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IN

SOUTHERN AFRICA

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THE ROLE OF AGRICULTURE AND TRADE IN ECONOMIC DEVELOPMENT

O Badiane

INTRODUCTION

The interrelationships between the development of the agricultural sector, the process of structural transformation, and the overall growth of the economy have been debated extensively in international literature. Economists generally disagree less about the need for industrialization and the necessity to accelerate structural change than about the strategy to promote the transformation of the economy, and particularly the role of the agricultural sector therein. The root of the controversy has been the nature of the growth-inducing process of transformation, whereby an economy turns itself from a predominantly agricultural and rural society into a largely industrial and urban society. The inevitable decline of agriculture during economic growth has confronted economists for decades with the question of its possible role in economic development. The purpose of this paper is to reassess the role of agriculture in that process, both from a theoretical point of view and from past experiences of developing countries. The treatment of the agricultural sector in development economics is briefly reviewed. The role of agriculture in the process of structural transformation and the conditions for its contribution to sustained economic growth are discussed. This discussion will show that, whereas industrialization is the ultimate engine of growth, sustained agricultural development remains a powerful strategy toward industrialization. The interrelationships between foreign trade and agricultural development are analyzed, indicating how both can contribute to industrialization and economic growth. Finally, some of the priorities for sustained agricultural development are discussed.

AGRICULTURE IN THE THEORIES OF ECONOMIC DEVELOPMENT

Three basic characteristics of agriculture explain both its neglect in the early theories of economic development and its rehabilitation in the writings of the sixties: (i) the dominance of food production for consumption in traditional agriclture, (ii) agriculture's importance as source of income and employer of low-productivity resources, particularly labor, and (iii) the progressive long-term decrease of its share in the global economy. The early models of economic development put too much emphasis on industrialization with no role for agriculture. The agricultural sector was treated primarily as a reservoir of low-productivity resources, primarily labor. Rosenstein-Rodan (1943) wrote in his classic article, "The first task of industrialization is ... to transform ... peasants into full-time or part-time industrial workers". As in the two-sector model developed in Lewis (1954) and in a number of subsequent growth models, the supply of "surplus"-labor out of agriculture is assumed to be "unlimited" and the pace of transformation to be constrained mainly by the demand for labor in the non-agricultural sector. In turn, labor demand in the modern sector depends solely on the rate of capital accumulation in that sector, so that an increase in the capital stock there becomes the main source of growth (Johnston & Mellor, 1961; Mellor, 1986). The above treatment of the agricultural sector implies that agricultural growth is not affected by the process of industrialization and has itself no significant impact on that

process, since labor is already in surplus and flows freely from the declining agricultural sector, and the emerging industrial sector creates "its own additional market" through wages spent on additionally hired labor (Rosenstein-Rodan, 1943:206). According to the above view of the industrialization process, agriculture has no "direct stimulus to the setting up of new activities" (Hirschman, 1958:109). Another source of bias against the agricultural sector came from the theory of import substitution that goes back to the work of Raul Prebisch (1950). He recommends a shift out of agriculture into industry due to declining export demand and to long-term deterioration of international terms of trade for that sector. Import substitution implies industrial protection, which, as shown empirically below, heavily taxes agriculture.

The pitfalls of industrialization strategies along the lines discussed above are that, by raising the capital stock to accelerate labor absorption from agriculture or by protecting import-substituting industries, they practically promote capital-intensive production processes and put a huge burden on the agricultural sector. Furthermore, given the limited size of the nascent industrial sector, the rate of growth, which is needed there to absorb the surplus labor out of agriculture, may be unattainable, especially in face of the concomitant stagnation of the neglected agricultural sector. Industry-biased strategies are, therefore, very likely to lead to sharp disequilibria in factor markets resulting in increased unemployment and lower economic growth rates. Lewis' previously cited article pioneered the rehabilitation of agriculture in development literature. Besides the focus on the transfer of surplus labor, Lewis clearly recognized the wage good constraint and underlined the need for increased agricultural production to sustain the industrialization process. He came to the conclusions that:

- industrialization depends upon agricultural improvements,
- industrial and agrarian revolutions always go together, and
- economies in which agriculture is stagnant do not show industrial development (Lewis, 1954:173).

Lele & Mellor (1981) underline the crucial role of technological change in agriculture, which has the dual effect of reducing the pressure on wages and creating demand for goods produced in the non-agricultural sector. Because of the high income elasticity of demand for food in low-income economies, it is unlikely that employment and income for the poor can be increased successfully without expanded food supply. Likewise, it is difficult to improve domestic demand for foodgrain without increasing the employment and income of the poor. Thus, "in the context of technological breakthroughs that greatly increase foodgrain supply, there is potential unity between the desire of the rural rich for expanded foodgrain markets and of the rural poor for greater employment" (Mellor & Lele, 1973:35).

The diverging theoretical perceptions about industry and agriculture in the literature of economic development can also be seen in practice with the development strategies of developing countries since World War II. Slow growth in employment, failing progress in poverty alleviation, falling domestic food supplies, rapidly increasing food import needs, and sharpening foreign exchange shortages raised various questions about the appropriateness of the early industrialization strategies in large parts of the third world. The need for agriculture-oriented industrialization or development strategies is, therefore, being stressed strongly in the recent development debates (Mellor, 1986; Adelman, 1984, 1986; World Bank, 1982).

As underlined by the discussion in this section, agriculture has a key role to play in the industrialization and modernization of the domestic economy. The basic question about that role concerns the true nature of the interaction between agriculture and the rest of the economy during the gradual process of structural transformation. Knowing and defining this role is crucial to successfully choosing strategies and to defining sector and economy-wide policies in developing countries.

AGRICULTURE, STRUCTURAL TRANSFORMATION AND ECONOMIC GROWTH

Progressive specialization and changes in factor intensities during the process of growth induce a gradual transfer of labor from the rural, agricultural sector to the urban, industrial sector. The continuously decreasing share of agricultural commodities in expenditures from increasing incomes, due to the inelasticity of demand, contributes further to the gradual decline of agriculture relative to industry.[1] The process of economic development takes place in the "accumulation of stocks of capital equipment in the form of industrial plants and machinery, transportation and communication facilities and other paraphernalia which enhance the productivity of workers in manufacturing, agriculture and other sectors of the economy" (Johnston, 1951:499). Even though the above view that progressive industrialization is the engine of sustained growth finds broad support, there is much dissent, in theory, as well as in practice, about how best to industrialize: through active industrial promotion or agriculture-led industrialization; through import-substitution or an export-led strategy.

Even if the most labor-intensive production techniques are employed, agriculture is very unlikely to yield the rates of growth necessary to absorb the growing labor force (Mellor, 1986). The analysis of long-term industrialization in 100 countries has shown that the growth rate of value added and input use in agriculture is about 40 to 50 percent less than in manufacturing (Syrquin, 1989). Consequently, the emphasis on the agricultural sector here cannot imply the neglect of the non-agricultural sector. The ultimate goal of the best agriculture-oriented development strategy must be to foster non-agricultural growth. And for agriculture to contribute to that goal, three conditions must be met. First, the size of the agricultural sector in the domestic economy must be large enough to induce aggregate effects. Second, agricultural growth must be based on cost-reducing technological change. Third, the rate of growth of demand for labor must be accelerated (Mellor, 1986). Once these conditions are met, agriculture leads the overall growth process through the following mechanisms. First, by raising the supply of food from domestic production and generating foreign exchange to finance the excess demand for food, it prevents the real wage rate from increasing to levels that would constrain growth in the non-agricultural sector. Second, the expansion of rural incomes induced by cost-reducing technologies creates demand for inputs and consumer goods and services. Third, due to productivity increases, resources can be transferred to the rest of the economy without constraining growth in the agricultural sector.

The empirical analysis of the experience of different countries lends strong support to the positive interrelationship between agricultural development and overall economic growth. A comparison of the growth performance of developing countries with more than a 20

[1] For recent estimates of the patterns of structural transformation see Syrquin (1989) and Panchamukhi, et al. (1989).

percent share of agriculture in total GDP during the seventies shows that, in 17 of 23 countries where the agricultural growth rate exceeded 3 percent, overall GDP growth rates were higher than 5 percent. Moreover, 11 of the 17 countries with GDP growth rates below 3 percent displayed agricultural growth rates below 1 percent (World Bank, 1982). Various estimates of the linkages between growth in agriculture and growth in the rest of the economy are presented in the first column of Table 1. Bautista (1988) found that, for 34 developing countries, a 1 percent growth in agricultural value added was associated with 1.3 percent growth in value added in the non-agricultural sector during the period between 1961 and 1984. Results obtained by Hwa (1989) and based on 1960-79 data for more than 60 developing and developed countries also indicate that an increase of 1 percent in the growth rate of agricultural output translates into an increase by 0.5 to 0.7 of 1 percent in the growth rate of industrial output. Furthermore, adding the growth rate of agriculture to that of per capita income as exogenous variables to explain differences in the rate of industrial growth among the same sample of countries, raises the coefficient of determination by 30 to over 100 percent. Findings by the same author show agricultural growth accounting for nearly one fifth of that part of GDP growth in developing countries not explained by differences in growth of factor inputs and exports and in the rate of inflation. Results obtained by Ahluwalia et al. (1989) and Rangarajan (1982) also suggest strong linkages between agricultural growth and growth in the rest of the economy, as indicated by the figures at the bottom of the first column of Table 1. Furthermore, simulations for India showed that a one-time increase in agricultural output of 1 percent in the early sixties would have raised overall income by 0.76 percent toward the beginning of the seventies, 30 percent of which was induced indirectly through the effect in the non-agricultural sector (Rangarajan, 1982). There is also some evidence that an agriculture-led growth strategy may be superior to one that focuses on active industrialization. Adelman (1984), for example, analyses the effects of shifting from an industrial export-led to an agriculture-led growth strategy by simulating a shift in the structure of investment in favor of the agricultural sector in developing countries. The results indicate that such a strategy would yield higher growth rates in both rural and overall real incomes. Regression results cited in Bautista (1988) and based on 1983 and 1984 data of 48 developing countries, show a 10 percent increase in per capita agricultural output associated with an approximately equivalent increase in per capita GDP, whereas a similar increase in manufacturing output is transmitted to only 20 percent to the global economy.

The major arguments for an agriculture-led growth strategy seem to emphasize the role of domestic demand and neglects the potential contribution of foreign trade to growth. What are the implications of the open economy environment for the role of agriculture in the growth process? Does the access to foreign markets, as a potential source of food supply and demand for output from the domestic non-agricultural sector, reduce the contribution that the agricultural sector can make? These questions are dealt with in the following section, which concludes with the complementarity between agriculture and trade orientation.

AGRICULTURE AND ECONOMIC DEVELOPMENT IN THE OPEN ECONOMY

Theoretically, developing countries can rely on international trade to satisfy their food needs. In fact, developing countries' food imports have been increasing throughout the last decades, as displayed by the figures in the second column of Table 2 for African countries. A look at the first column and last two columns, however, reveals two important features. First, it is clear that the rapid expansion of food imports is primarily due to the stagnation

Table 1
Estimates of sources of growth*

Authors (sample)	Endogenous variable	Exogenous variables	
		Agric. output	Total exports
Bautista 1988 (34 LDC)[1]	Non-agric. value added	1.32[a] (8.70)	
Riedel 1990 (All LDC)[2]	Real GDP		0.22 (6.52)
Panchamukhi et al. 1989 (92 LDC)[3]	GDP rate of growth		1.83 (1.28)
Hwa 1989 (63 LDC/DC)[4]	Industry rate of growth	0.49[b] (2.1)	
Hwa 1989 (87 LDC/DC)[5]	Industry rate of growth	0.72[c] (4.1)	
Hwa 1989 (42 LDC)[4]	GDP rate of growth	0.62[c] (4.2)	0.23 (5.1)
Hwa 1989 (69 LDC)[5]	GDP rate of growth	0.38[c] (4.2)	0.23 (5.1)
Ahluwalia et al. 1989 (India)[6]	Total value added	0.43[c] (22.3)	
Rangarajan 1982 (India)[7]	Output in consumer goods sector	0.45[c] (3.94)	
Balassa 1990 (10 NIC)[8]	Total output		0.04 (3.57)

Notes: Time period for estimations:
[1] 1961/84;
[2] 1965/86;
[3] 1970/84;
[4] 1960/70;
[5] 1970/79;
[6] 1960/61-1979/80;
[7] 1961/72;
[8] 1960/1973.

* Figures are regression coefficients and t-values in parentheses.
[a] Agricultural value added.
[b] Exogenous variable is ratio of total exports to GDP.
[c] Growth rate of agricultural output.

Table 2
Food production and imports in African countries

Countries	Cereal production per capita	Food imports	Food imports to agric. exports	Food imports to total exports
	Growth rates (%)		Ratio (average 1970-87)	
Bénin	0.6	8.0	0.63	0.41
Burkina Faso	1.6	6.8	0.92	0.77
Burundi	1.2	6.8	0.23	0.23
Cameroon	-1.8	6.8	0.19	0.09
Cent Afr. Rep.	-0.5	3.9	0.37	0.20
Chad	-3.6	8.8	0.19	0.11
Congo	-0.4	7.0	2.84	0.07
Côte d'Ivoire	-0.7	4.7	0.19	0.13
Egypt	-3.2	10.7	2.36	0.73
Ethiopia	-0.5	14.6	0.26	0.23
Gabon	-0.3	7.7	8.89	0.05
Gambia	-3.7	8.7	0.85	0.57
Ghana	-2.1	1.1	0.15	0.10
Guinea-Bissau	8.4	2.0	1.79	1.24
Kenya	-7.4	3.0	0.11	0.07
Liberia	-1.0	4.3	0.62	0.12
Madagascar	-4.9	5.8	0.22	0.17
Malawi	-5.5	0.8	0.08	0.07
Mauritania	0.2	7.5	2.43	0.33
Mauritius	0.2	3.2	0.36	0.23
Morocco	-4.6	3.3	1.18	0.27
Niger	1.1	7.3	0.78	0.17
Nigeria	-1.6	3.9	2.09	0.09
Reunion	0	5.6	1.53	1.29
Rwanda	-0.2	6.3	0.31	0.24
Senegal	-0.5	3.4	1.07	0.38
Sierra Leone	-2.7	4.3	1.30	0.34
Somalia	1.2	6.6	0.79	0.75
South Africa	-7.7	6.2	0.25	0.03
Sudan	-1.7	3.0	0.38	0.34
Tanzania	4.6	1.7	0.24	0.19
Togo	-1.4	7.4	0.55	0.20
Tunisia	0.4	4.8	1.67	0.20
Uganda	-6.3	0.9	0.06	0.06
Zaire	0.1	4.5	0.71	0.11
Zambia	-8.7	-0.3	3.76	0.05
Zimbabwe	-7.5	3.7	0.04	0.03
Means	-1.59	5.26	1.09	0.29

Source : IFPRI Data Base.

or even decline of food production, if cereals are used as example. The annual growth rate of per capita cereal production between 1970 and 1987 in the selected 38 African countries averages -1.59 and is negative or near zero for all but 9 countries. Second, the shift towards foreign sources for food supplies is not induced by higher capacities to import, which would be expected if the resource endowment of the various countries dictated specialization in non-food activities. The average ratio of food imports to agricultural exports (1.09) indicates that the largest (export) sector in African economies has not been able to earn enough foreign exchange to finance the food imports. For many of the countries listed in the table, food imports were, on average, several times higher than agricultural export earnings. For the majority of the countries, the ratio of food imports to total export earnings is not much lower than the ratio of food imports to agricultural exports. The exceptions are oil and mining exporting countries (Congo, Gabon, Nigeria, Mauritania, Morocco, Niger, South Africa, Zaire, and Zambia). Accordingly, the rapid expansion of food imports has little to do with the process of economic transformation and diversification, and reflects, rather, the consequences of retarded agricultural growth. The exceptions mentioned above can only confirm this conclusion if one recalls the likely negative repercussions upon agriculture of the Dutch-disease effects associated with the rapid expansion of oil and mining exports. In fact, these countries display the highest ratios of food imports to agricultural exports.

Agriculture in a typical developing country has the dual role of primary supplier of food and foreign exchange. Consequently, food imports may represent only a limited alternative to accelerated domestic agricultural growth. As the figures in Table 2 and the expansion of food aid in recent years suggest, for the vast majority of developing countries, international trade can be used only to a limited extent to raise the supply of wage goods, particularly in the presence of a stagnating agricultural sector. Of much greater importance is, however, the potential of international trade to contribute to growth in the agricultural sector and, thereby, to the transformation of the domestic economy. Consequently, the conflict between trade orientation and agriculture-based development strategies is merely apparent. In fact, the two are basically complementary. In the early stages of economic development, with a fairly rudimentary industrial sector, incomes needed to finance (food) imports in a "trade-led" strategy must come from the agricultural sector. Moreover, there is ample evidence that the contribution of foreign demand to internal growth is a function of the level of development of the domestic economy. In his analysis of the contribution of exports to economic growth for 41 countries, Michaely (1977) found a 50 percent correlation between the growth of the share of exports in total output and per capita GNP growth between 1950 and 1973 for those countries with a per capita GNP over US$300. For the sub-set of countries with a per capita GNP below $300, the coefficient of correlation was practically zero, and for the overall sample it was 0.380 percent. Using the same data base as Michaely and a modified approach, Heller & Potter (1978) arrive at similar results. For countries where GNP exceeds $300, they found a 60 percent correlation between the growth of per capita exports and that of per capita domestic product net of exports, against 10 percent for the lower income group. Their results confirm Michaely's finding that a "minimum threshold of development is needed before export growth and economic growth are associated" (Heller & Porter, 1978:192).

Balassa (1978) presented a similar analysis for 11 industrializing countries, and investigated the relationships between export and economic growth both during the first half of the 1960s and the beginning of the 1970s. The obtained correlation coefficients were

generally higher for the last period with strongly higher degrees of statistical significance, both with respect to manufactured and total exports. According to Balassa, "the differences in the subperiod results may be explained, at least in part, by the relatively low level of manufactured exports in several countries at the beginning of the period" (1978:183). The analysis of the relative contributions of domestic and foreign demand to economic growth by Urata (1989) also shows a much stronger contribution of domestic absorption at lower levels of economic development. If the foregoing conclusions are correct and the effective contribution of external demand to domestic growth requires the existence of a minimum industrial base, then at lower levels of development, the stimulus for growth must come from internal demand. The need for agricultural growth is, therefore, not reduced by the opportunity to trade in low income economies.

For African countries, Figures 1 through 4 compare (i) GDP growth and total export growth, (ii) GDP growth and agricultural export growth, (iii) agricultural growth and agricultural export growth, and (iv) industrial growth and agricultural export growth. Gross domestic product in Figures 1 and 2 are, respectively, net of total and agricultural exports. It is important to note that the analysis covers the period 1970 to 1987 when the international trade environment was far from favorable. Figure 1 confirms the general relationships between trade and economic growth. Figures 2 to 4 show that rapid growth of agricultural exports is closely associated with rapid growth in the non-agricultural sector and of GDP. This clearly shows the cost of overlooking the impact of industrialization strategies on the export performance of the agricultural sector. The strong relationship between agricultural output and export growth displayed in Figure 3 indicates that a policy environment favorable to trade encourages agriculture-based development.

To sum up, the results presented above show the importance of trade orientation and its relevance and the need for sustained agricultural development to lead the process of economic growth. They seem to indicate that the best development strategy for low-income developing countries is one that is outward-oriented and agriculture-based. That outward-oriented and agriculture-led development strategies reinforce each other is primarily due to the sensitivity of the agricultural sector to domestic trade regimes. This is due to two reasons. The first is that agriculture is generally a highly tradable sector. The second is that trade regimes have a strong bearing on the overall rate of economic growth and factor-intensities, and consequently on domestic demand for food. The impact of trade regimes on agriculture operates through the induced long-term changes in the real exchange rate, i.e., the relative price of tradables *vis-à-vis* non-tradables (Sjaastad, 1980; Clements & Sjaastad, 1984; Valdés, 1986; Krueger et al., 1988). Outward-orientated development strategies require an unbiased real exchange rate. The bias towards industry in development strategies results frequently from policies designed to encourage import-substituting production and protection against competing imports. Industrialization through protection raises the prices of industrial imports relative to those of exports, non-tradable goods, and unprotected imports and thereby reduces imports and discourages exports.

The last column of Table 1 shows a strong correlation between trade orientation and global economic performance. Evidence that inward-looking trade policies have been highly detrimental to the agricultural sector is also supported by recent studies at the International Food Policy Research Institute in several countries: Colombia (Garcia, 1981), Argentina (Cavallo & Mundlak, 1982; Mundlak et al., 1989), Nigeria (Oyejide, 1986), Zaire (Tshibaka, 1986), and the Philippines (Bautista, 1987). Agricultural exports suffer especially

from the effects of protection of the real exchange rate. Results compiled in Oyejide (1989), for instance, reveal that over 80 percent of industrial protection throughout the seventies resulted in an effective tax on agricultural exports in Côte d'Ivoire, Nigeria and Mauritius. The same was true for 41 percent of industrial protection in Zaire, and between 25 and 60 percent in Sudan. For Zambia, Jansen (1988) found that prices for major agricultural products in the seventies and eighties were 44 to 58 percent lower due to the appreciation of the real exchange rate. In a recent study of 16 developing countries, Krueger et al. (1988) showed that, due to the real exchange rate effect of prevailing commercial policies, agricultural exports were taxed by 25 to 30 percent. So far, the evidence presented in this section establishes a strong positive link between agriculture-led growth and outward-orientation. Balassa (1990) and Diakosavvas & Kirkpatrick (1990) show in recent studies that agricultural exports are highly responsive to changes in the real exchange rate. Consequently, establishing a macroeconomic environment more favorable to trade would help correct the bias against agriculture and raise its potential to contribute to the process of overall economic growth.

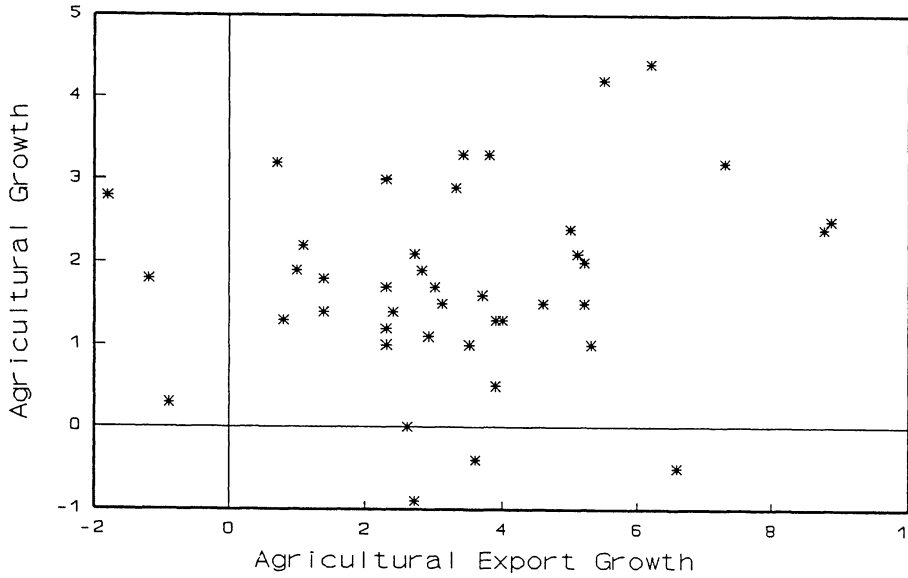

Figure 1: Relationship between agricultural growth and export growth in African countries, 1970 - 1987

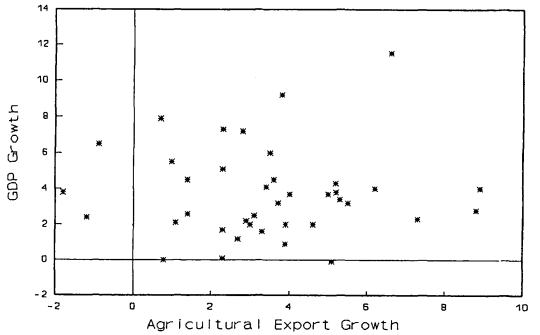

Figure 2: **Relationship between GDP growth and agricultural export growth in African countries, 1970 - 1987**

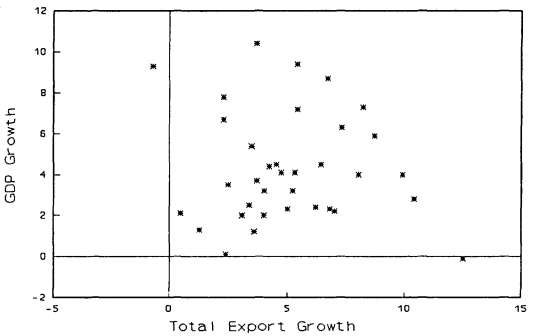

Figure 3: **Relationship between GDP growth and total export growth in African countries, 1970 - 1987**

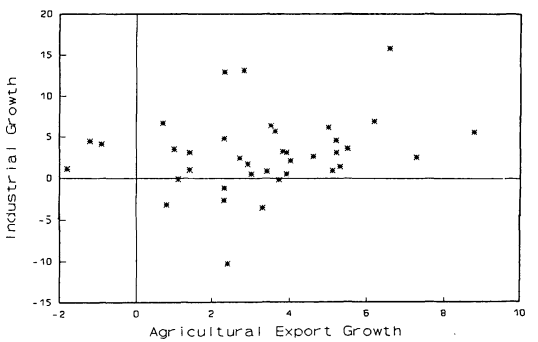

Figure 4: **Relationship between industrial growth and agricultural exports in African countries, 1970 - 1987**

In the first sections of the paper, agriculture's role in the transformation of the economy and its contribution to overall economic development have been theoretically discussed and available evidence presented. This was followed by the analysis of the complementarity between agriculture-led and trade-oriented development strategies. The next section attempts to briefly sketch major policy areas of a development strategy based on agricultural development.

POLICY PRIORITIES FOR AGRICULTURAL DEVELOPMENT

During the last three decades, per capita agricultural production has at best stagnated, leading to falling domestic food supplies, rapidly growing food import bills and decreasing export earnings. It is clear that this trend needs to be reversed if the growth process is to be accelerated. For the agricultural sector to lead that process, efforts must be made to promote technological change, strengthen the linkages between the domestic sectors, and improve the global policy environment.

Technology promotion

Technological change is the primary vehicle through which agriculture can potentially move from stagnation to high productivity and eventually lead the process of growth for the rest of the economy. A comparison of productivity in the agricultural sector of current developing countries with that of European countries reveals that the average level of agricultural productivity in the former countries at the beginning of the seventies was significantly below that of most developed countries at the onset of their industrialization process (Timmer, 1988:287). In other words, the comparison indicates that industrialization in developed countries was preceded by a much higher level of agricultural development. Accordingly, slow technological advancement in agriculture may have been a key factor in the observed slow process of industrialization among current developing countries. The promotion of agricultural technology is, therefore, a key policy area to which development and industrialization strategies have to pay more attention. Strategies to foster technological change are extensively discussed in the development literature. They include i) the promotion of adapted research to generate new production techniques and widen production possibilities, ii) measures to increase the availability of and access to improved inputs, especially seed varieties and fertilizer, and iii) basic rural education and training to improve skills in technology and management.

Commercialization and market integration

In discussing the contribution of agricultural growth to the development process in the previous sections, sufficient linkages between agriculture and the rest of the economy were assumed. However, in many developing countries the agricultural sector may still comprise a large subsistence sub-sector and commercialized sub-sectors with very weak links to the rest of the economy. The commercialization of subsistence agriculture is crucial to modernizing the rural economy, mobilizing rural resources, and sustaining the process of technological change. A key strategy toward commercialization of traditional agriculture is to decentralize urbanization. Decentralized urbanization fosters demand and supply relationships in the rural areas. On the one hand, it diversifies the rural economy and creates demand for food output. On the other, it raises the supply of consumer goods and services, which in turn has a positive impact on agricultural growth. Berthélemy & Morrisson (1989)

provide empirical evidence that a broadening of the range of available non-agricultural "incentives" goods in rural areas raises the marginal utility of farmers' money income, accelerates the pace of agricultural commercialization and raises incentives in the agricultural sector. The availability of and demand for modern inputs will also rise with increased commercialization and decentralization. Furthermore, decentralized urbanization improves the supply of health, education and other social services, which all contribute to a strong positive impact on agricultural labor productivity. The authors provide estimates of the long-run elasticity of agricultural supply in response to the supply of consumer goods in the rural areas of ten African countries ranging between 0.2 to 1.2. Rural urbanization and commercialization, therefore, should be made a high priority in the design of agricultural growth strategies, particularly in the early stages of development. In practice, however, they tend to be neglected since they imply collective investments that involve a substantial transfer of resources to the rural sector.

Commercialization focuses more on the rural economy and the contribution of the non-agricultural sectors to growth within agriculture. On the other hand, agriculture's contribution to growth in the rest of the economy is determined by the linkages through domestic factor markets (i.e., labor, agricultural inputs, and credit) and product markets (i.e., food and raw materials) and is, therefore, a function of the quality of integration between agriculture and the rest of the economy. The degree of integration determines the extent of the multiplier effect resulting from accelerated agricultural growth. Increased productivity and a higher degree of commercialization raise agriculture's potential to transfer resources to the rest of the economy and contribute to the growth process, with the strong need to raise the level of integration of the domestic economy by promoting the linkages between the rural and urban sectors, and improving factor markets. The strengthening of the linkages between the rural and urban economy also requires that investments be made in infrastructure and market institutions to reduce the cost of transactions on domestic markets. Furthermore, the choice of industrialization strategies also has an impact on the linkages between industry and agriculture. For instance, import-substituting and capital-intensive industrialization would tend to reduce linkages between agriculture and industry as opposed to domestic resources-based industrialization. It should also be stressed that the linkages between domestic sectors as well as the links to the international economy have strong implications for the pace of long-term economic growth.

Trade orientation

The main problem with past industrialization strategies is less the recourse to trade interventionism than the bias against tradables generally, and exports in particular. Because agriculture is the major export sector of developing countries and often has to compete on domestic markets under lower or zero protection levels, biased trade regimes may have a strong negative impact on its long-term development with unavoidable feed-back effects on the growth of the entire economy. The essence of trade is less the exchange of commodities between economies than the impact of such an exchange on the quality of the allocation of resources and on the flexibility of the domestic economy. This view of foreign trade implies the necessity of trade regimes with minimum distortive effects on linkages between the international economy and the domestic sectors. Such trade regimes need not be liberal or free-trade regimes, but must be neutral with respect to exports and imports. A neutral trade regime is, according to Bhagwati (1989), one under which the average effective exchange

rate for exports and that for imports, do not diverge significantly.

The results obtained above not only support the strong relationship between foreign trade and overall economic growth, but also show that rapid growth in the agricultural sector and the expansion of agricultural exports are closely related. Moreover, inward-looking trade strategies have been shown to be substantially more damaging to agriculture. Promoting an open and non-biased trade environment must therefore be part of the strategy mix designed to promote sustainable agricultural and overall economic development.

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