration could partially explain why the improvement of the productivity of food crops did not result in a sharp reduction of rural poverty. Figure 6.3 suggests that there has been an important decrease in food crops’ terms of trade in the recent years (since the 1994 devaluation). Productivity and income may indeed follow different paths. Both the de Janvry and Sadoulet theoretical model and actual real-price data convey the idea that agricultural prices are either blurred by self-consumption patterns or too low to generate sufficient income. Having the gross income equal to the output sold, times the selling price, we conclude that the volume of output sold is not sufficient to compensate for declining real prices reflecting productivity gains. Hence the poor stay poor as long as a growing volume of demand for their agricultural output is matched.

Low productivity and low demand are linked through a circular relationship. Early development theorists already wondered why income growth in economically backward areas was trapped. Starting with the demand size of the problem, the most documented determinants are transport facilities, which Adam Smith singled out for special emphasis. Reductions in transport costs do enlarge the market in the economic as well as the

geographical sense. But reductions in any cost of production tend to have that effect as well. So the size of the market is determined by the general level of productivity and the level of domestic factors use. Capacity to buy means capacity to produce. In turn, the level of productivity depends largely on the use of capital in production. But the use of capital is inhibited, to start with, by the small size of the market. What is the way out this circle?

Figure 6.3: Price of cereals deflated by the import price index (1985=100)



6.3 The policy way out of the circle linking low productivity and the small size of the market

The root causes of chronic food insecurity can be turned into priority objectives. Priority objectives for policy-makers whose countries have been facing chronic food insecurity should be, first, to improve productivity, and second, to boost demand for products and labour from food-insecure households. The first objective is widely accepted among policy advisers and academics, with the exception of the external (foreign) demand for labour. The second goal is far more neglected, if not ignored. When applied to the rural sector, it goes beyond agricultural policy *per se* and involves clearcut choices in terms of growth and development policies. **Refocusing on demand growth, both local and external, is a top priority development policy that enhances food security.**

The review of policy measures actually implemented in African countries highlights the vanishing of agricultural policies in their Organization for Economic Cooperation and Development (OECD) or post independence acceptance. With the exception of some subsidies on inputs (a few Southern African countries, cotton in some West African countries), remaining minimum price guarantee schemes (maize in some African countries), VAT exemptions, limited import tariffs (although far below the banded rate) and scattered public investment in rural areas, the scope of public intervention is narrow. This narrowness, when confronted with the breadth and depth of the causes of chronic food insecurity in Africa, points to the scandalously limited policy response brought today by African countries to African populations. **A start in budget reallocation toward rural populations is urgent to overcome the unaddressed causes of food insecurity.**

It is worth recalling first that available policy measures are much more numerous than the ones still in use in Africa. Policy measures restricted to the rural sector include: border measures (fixed tariffs, variable tariffs, quotas, both on imports and exports); domestic support (minimum price, output subsidies, input subsidies, consumption subsidies, direct

transfers, stabilisation); indirect taxes (VAT exemptions); investment funding and incentives (subsidies); interest rate subsidies; provision of agricultural services in remote areas (credit, irrigation, storage facilities). Successful food security strategies in places such as Indonesia, Europe or Central America in previous decades demonstrate that there is no orthodox, one-size-fits-all policy package. The larger the choice of measures available, the higher the probability to apply Tinbergen's efficiency rule, according to which one policy measure must be targeted at only one objective – following the popular idea that “you cannot hit two birds with one stone”. We have seen that root causes of food insecurity provide a large scope of policy objectives. **Significant widening and flexibility in the choice of available policy measures is urgent to overcome the unaddressed causes of food insecurity.**

International or regional commitments of African countries do not bring convincing explanation of the narrowness of public intervention targeted at food insecurity in Africa today. The room for ambitious agricultural policies at WTO is wide, with total exemption of tariff and support reduction being granted to least developed countries (most of them are to be found in SSA) while developing countries enjoy a special and differential treatment rehabilitating some of the pre PAS instruments (like input subsidies as long as they are targeted at the poorest). Examination of bilateral agreements (like EPA following Cotonou Partnership Agreements between EU and ACP countries) and regional agreements (such as UEMOA), reveals no significant constraints on any kind of domestic support, since the primary constraint relates to external tariffs. The most stringent constraints seem to stem from the conditions imposed by donors and international financial institutions (IMF, WB) and other aid agencies adopting the same agenda. **Upgrading in a coherent framework the set of rights and obligations of the governments of food-insecure countries towards the international community – and specifically toward the Bretton Woods institutions and other aid agencies - is urgent to overcome the unaddressed causes of food insecurity.**

Economists dealing with political economy have tried to show the losses and more generally, the dysfunctions and failures associated with the use of some specific policy instruments. Regarding African countries, two major inputs in the political economy analysis of agricultural policy must be considered:

- A first “bunch” of researches has been focused on agricultural policy instrument giving access to a limited amount of specific free or subsidized goods or services (inputs, credit, extension...) or limited access to a particular market (a foreign market, for example). This limitation in quantity gives rise to subsidies and people will compete to get these subsidies and devote resources to such competition. Depending on the allocation method used, the kind of resource provided will differ. When allocation of trade licenses is decided by government officials, different kind of expenses will be realized to influence the decision: trip to the capital, office rent in the same capital, lobbyist services and of course directly money, i.e. bribe. Therefore, waste of resources is a primary problem. Increasing inequality can be a second one. Corruption the last one.
- The second “bunch” of political economic analyses aims at explaining the apparent preference of African government for input or credit subsidies and projects instead of higher price for agricultural commodities. According to such analyses the role of pressure groups actuation can be important but the search of power by the state elite is the main issue. The first objective of governments is to secure political control over their rural population. By using project instead of higher prices, government can exercise discretionary power, they can choose regions, groups or even individual to be the beneficiary, they can also choose in staffing the project. By choosing some specific groups they get their support and weaken any opposition by dividing the rural world.

These two “bunches” have provided sound contributions for the writing of obituary notices of 60's and 70's agricultural policies. Yet, before leaving them out completely, one should be reminded that low farm gate prices were at the same time stable and predictable – eg stabilised. Ample evidence shows that agricultural supply responds to price stability just as much as to mean price level. As a consequence, providing stable prices to farmers is just as important for production as high prices. A trade-off was expected to occur between low and stable agricultural prices, allowing for productivity gains in agriculture through riskless investment in capital goods, along with productivity gains in labour intensive activities in all sectors thanks to moderate wages increases allowed for by moderate food prices. This subtle trade-off did work in some places like Europe or Indonesia. It completely collapsed in most of African countries because too narrow a place was given to market forces between farm gate and consumer plate.

The policies maintained during the 60's and 70's are rightly criticized, especially in view of their poor outcomes. Yet this does not mean they were without any merit or justification. One should consider the rationale behind them. Relatively low farm gate price while international prices are high means profits for marketing boards and similar agencies. Economists who developed the concept, intended such profits to be spent on increased investments and long-term development devices that the market usually fails to secure, and **which by necessity must be funded by the State**. One may question the choice to have them funded by poor farmers rather than by richer people. But the central question is **why were these profits not spent on development by the States** responsible for it?

A second part of explanation derives from the lessons learnt from economic literature. Although controversy continues, academics tend now to promote budget-funded, targeted policy instruments to consumer-funded, price instruments, the latter suffering from poor targeting and distortive (inefficiency) effects. On efficiency grounds, the “modern” food policy relies heavily - theoretically at least - on freeing market prices, which means close-to-zero tariffs, decoupled support (compensation and insurance transfers), along with investment policy in public goods provision such as research, infrastructure, education, health and the enforcement of the rule of law so as to make market institutions properly work and even “work for the poor”. **When no such a budget is made available, the case for agricultural policy vanishes.**

How best to use a agricultural budget in an accountable manner cannot be defined in terms of policy measures at this stage. This can only be dealt with on a country-by-country basis, with extensive participation of local stakeholders throughout the policy-making process. A framework for action has been set here, whereby a step-by-step definition of agricultural policies could make them both legitimate inside and outside the country, at all levels of negotiations, within and among ministries. The initial step is to identify the characteristics of food insecurity on a country-by-country basis, followed by the identification of its root causes. This in turn will provide economic grounds for policy action, as long as such causes relate either to market failures or government failures as described above. Checking for country commitment and possible perverse effects of such policy, because of subsidy-seeking or any counterproductive effect current knowledge helps prevent, leaves room for the final design of sound agricultural policies embedded in demand-led growth which secures food.

CONCLUSION

The food insecurity problem is especially acute in Africa. Although it can be temporarily alleviated by food aid, it can be solved only by development. Therefore, this document, using food insecurity as a starting point, stresses the importance of governance for development.

If it is true that food security, to some extent, can be maintained by food aid for a certain period, and if it is out of question not to have recourse to food aid in cases of emergency and when every other method fails, it is nonetheless also true that *food aid is not a sustainable solution for removing hunger and poverty* in the long run. On a long-term basis, in any country, food must be produced domestically, or imported commercially in exchange for competitive, domestically produced non-food goods. Because food shortages affect the poor first, whatever the choice between domestically produced or commercially imported food, the poor must be involved in production, whether it is the direct production of food, or the production of those commodities that are to be exported in exchange for food imports.

The main obstacle to such a solution (i.e. involving the poor in production) is the poor's lack of capital – not financial capital, but real capital goods, machines, infrastructure and so on. The second obstacle is the limited extent of the market. Because there is not enough capital in Africa, labour productivity is low, and this *low productivity of labour is the main reason for poverty and starvation*. Because available capital is not adapted, some factors are underutilized, incomes shrink and the extent of the market is too narrow.

There are no reasons for this situation to continue, given that international organizations are ready to help, and not only in cases of emergency food shortage. NEPAD, in particular, is an attempt to reproduce one of the most outstanding success of the twentieth century in terms of economic development, the Marshall Plan. Could the recipes of the Marshall Plan be applied to Africa, and does the Marshall Plan possess anything that could rightly be called a recipe? Could African agricultural successes be replicated and scaled up? What could be learnt from experience on other continents?

The answers to these questions could be summarized as follows:

- i) No development can occur spontaneously, solely through market forces. Any example of a successful development story demonstrates that the involvement of the state in the process is essential. In particular, when external aid is available, the government has to set up priorities for the sound management of investment goods purchased on foreign markets. This is the main lesson drawn from the history of the Marshall Plan, the success of which the NEPAD would like to reproduce.
- ii) To be successful, state interventions must be done in sympathy, not in opposition, to the market. The market is an essential device in day-to-day decisions, and short-term approaches. But *the market is myopic*. For the long run, collective management by state and public agencies is necessary to avoid false expectations and misunderstandings, as well as to fix standards, control quality and set future priorities. In addition, providing infrastructure, a reasonably stable economic environment, and budgetary calculations are obviously the responsibility of any government – be it at local or national level, although the national government must compensate for the weakness of local communities in rural zones.
- iii) Because the poor, as a rule, are rural dwellers, and are not capable of practicing activities other than agriculture, while land is in general abundant, *there is a comparative advantage in Africa to producing food domestically*, rather than (from scratch) developing

an industrial export capacity capable of paying for food imports. For that reason, investments designed to increase the quantity of real capital at the disposal of poor farmers make much sense. It must be clear that the real capital in question can be owned privately (such as draught animals, farm machines and so on) or collectively (such as roads, bridges etc.). At the same time, it must be stressed that such a development of farming and rural capital implies also the development of a domestic industry capable of absorbing the excess quantity of manpower that will be made available by the substitution of capital for labour in agriculture. Such an industry will find its market first domestically, from the increase of farm wealth and farm demand, and then internationally, from its capacity to export high-quality products, if correctly managed.

- iv) In developing agriculture, *particular attention has to be paid to price stability*. In agriculture, because demand is rigid, prices are unstable: a small change in the supplied quantity results in large differences in price. Now, such price movements create an extremely stubborn uncertainty, discouraging investment and preventing banks from providing loans to farmers. Such price regulation policies are difficult to establish; they require a delicate collaboration between private crop collectors and the public organizations in charge of enforcing regulations, and they might be in contradiction with the condition of the International Financial Institutions (IFI) and the rules of World Trade Organization (WTO). They also imply building costly infrastructure, such as stockpiling facilities. Yet, as has been shown above, they are by and large the most efficient means to develop the production of any agricultural commodity.
- v) *Massive urbanization is a major characteristic of the modern age*, implying the existence of intermediate industries between farm and consumers. This is not without consequences for food supply, food security and the feasibility of agricultural policies. Food industries are much less numerous than farmers, and can be used as efficient intermediate bodies between farmers and governments. The situation, in this respect, is even better if – as was the case in most European and North American countries – these industries, taking the form of cooperatives, also represent farmers. In any case, *intermediate bodies are necessary* to set up a sound economic policy, in a “committee planning” framework.
- vi) The previous five points are strong reasons for ministries of finance in sub-Saharan Africa to provide support to the agricultural and food sector. Yet it is clear that not just *any* intervention is required. On the contrary, interventions should be carefully targeted not only in order to avoid squandering money and other resources, but also to allow the private sector to assume as much responsibility as possible.
- vii) *Providing a safe environment* and stable prices to agriculture and food-processing industries is essential. It seems that the easiest way to achieve this goal is by fixing minimum prices at a reasonable level, and guaranteeing that government will purchase any quantity supplied at this price. Another possibility is to buy or sell import or export licenses when necessary. Stockpiling facilities must be contemplated, on condition that they are privately operated (following the golden rule that “the state must never touch commodities”), even if prices are more or less administered. In any case, it implies that the domestic price of staple food must be different from the world price, although the difference must be small enough not to make smuggling too attractive. But failures in many African staple-food stabilization schemes demonstrate that with a weak or budding state, price policies are doomed to fail. In such a case, an alternative should be provided by new arrangements and partnerships with the stakeholders involved, among which the state should play a crucial role by ensuring that the concerns of the poorest stakeholders are taken into account, that bargaining power is equally shared between committed parties and that the arrangement enforced.

- viii) *Credit is the normal vehicle of privately operated capital accumulation.* But credit in Africa is hampered by uncertainty regarding the future, and by the lack of collateral. Any measure taken to secure decision-makers and bankers – including the state's guaranteeing of certain operations, but also rendering assistance to rural and savings banks – is likely to have a very large beneficial effect, without costing the government too much. Land rights clarification, requiring the creation of smoothly operating cadastre agencies and of improving civil court organizations, are also among the public goods likely to trigger agricultural development. In addition, property rights can be used as a basis for taxation, as a counterpart to the security provided by the state.
- ix) In low population-density regions, *roads and communication networks*, as well as harbours and other similar facilities, are absolutely necessary so that markets can play their roles. This implies that the state must consider the feasibility of heavy investments in such areas, which, by nature, are public goods not amenable to private operation (even if day-to-day maintenance is leased to private companies against reasonable rates levied on users).
- x) Other infrastructure of benefit to agriculture and food industries includes *irrigation schemes, agricultural extension, education and research*. Since managing such institutions is a matter of administrative skill, and such institutions must be dealt with under specific conditions, it is difficult to state anything general in this respect, except to say these institutions are the responsibility of the state and a major determinant of competitiveness. They are also necessary to make the transfer from farming to other activities, which should accompany development possible for the population.
- xi) Such a programme is costly. As was the case with the Marshall Plan in Europe, at least a part of it will be possible to fund from the central initiative, which in the African context means from NEPAD or other aid programmes. But not all the necessary expenses can be funded that way. Thus, *a fiscal policy must accompany the development efforts*. How to implement such a taxation scheme is beyond the scope of this document. But it must be stressed that the capability of the state to levy taxes is one of the components of its legitimacy. In addition, taxes levied on the rich for the benefit of all are a key tool in fighting against poverty.

This document departs from the mainstream literature in the emphasis put on the role of the state, which has been somewhat forgotten since the inception of structural adjustment. This is not to say that structural adjustment was an error, but that it might have been more efficient if it had been more careful in considering the due role of the state in development. The consequences of state involvement, of course, are deep. First of all, it implies a departure from pure liberalism, which has been just as excessive in its claims for the market economy as Marxism was in its negation of any value for markets. In any case, the points above provide some strong arguments in favour of state intervention, and in particular, state intervention in the agricultural and food sector.

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Appendix

The policy instruments of agricultural development support

If it is admitted that the key solution for fighting food insecurity is development, and that, in Africa, development cannot ignore the agricultural sector; and if it is also admitted that there exist specificities of the agricultural sector justifying specific policies, the question arises of the instruments available for this purpose.

Beyond the commitments made by African countries and some of their key partners to increase financial support to agriculture and rural development, there is a need for effective policies to be formulated and implemented. Whereas increased budgetary support would be necessary in most cases, it is not the only option available to promoting agriculture and, in any case, it would not be effective without complementary policy measures.

Therefore, it seems useful at this stage to recall briefly what policy instruments are available for agricultural development. We shall also describe their rationale, requirements, efficiency in addressing the risk and market failure issues mentioned above, their possible distributional effects (especially among the poorest) and last, their cost.

The choice of possible modes of intervention is broad. The policy options are constrained by a number of factors including: i) limited public resources; ii) the dilemma of fostering remunerative prices for producers and prices that a large number of poor households can afford to pay; and iii) constraints on foreign exchange availability, which can lead to overemphasis on the production of export crops.

The following rough classification will be used in presenting the main instruments of agricultural policies:

- 1) border measures
- 2) taxes and subsidies
- 3) price stabilization and guarantees
- 4) public goods (rules, regulations, infrastructure and services)
- 5) reform of the institutional framework

Border measures

Exchange-rate policies

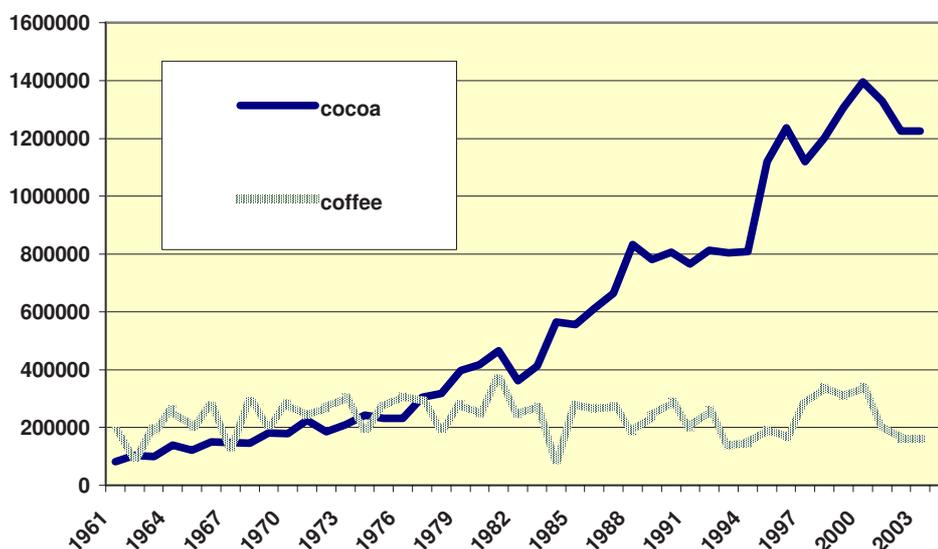
A classic measure to modify the farmers' (and all other producers') production environment is to modify the exchange rate. Devaluation has been extensively used to improve competitiveness because it reduces the cost of locally produced goods as expressed in foreign currency. But this is not always true. For instance, if the domestic commodity in question needs inputs from abroad – say, fertilizer – then the cost of production of the commodity will increase, as the cost in local currency of fertilizer will rise with devaluation. The higher the share of imported goods in the cost of production, the less the devaluation will help increase competitiveness. Devaluation, therefore, encourages exports and discourages imports, and provides generalized incremental protection to all domestic exporters and import competitors. Since devaluation pushes up the domestic price of exportable and importable commodities, it tends to have an inflationary impact. The fear that devaluation will feed the inflationary process often deters monetary authorities from devaluing in the face of creeping domestic inflation, notwithstanding the potential positive effect of devaluation on the balance of trade (FAO, 2000).

Import and export tariffs

The basic philosophy of import and export tariffs and quotas is exactly the same as for the manipulation of the exchange rate, except that, instead of modifying all foreign prices at the same time, a tariff can be used to protect particular domestic sectors from international competition by artificially increasing the domestic price of the imported commodity. In addition, whereas changing the exchange rate can be done only on rare occasions, changing tariffs rates and computation rules is relatively easy (although WTO regulations have restricted considerably the possibility for member governments to use this instrument, while quotas have been banned). Tariffs have also constituted historically one of the main sources of revenue for the state.

Historical evolution in Côte d'Ivoire since independence

Coffee and cocoa production in Cote d'Ivoire



a) Permanent tariffs in a static framework

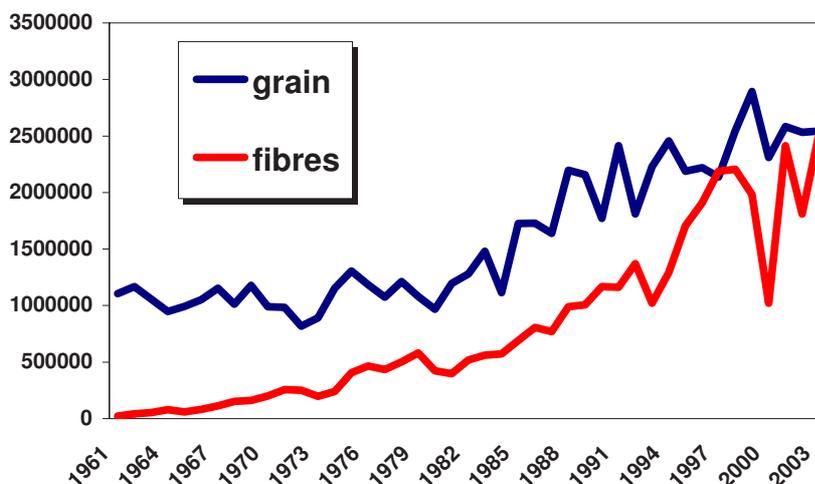
In static terms, domestic prices set above world prices through import tariffs will benefit net producers, while domestic prices below world prices (because of export limitation) will benefit net consumers. This is why protection of agricultural commodities is often thought to favour rural households and hurt urban ones. The net aggregate effect on consumers and producers is generally considered negative: consumer losses are estimated to be greater than producer gains.

Yet, if one takes a dynamic point of view, the judgement on protectionism might be revised. Indeed, protectionism could turn out to be positive in the long run if designed to reduce market fluctuations and price uncertainty, and hence foster investment and productivity gains⁵³. Variable tariffs were designed to that end.

⁵³ In particular, see Boussard, Gérard, Piketty, Christensen and Voituriez (2004). Based on the results of a general equilibrium model, this paper, like many others, develops the idea that, at a global level and under perfect market conditions, removing all obstacles to trade would generate significant benefits by fully exploiting comparative advantages. However, this model, unlike others, can also be run under the assumption of "imperfect markets". In this case, the situation with liberalization is much worse than the situation without. The authors claim that, unfortunately, reality is much closer to the worse situation, with liberalization and imperfect markets.

Historical development in Mali, 1961-2003

Grain and fibre production in Mali



b) Variable tariffs in a dynamic setting

Variable tariffs consist essentially in maintaining domestic prices at an (almost) constant level by levying a tax defined as the difference between the world and domestic price. Thus, importers have to sell at the domestic price, whatever their costs. Of course, such an arrangement can be compatible with average import prices that are close to world market average prices. In this case, assuming average international prices moving slowly, distortion effects on domestic markets are reduced to a minimum. Price-band policies in Central America and Asia (especially in Indonesia) were implemented in that spirit. This instrument, however, is not compatible with WTO regulations.

The situation for export products is similar to that of imported goods. Exports (particularly traditional tropical exports, such as cocoa and coffee) have often been taxed in the past to collect revenue for the state, but this is usually at the expense of net producers (farmers).

c) Import or export quota

Quotas are limits imposed by governments on the physical quantity of either imports or exports. Like tariffs, import quotas tend to raise the domestic price of the commodity and to increase the income of domestic producers who compete with imports, at the expense of consumers. The main contrast with tariffs is in the distribution of the revenue deriving from the difference in the selling price of the imported commodity; whereas in the case of tariffs this revenue is collected by the government, in the case of quotas it may go in part (or totally) to license holders, who are allowed to buy imported goods and resell them at a higher price in the home market. The gains thus made are known as **quota subsidies** and may to some extent be collected by government if the licenses are sold or auctioned. WTO regulations imply a ban on quotas, which should be replaced by an equivalent tariff.

Impact of the CFA franc devaluation in Western and Central Africa

The CFA franc is the currency of most former French colonies in SSA. It is exchanged at a fixed rate to the euro. The main advantage of this link between an African and a European currency was its effectiveness in guaranteeing price stability. The drawback was the fact that increasing competitiveness through devaluation is not possible. Since the CFA-zone countries export performances were deteriorating, in 1993 the World Bank and the IMF recommended a devaluation (change of parity between the CFA franc and the French franc, to which it was then pegged). This devaluation occurred early in 1994. The devaluation was enormous: the rate of exchange was doubled.

A few months after this historic devaluation, most officials and international bank executives were rejoicing, claiming the operation had been a success and predicting a boom of exports. But after ten years, it must be acknowledged that nothing really significant occurred. One can see that the impact of devaluation on the production of export commodities is not significant after 1994: no serious statistical test will detect a break in the series around 1994 (probably there is only a slight increase in volatility in 1993-1995).

There are many explanations for this. In particular, in the absence of capital and of infrastructure, most producers were not in a position to seize this opportunity to profit by increasing production. Worse, deprived of imports (which of course had doubled in price), they were obliged to reduce production that required imported inputs. Moll and Heering (1998) convincingly show this effect with regard to meat production in west Central Africa. Meat imports from the European Community were considerably reduced, but were not replaced by domestic production. More generally, it turns out that through inflation and price changes, firms and households try to establish again the situation they enjoyed before the monetary adjustment. If they succeed, they progressively adjust the prices of fixed factors, and come back to the *status quo ante* (except that the cost of the fight has to be born by somebody, and usually the weakest). Hence the CFA franc devaluation, far from being the promised outstanding success, was simply one small failure after many others.

Taxes and subsidies

Input subsidies

Many countries subsidize agricultural inputs – that is, each time an input is sold to a farmer, a certain share of the cost is born by the government and directly paid to the seller. Thus the farmer is provided the commodity at a price below its cost.

The rationale underlying input subsidies is usually to encourage farmers to make use of improved and more productive technologies – the cost and cash requirements of which is assumed to be a disincentive. Since farmers are often poor, have limited productivity, lack cash, are risk averse (and therefore averse to innovation) and poorly informed on the technology available, it is thought that a financial incentive on inputs (including equipment) can help to convince them to use the improved technology by lowering the risk involved.

Another reason for subsidizing inputs has been that if it leads to increased use of inputs, it will also contribute to greater production. This result will help reduce the amount of resources used for imports and, eventually, for purchasing food in order to distribute it to food-deficit households. Overall, the replacement of imports and food distribution expenditures by spending on input subsidies is expected to result in savings⁵⁴.

⁵⁴ In more technical economic terms, because the agricultural production function is homogenous and of degree one, the output price alone cannot change the input composition of the output. Only changing the price of inputs can create incentives to change input requirements. Now, if markets are not perfect, it might be in the common interest to choose a particular technique (for instance, a capital-intensive technique) while the present price of labour would preclude it to be made use of spontaneously. In this case, by correcting the input price, the government corrects a market failure.

However, the cost of input subsidies is not always easy to determine. The “real cost” of input should account for the opportunity cost of the usage of the corresponding resource in excess of what it would be without the subsidy. For instance, in India, substantial subsidies are provided for the electricity used for pumping irrigation water. As a consequence, many farmers are obviously overusing irrigation water and wasting electricity. Also, in some places – but this is far from the case in most SSA countries – subsidies on fertilizer and pesticide have led to excessive use, resulting in pollution of groundwater. And when an input-subsidizing country has a porous border with a non-subsidizing country, there is a risk of subsidized inputs crossing the border and a proportion of subsidies benefiting farmers in the neighbouring country instead.

Input subsidies have also been criticized as being socially regressive and of benefit mainly to better-off farmers. Benefiting from the subsidy implies purchasing the input, and the benefit accrued is in proportion to the amount bought; therefore, the greater the quantity purchased, the greater the benefit. Larger and more advanced farmers (from the technological point of view) are more likely to benefit than traditional smallholders.

In addition, the use of input subsidies can create problems with trade partners, who may feel themselves to be the victims of unfair competition. WTO regulations call for a progressive reduction of input subsidies unless they are directed to resource-poor farmers in developing countries (Special and Differential Treatment).

Output subsidies

Farm output or, more frequently, agroprocessed products, can be subsidized as well. The subsidy is established as an equity device to allow wealthier taxpayers to help the poor have access to food. A variety of approaches have been adopted, including targeted subsidies on staple foods (at the processing stage or by creation of parastatals), food distribution (public canteens, school feeding) or food stamps.

These subsidies can also occur as a consequence of overly successful price support policies. Price support policies are in principle designed to increase local production to the level required to feed the country. However, it has often happened in the past that the support price is fixed at a level that generates a surplus. To absorb the surplus, sales are made at below market price to benefit of the poor. In some cases, subsidized exports are also resorted to in order to soak up the surplus (particularly when world prices fall).

WTO regulations warrant the progressive removal of export subsidies, on the grounds that they amount to selling below cost and contribute to lowering international prices, thus preventing the emergence of competitive productive activities. The exact price impact of export (and other) subsidies on world prices of agricultural commodities is a subject of controversy and a source of contradictory estimates.

Food subsidies have tended to be rather resistant to reform, because of the political dimension of the problem. Removal of subsidies on staple foods has in many places led to

riots, for example in Tunisia⁵⁵ and Zambia,⁵⁶ obliging governments to make U-turns in reform. However, because of financial constraints, the subsidies have tended to decline in most countries, although only progressively; in some cases, food aid has helped to fill the gap to some extent.

Investment and credit subsidies

Among inputs, credit has a particular importance, because it is the key method by which to increase the quantity of capital used in production and therefore in labour productivity, which, as noticed above, is crucial. At the same time, credit markets are generally not working very well in rural zones. Because of the small size of loans requested, administrative costs are very high. In addition, lending to a poor peasant rather than to a rich entrepreneur seems more risky⁵⁷.

In line with the foregoing reasoning, subsidizing credit would therefore be quite justified. The subsidy could be given either as a rebate on interest rates through some agricultural bank, as was done in France after World War II, or as a subsidy on the capital goods (tractors, oxen etc.) that the credit makes it possible to purchase.

Yet one may question the rationale for this kind of subsidy. The main obstacle for a poor farmer to borrowing is not in general the cost of the credit, because, as a rule, the expected profitability is far greater than the rate of interest. Indeed, the profitability of capital is as a rule enormous in such circumstances. The real obstacle is the risk associated with borrowing, which (together with the high cost of administration for small loans) explains the high rates of interest currently charged. One may wonder whether measures designed to lower the level of exposure of the poor to risk of any kind, including the risk of not selling output at the expected price, would not be more appropriate.

Direct subsidies and decoupling

Direct payment of an income supplement to producers is another approach to subsidizing agriculture. In this case, farmers remain exposed to unaltered market signals. To avoid change in producers' behaviour and so as not to affect the market, farmers are paid a lump sum independent from production. In that way, they enjoy a minimum income, and it is expected that they will respond efficiently to market signals. The advantage of this system is that benefits can be equitably distributed among target beneficiaries, or alternatively, targeted at the poorest recipients.

Direct payments to farmers can also be justified on the ground that farmers produce externalities, i.e. goods that, by their very nature, cannot be sold on a market, because it is not possible to restrict its usage to a specified client who could pay for it. Such externalities include environmental services, landscapes, cultural heritage and food security, as shown by ROA (2002).

⁵⁵ January 1984; see Louafi (2000).

⁵⁶ 1986, see Gutner (1999).

⁵⁷ This is not necessarily true: very (apparently) rich people can be crooks, while the poor often are anxious to reimburse their debts. A famous study of the Irish system of the "bank for the poor" during the 19th century shows that in that country, the risk was not so much the bankruptcy of the debtor as the dishonesty of the cashier, who, sometimes, disappeared with the cash.

Drawbacks include:

- A potentially high cost for the government, if payment is done across the board;
- the management of payments requires a good administrative service, because reliable information is needed as well as safeguards against corruption and embezzlement; and
- unfavourable equity considerations, insofar as the system will make farmers a separate category of citizen, with the right to be paid money from the government without making a compensatory contribution.

Even the most ardent proponents of decoupling admit that it should not be a permanent feature. In addition, it is mostly out of the reach of African governments due to cost. It must nevertheless be mentioned here for the sake of completeness, and because it is a hot issue in WTO discussions.

Direct payments have been put into the WTO “blue” or “green” boxes, depending on their exact nature and fully authorized as it is generally agreed that they do not strongly distort markets. However, it is clear that any payment will have some impact on the way producers behave, particularly with respect to risk-taking: lump sum payments can encourage farmers to engage in new and relatively risky ventures and increase their production capacity, thus generating additional production. In that sense, they are very far from being “decoupled”, and there is some sense in the claim by various African governments that, if one wants “free markets”, then direct payments should be removed, as are all other payments.

Taxes and tax exemptions

Taxes are a powerful instrument for generating government revenue but also for orienting the price system in a direction deemed desirable by policy-makers. Apart from import and export taxes, there are a number of other indirect taxes that can affect agriculture, such as specific commodity excise taxes (including excise that is often used to fund commodity-based organizations and the services they provide), taxes on inputs (fuel) and road taxes. Direct taxes (tax on individual income or on benefits made by companies) are also important.

Governments have extensively used tax exemptions to help certain sectors or subsectors develop by raising their profitability and attractiveness (a sector exempted from taxes sees its terms of trade with the rest of the economy improve). Although exemptions can be useful to help new industries establish themselves (as is the case with import tariffs on products produced by industries in their infancy), their persistence can create distortions and a feeling of lack of equity.

The most frequently advocated tax is the value-added tax (VAT). The main advantage is that the tax is paid on the difference between the value of output and the value of inputs. In that way, the number and variety of transaction steps within the commodity chain does not change the level of the tax, ultimately paid by the final consumer. Yet it is possible to adjust the rate of the tax for various reasons. For instance, on the grounds that food must be cheap for the consumer, a low level of taxation for food is possible, while luxury goods can be taxed at a maximum rate. However, it is difficult to put such a system into practice with illiterate farmers and in cases where economic transactions are informal.

The land tax is an important instrument for agricultural development for two reasons. First, it can be a strong inducement to more intensive agriculture, because farmers have to generate income in order to pay the tax. However, it requires a system of land registration (which has the other advantage of making land usable as collateral for credit). Taxes on land and capital

have a definite advantage over taxes on products because they can be made progressive (the tax is higher for the rich than for the poor).

Price stabilization and guarantees

It has been shown above that price uncertainty is a deterrent to investment. It is then quite natural to expect that some sort of price guarantee or stabilization procedure would help promote investment. But price uncertainty can be reduced in many ways, a topic discussed below.

Price guarantees

a) Principles and institutional setup

Guaranteed farm gate prices are very common in developed countries. Although modalities may vary, the essential approach is that governments (or government agencies) advertise that they will in all cases pay a minimum price for a certain commodity, whatever the quantity supplied. Probably the first historical example of such a policy is the U.S. Farm Act of 1935 (although similar rules were introduced in France some years before, for wine). After World War II, such price-guarantee schemes became commonplace.

Price guarantees may be granted under a variety of institutional settings. The simplest is probably when the government directly buys the commodity in question in public stores. However, this scheme is not the most convenient, because it implies that the government is playing the role of a trader and reselling the commodity to final users. This function is often delegated to auxiliary institutions, which may themselves cooperate with private traders. For instance, private firms may be in charge of operating trading and storage activities paying farmers the guaranteed price, and then be compensated for the losses they incur by a government agency.

Since consumer prices are linked to producer prices, the domestic price for the supported commodity at least equals the producer price (in practice it should be above that, in order to pay for transportation and processing costs). An automatic consequence is that border protection must be enacted in the event that the world price is temporarily or permanently below the guaranteed price. This explains the EC "variable duties". Similarly, export subsidies would be required should production exceed domestic demand, if stockpiling is ruled out. As long as the country is a net importer, the system is costless to the government; it even generates revenue paid by consumers. If the country has a surplus, it generates a cost to the government (that is, the taxpayer will have to pay).

b) Advantages and drawbacks

The main advantage of guaranteed prices is that farmers can use them in their calculations of projected income with less risk of error. (Although price-related uncertainty has been eliminated, risks related to disease, drought, flood etc. remain.) Bankers are also more certain that, if a borrower works properly, he or she will not be ruined by a sudden fall in prices. Since it is easier for a banker to check whether a farmer is competent than to predict prices for the next season, this allows for an efficient distribution of credit. As a consequence, as production and labour productivity in agriculture are highly dependent on capital endowment, eased access to credit should help to achieve a higher production. A large share of the increase in agricultural production in developed countries since World War II can be ascribed to such mechanisms. In many developing countries, local increases in some cash crops have also resulted from such pricing schemes⁵⁸.

⁵⁸ Boussard and Gérard, 1992

The most direct economic effect of price guarantees is, however, the possibility that, depending on the level of the guaranteed price, it may encourage excessive allocation of resources in a particular subsector, thus creating some economic inefficiency. The mode of operation of the guarantee system can also offer opportunities for subsidy-seeking and corruption. Another drawback is that the guaranteed fixed price implies a politically unacceptable consumer price and that funding of the operation of the system puts a heavy burden on the government budget. Last, if the guaranteed price is fixed too high, a production increase generates a surplus that leads to either stockpiling (with related costs) or (usually subsidised) exports. A way to address this problem has been to control supply at the same time as prices. This is the "quota" policy that has been adopted in many developed countries (EU for milk and sugar beets, Canada for milk and some grains etc.). The question of surpluses (and eventual quota policy) is, however, not likely to be relevant to most SSA countries in the near future.

Guaranteed prices are not compatible with WTO rules because they have to rely on variable levies, which are not allowed. Also, if the guaranteed price is higher than the world price, the difference will be considered as a measure of support, which if it is above the commitments of the country (including *de minimis*), could be challenged by trade partners.

Price management

A "soft" version of guaranteed prices is "price management". Here, farm gate prices are never given any fixed value. However, external trade is controlled – for instance, import and export licences are granted to businesses by the government. When the domestic price is deemed "too low", export licences are liberally granted so that excess supply is sold on international markets. When the domestic price is "high", import licences are granted to allow for the domestic market to be supplied through imports.

In this way, domestic prices remain flexible (and thus, to some extent, uncertain) but large deviations from the "normal" price are avoided. This is a way of providing security to farmers, while at the same time completely ignoring market signals. This policy carries basically the same risks as guaranteed prices, but yielded remarkable successes in countries such as Thailand during the 1960s and 1970s.

Public insurance schemes and stocks

Farming is a risky business and risk and uncertainty in agriculture are a constraint on production. They are also factors that lead to transitory food insecurity. The normal remedy to risk is insurance, but insurance does not suppress the social cost of risk. The payment of an insurance premium by one person contributes to the financing of the disaster met by another. For the individual who experiences the disaster, insurance has reduced the cost, but overall, the disaster has still to be paid for. In that sense, insurance can be considered in the same light as any other input.

Similarly, stocks are another way by which society handles risk. Storage is only a process by which a commodity produced now is made available later. Over a period of years, or within a country with diverse climatic conditions, stocks can be considered as an in-kind insurance contract.

Insurance and storage schemes have for long been a subject of discussion when considering food and agricultural policies, essentially because the special nature of risk in agriculture makes the proper functioning of most insurance contracts problematic (hence the limited private sector involvement in such activities and the tendency to have public schemes deal with agricultural insurance and food stocks).

Insurance is an application of the “law of large numbers.” If the number of insured persons is sufficiently large (for example, a few thousand in the case of car insurance), then each individually insured disaster (e.g. car accident) has a small cost compared to the total cost of all disasters, and the probability of one disaster for a particular insured person is completely independent of the probability for the disaster to occur for another insured person. The case is completely different when climatic or price risks are at stake. While climatic risks are generally fairly small in global terms, in a given region, all farmers will be affected at the same time, thus creating a risk that cannot be considered “small” by a regional company. Also, damage assessment is difficult and costly. As a consequence, private insurance of most agricultural climatic risks is not feasible. Of course, the same argument broadly holds for storage. Price insurance is even more problematic.

As for other cases of “market failure”, there is a need for the state to intervene to fill the gap with safety nets, storage systems, subsidized insurance schemes etc., which are compatible with WTO regulations (“green” box measures).

Public goods (rules, regulations, infrastructure and services)

Public goods are essential elements of the environment in which economic agents operate. Because of their characteristics of low **excludability**⁵⁹ and low **rivalry**⁶⁰, public goods suffer from market failure. Typical examples of public goods of relevance to agriculture are the law, the rules and regulations established by public agencies, and the services provided the police, the judiciary system, and agricultural inspection agencies. These are typically provided by the government and paid for out of taxation as they potentially benefit all members of the community and ‘free riding’ makes it difficult to charge users directly for these services. However, for many agricultural services the degree of excludability or rivalry is often determined by the precise nature of the service and the conditions under which it is delivered. Thus similar services, such as extension advice, may be delivered by the private sector in some situations but can only be provided efficiently by the public sector in others⁶¹.

The importance of public goods for agriculture has already been underlined. The absence of such facilities lead to situations such as:

- difficult access to markets because of lack of roads, lack of market information and absence of quality standards (or their poor enforcement);
- limited adoption of improved technologies for lack of effective technology production and outreach facilities (research and extension networks);
- low productivity of labour for lack of access to education and health services.

Another economic advantage of the provision of public goods in rural areas is that it will increase job opportunities, thereby contributing to income generation. In Africa, public resources allocated to the production of public goods for agriculture has seen its share in total government budget shrink. It is also lower than in other developing regions as shown in the report.

⁵⁹ Low excludability means that it may be difficult to exclude people from ‘free riding’ and enjoying the benefits of goods and services even if they have not paid towards their provision. Producers would find it difficult to recoup the full costs of their provision and, from an economic efficiency viewpoint, would thus tend to under-produce such goods.

⁶⁰ Low rivalry means that one person’s consumption of the commodity does not reduces its availability to others. As the cost to society of additional consumers enjoying the benefits of pure public goods is zero, economic efficiency requires their price to be set at zero. As a result it would not be profitable for the private sector to attempt to sell these goods.

⁶¹ This paragraph and its footnotes are extracted from: Smith 2001.

Public goods and services are generally budget-funded (central or local governments), even if some of their costs can be charged to the end-users. However, this option requires consistent commitment over time and is necessarily limited for many resource-poor African governments. Therefore, financing the development of public goods, including their maintenance or replacement over time, would require: (1) reliable external sources of funding that do not hamper excessively governments' budget; and (2) forms of private-sector involvement in selected areas where it can find some interest through public-private partnerships. The latter may, in some instances, take indirect forms, as already demonstrated in a number of cases in Africa, such as commodity-linked para-fiscal or levy mechanisms to finance research and extension services (e.g. tobacco in Malawi).

Reform of the institutional framework

In the past, considerable importance has often been attributed to land regimes, on the grounds that "securing access to land" is the key factor in increasing food supply and developing agriculture⁶².

Today, the problem of securing access to land in Africa has two basic dimensions:

- allowing farmers to use their titled land as collateral for obtaining credit
- protecting the right of communities against encroachment by large foreign or national investment companies

It is obvious that a landless farmer cannot produce much. Therefore, a minimum quantity of land per worker is necessary. However, one should never forget that *the quantity a worker can manage depends essentially on the quantity of capital he or she has*. Only if sufficient capital is available can a farmer produce more than what is required for subsistence. Overlooking this important fact is the reason why so many land reforms have been failures. Provided with land but deprived of capital, beneficiaries of land reform could not make full productive use of the asset given to them, sometimes putting in jeopardy the overall economic conditions of the country because of a sharp drop in production. It is noteworthy that the mass of farmers benefiting from land reforms are generally unable to make use of the capital abandoned by the former land owners, as the machines in question are tailored for a large-scale, capital-intensive, labour-saving usage, whereas the new agrarian structure requires equipment designed for individual small- or medium-sized farmers.

The issue of economies of scale and the alleged advantage of large farms over medium and small farms has already been discussed. Successful land reforms in the past took this question seriously. For instance, in the French Revolution a number of landowners were killed or forced to run away. But at the same time, a sound monetary policy was set up, distributing an adequate amount of liquidity across the country to allow moderately rich people both to acquire the land sold by the state and, at the same time, increase the quantity of capital invested in farming. Very poor people did not benefit from the reform, but a development process was triggered. Above all, the system made possible the creation of a class of small landowners.

Whatever the context, the existence of a cadastre (an enormous public investment in Europe and the United States during the nineteenth century), and of a judicial system guaranteeing property rights was essential. These conditions are also *sine qua non* for the emergence a land market, which contributes to a more efficient allocation and use of land.

⁶² A complete analysis of the problem is provided in Platteau (1992) and Platteau and André (1996).

Synthesis of agricultural development policy options

Policy Instrument		Market failure/ risk targeted	Efficiency/ return	Possible targeting on the poorest	Cost
Category	Options				
<i>Import tariff</i>					
	Fixed tariffs	Not explicit	Indeterminate	Small (target-commodities)	Consumers
	Variable tariffs	Price volatility	Positive	Small (target-commodities)	Budget (moderate)
<i>Investments in the provision of public goods</i>					
	Infrastructure	Public good	Positive	Possible	Budget
	Research & extension	Public good	Positive	Possible	Budget
	Education	Public good	Positive	Possible	Budget
	Health	Public good	Positive	Possible	Budget
<i>Subsidies</i>					
	Input subsidy	Not explicit	Indeterminate	Small (target-input)	Budget
	Output subsidy	Not explicit	Indeterminate	Small (target-commodities)	Budget
	Direct payment	Not explicit	Indeterminate	Possible	Budget
<i>Tax exemption</i>		Not explicit	Indeterminate	Possible	Budget
<i>Price guarantee</i>		Price volatility	Positive	Small (target-commodities)	Consumers and budget (surpluses)
<i>Subsidised insurance scheme</i>		Price/yield volatility	Positive	Possible	budget
<i>Supply control</i>		Non explicit	Positive	Small (target-commodities)	Consumers or budget

POLICY ASSISTANCE WORKING PAPERS

0/1 E	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support Background document
0/1 F	Bureau Sous-régional de la FAO pour l'Afrique de l'Est et Australe	Sécurité alimentaire et développement agricole en Afrique sub-Saharienne - Dossier pour l'accroissement des soutiens publics Document de Cadrage
0/2	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support The Case of Ethiopia
0/3	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support The Case of Kenya
0/4	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support The Case of Malawi
0/5	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support The Case of Nigeria
0/6	FAO Subregional Office for Southern and East Africa	Food security and agricultural development in sub-Saharan Africa - Building a case for more public support The Case of Tanzania
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