PN-ABD-258

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE 1975-85

ADMINISTERING FOOD PRODUCER PRICES IN AFRICA: LESSONS FROM INTERNATIONAL EXPERIENCES

BY OJETUNJI ABOYADE

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
1776 MASSACHUSETTS AVENUE, N.W.
WASHINGTON, D.C. 20036 U.S.A.
DECEMBER 1985

ISBN 0-89629-304-1

CONTENTS

TABLES

FOREWORD

In the summer of 1984 Professor Ojetunji Aboyade spent several months at IFPRI, pulling together his thoughts on the agricultural price policy needs of Nigeria, specifically, and of Sub-Saharan Africa generally. Professor Aboyade is a distinguished and influential authority on development policy for Sub-Saharan Africa. He was vice chancellor of the University of Ife, Nigeria, during its formative years. He was chairman of the Department of Economics at the University of Ibadan, where he still lectures while operating a consulting firm as well. He has long been a key adviser to the government of Nigeria on a wide range of policy issues and was a founding member of the Board of Trustees of the International Food Policy Research Institute.

Professor Aboyade was stimulated to set aside time for meditation on these important issues by his observations of the apparent impotence of African agriculture to contribute its share to solution of the key problems of Africa, the recognition that government policy must take the lead in returning agriculture to its central place in development strategy, and recognition of the widespread emphasis now being given to price policy as a means of addressing these issues.

This report from IFPRI is his balanced statement, a clarification of the substantial data, an analysis of the needs of an effective agricultural price policy, the complements that must precede or accompany price policy if it is to succeed, and the intense political problems that must be resolved as part of the formulation of an effective agricultural price policy. This report, in conjunction with a soon-to-be-issued IFPRI price policy paper and current intensive IFPRI research on the nature of new technology packages for African agriculture and on fertilizer policy, should contribute considerably to the evolution of an effective set of policies for getting African agriculture moving.

John W. Mellor

Washington, D.C.
December 1985

1. INTRODUCTION

In recent years there has been a resurgence of interest on the part of both researchers and policymakers in the effects of agricultural producer-price incentives on the national development process. For several Sub-Saharan African economies, this resurgence is a return to the old debate of the two decades following the Second World War on the proper function of the Agricultural Marketing Boards that dominated their export activities.

There are some important differences between then and now. Analytical tools for empirical testing and for tracing intersectoral and interpolicy linkages have become more sophisticated. Greater attention is being paid to domestic food supply and its interaction with food from external sources and with agricultural trade. The domestic food-production situation has also declined dramatically into a worrisome and intolerable policy challenge.[1]

Against that background, the present study is an exploration of the literature to see what possible effects a higher farm-level producer-price incentive can have in the short to medium run in addressing the region's growing food-production deficits. In particular, the institutional factors and administrative arrangements necessary for a viable producer-price incentive system are examined against the background of some case-study experiences in Africa and Asia.

It is essentially an interpretive study within the broad tradition of institutional economics. Its focus is primarily on the national policymaker, economic planner, or sector adviser in Sub-Saharan Africa who may be anxious to arrest the deteriorating domestic food situation while waiting for results of the essential but long-term productivity-raising technological improvements that are being gradually undertaken.

The poor knowledge about the magnitude and pattern of the supply response of food producers to price incentives in Sub-Saharan African smallholder rainfed agriculture is recognized, and the basically disadvantageous inelastic agricultural labor supply and rural-urban transfer function, the constraining fiscal and foreign-exchange

[1] Carl K. Eicher, "Facing Up to Africa's Food Crisis," Foreign Affairs 61 (Fall 1982); reprinted in Agricultural Development in the Third World, ed. Carl K. Eicher and John M. Staatz (Baltimore: The Johns Hopkins University Press, 1984).

resources, and the limited administrative capacity of public-sector management are noted.

The study nevertheless argues that a better-informed producer-price intervention program can be a beneficial instrument and can contribute, in the context of other complementary policy measures, to the arresting, if not the reversal, of the region's growing food gap. The particular character of the power structure and administrative system of the government that would be needed for a viable and fruitful system of producer price intervention are sought. In the process, the attempt is made to open up further directions in which policymakers, economic analysts, and field investigators might turn their research interests to improve the African food economy.

2. THE INCENTIVES SYSTEM

PRODUCER PRICES AND THE DEVELOPMENT PROCESS

The deteriorating food and agricultural situation in Sub-Saharan Africa has been amply documented and presented in the literature.[2] There is now some evidence, though, that part of the observed deterioration in domestic production may well be the result of a statistical fluke, arising from different cutoff points in periodization.[3] There is nevertheless no question about the growing gap between the food imports of the region and its domestic production. By 1980, that gap had reached more than 8 million metric tons of cereals, or 21 percent of domestic production, and it is estimated that it reached about 10 million tons by 1984, or 25 percent of domestic production. Clearly, food production per capita has been declining by about 2 percent a year since 1970.

What is even more distressing from a policy standpoint is that the region seems to be running out of options in virtually every area of economic development--food, nonfood, and nonagriculture--with apparently little or no cost advantage over the rest of the world left in any sector. Within the agricultural sector itself, the historical dependence of the region on a horizontal expansion of the resource-based farming systems seems also to be reaching its agroclimatic limits, and sustained future growth may well depend, in Bruce Johnston's view, on the ability to switch to science-based

[2] International Food Policy Research Institute, Food Policy Issues and Concerns in Sub-Saharan Africa, papers prepared by researchers at IFPRI and discussed with colleagues in Ibadan, Nigeria, February 9-11, 1981 (Washington, D.C.: IFPRI, 1981); see also Leonardo Paulino, "The Evolving Food Situation," in Accelerating Food Production Growth in Sub-Saharan Africa, ed. John W. Mellor, Christopher L. Delgado, and Malcolm J. Blackie (Baltimore: The Johns Hopkins University Press, forthcoming).

[3] It appears that slightly different impressions emerge if the data set is for the periods 1960-70 and 1970-80 from those that emerge if the data set is for the periods 1962-72 and 1972-82. The low watershed, statistically, appears to have been about 1972-73, both globally and for Sub-Saharan Africa. (Leonardo Paulino and John W. Mellor, "The Food Situation in Developing Countries: Two Decades in Review," Food Policy 9 [November 1984] reprinted by IFPRI).

farming systems.[4] Furthermore, it is not even as if those scientific and technological solutions are readily available, because the agroclimatic, agroeconomic, and social-institutional peculiarities of the region severely limit, and even sometimes preclude, direct application of externally evolved innovations.

The necessity for--indeed the inevitability of--such scientific and technological solutions through systematic research and infrastructural investments is the main point made by those who regard attempts at fiddling with pricing policies as seeking an easy way out of a tough development hole.[5] Their structural perspective has thus been set in clear contrast to the getting-the-prices-right posture represented in some of the main policy statements of the World Bank.[6] One particularly strong element in the argument is that even if producer prices were raised far beyond international levels, there are still strong constraints in the milieu of African agricultural production--especially in farm labor and rural infrastructures--that would prevent significant increases in the volume of marketable surplus food. The search for domestic self-sufficiency in food must therefore be sought in nonpricing incentives and structural change.

Empirical backing is sought and established by the parallel development experience in Asia, especially during the "green revolution." In spite of the land-scarce situation, the total cropped area increased in India and Bangladesh.[7] Higher cropping intensity, with substantially higher yields, was made possible by high-yielding varieties of seed, fertilizer, irrigation, farm equipment, and rural infrastructure. Production incentives assumed significance only in a technologically dynamic setting, as evidenced by the example of Punjab, where in the period of posttechnological change (from the late 1960s) the farmers' residual--their return on land and management--had remained substantially higher than in the preceding period despite increases in the total costs of production.

4 Bruce F. Johnston, "Agricultural Production Potentials and Small Farmer Strategies in Sub-Saharan Africa," in Agricultural Development in Africa: Issues of Public Policy, ed. Robert H. Bates and Michael F. Lofchie (New York: Praeger, 1980).

5 Christopher L. Delgado and John W. Mellor, "A Structural View of Policy Issues in African Agricultural Development," American Journal of Agricultural Economics 66 (December 1984): 665-670; reprinted by International Food Policy Research Institute.

6 World Bank, Accelerated Development in Sub-Saharan Africa: An Agenda for Action (Washington, D.C.: World Bank, 1981).

7 Dayanatha Jha, C. G. Ranade, and Christopher Delgado, "Technological Change, Production Costs, and Supply Response," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

The structural approach to addressing the problems of agricultural underdevelopment could be further strengthened by the difficulties experienced in designing incentives for settling frontier regions. If producer-price incentives were the only, or even the most important, hindrance to the expansion of domestic agricultural output, then it could be expected that by raising producer prices significantly, transmigration from Java to the Indonesian outer islands or from the Southeast of Brazil to Amazonia, for example, would be substantial. But experience has shown from those and other cases that sustaining expanded production in empty lands indeed involves addressing several problems of logistics, soil survey, ecological assessment, cropping trials, and infrastructure.

But all the foregoing do not amount to a denial that price incentives can have some beneficial effects, or that their absence has not indeed contributed to Africa's lagging agricultural sector. To say that measures other than pricing are necessary for sustained development is not tantamount to a negation of the importance--even supreme importance--of price incentives in particular epochs of that development process. Even where, as in the case of Bangladesh, the nonprice factors were demonstrated to be more effective than the pricing factors, the reinforcing effect of the latter was clearly evident.[8] And the success story of India must again be seen against the background of the fact that by the time of the green revolution the country had installed one of the most sophisticated food-marketing and agricultural price-intervention systems in the developing world.

By the same token, it is not necessary to deny that nonpricing incentives are needed in a complementary policy package in order to argue for the beneficial effects of imaginative pricing and marketing policies. Neither needs to be regarded as a panacea, nor should they be set as mutually exclusive policy alternatives. Product prices and their relation to production still form the core of economic analysis and of development policy formulation. They are, however, best appreciated when the background assumption is constantly borne in mind, namely, that all other important determinants of output are either constant or change only marginally--except, of course, that in the case of the African agricultural response system, the basic assumption is that the smallholders' production capacity has not reached its physical maximum under the land-expansive environment and that higher real farm revenues can stimulate additional streams of output during a short to medium period, especially if producers visualize the real price increase as a permanent one. What is there-

8 Raisuddin Ahmed, Agricultural Price Policies Under Complex Socioeconomic and Natural Constraints: The Case of Bangladesh, Research Report 27 (Washington, D.C.: International Food Policy Research Institute, 1981).

fore important would seem to be a producer-price policy that is consistent with the requirements for long-term growth.[9]

Although it is acknowledged that agricultural pricing can make--and historically has made--a difference in the development process, there can be many grounds for disagreement over its effects, both theoretically and empirically.[10] Farmers may respond differently to input price incentives the way they respond to output price incentives. Production response elasticities are often larger in the long run than in the short run, but not necessarily symmetrically by crop, region, or farming system. Intended effects are invariably accompanied by unintended effects, just as certain consequences of a price policy may be direct or indirect. The effectiveness of a price-support program on output expansion also depends as much on its size as on its timing, consistency, spatial pattern, and surrounding marketing administration. And there is as yet no unambiguous general theory to link the various dimensions and complexities with the process of national economic growth. These may well be part of the basis for the observation that agricultural pricing policies seem generally to have produced effects in developing countries different from--and sometimes diametrically opposed to--those observed in the developed countries.[11]

The various outpouring of writings on the subject during the past two decades seems finally to have confirmed Raj Krishna's neat summary and balanced judgment:

> The transformation of traditional agriculture is primarily a techno-organizational episode; the transformation cannot be brought about only or mainly by price movements. However, the techno-organizational effort can be retarded or accelerated by price movements. Favourable price movements can speed up the diffusion of innovations, the absorption of new inputs, the

[9] Lucio G. Reca, "Price Policies in Developing Countries," in The Role of Markets in the World Food Economy, ed. D. Gale Johnson and G. Edward Schuh (Boulder, Colo.: Westview Press, 1983). The case for possible slacks in the present-day farming system of African smallholders is made in Ojetunji Aboyade, "Growth Strategy and the Agricultural Sector," in Accelerating Food Production Growth in Sub-Saharan Africa, ed. John W. Mellor, Christopher L. Delgado, and Malcolm J. Blackie (Baltimore: The Johns Hopkins University Press for the International Food Policy Research Institute, forthcoming).

[10] George S. Tolley, Vinod Thomas, and Chung Ming Wong, Agricultural Price Policies and the Developing Countries (Baltimore: The Johns Hopkins University Press for the World Bank, 1982).

[11] Malcolm D. Bale and Ernest Lutz, Price Distortions in Agriculture and Their Effects: An International Comparison, Staff Working Paper 359 (Washington, D.C.: World Bank, 1979).

utilisation of the idle capacity, and even institutional adjustments. Unfavourable price movements can slow down or arrest all these processes.[12]

It is thus not surprising that price intervention in food and agricultural development has become universal and all pervading. As Alain de Janvry demonstrated, free-market determination in that sector has become largely a myth.[13] And because of this pervasive involvement of government in food-price policymaking, it becomes necessary to understand the theory of the state as well as the character of particular governmental regimes in the way in which they relate to farming and to farmers. It is against the background of such imperatives of theory and reality that the problems of food pricing policy in Sub-Saharan Africa must now be examined.

FOOD SUPPLY RESPONSES

The productive capacity of a country's agricultural system to respond adequately to price incentives is critical to the success of producer pricing policy initiatives. In Sub-Saharan Africa today, however, that capacity is not independent of what has happened to the international food economy since the early 1970s. Price intervention measures have grown so universal that even nonagricultural countries, such as Japan, support their producers at price levels sometimes considerably higher than world market prices. But of greater significance to Africa has been the growing unwillingness of the principal grain-exporting nations to carry stocks as large as those of the 1960s, thereby generating increased variability in international grain prices since the early 1970s.[14] Variations in prices and quantities from abroad are translated into significant instabilities in domestic food prices, consumer expenditures, farm incomes, national incomes, and balance of payments of the developing countries, exposed as they have long been to international trade in food

[12] Raj Krishna, "Agricultural Price Policy and Economic Development," in Agricultural Development and Economic Growth, ed. H. M. Southworth and Bruce F. Johnston (Ithaca, NY: Cornell University Press, 1968).

[13] Alain de Janvry, "Why Do Governments Do What They Do? The Case of Food Price Policy," in The Role of Markets in the World Food Economy, ed. D. Gale Johnson and G. Edward Schuh (Boulder, Colo.: Westview Press, 1983).

[14] Alberto Valdés, "A Note on Variability in International Grain Prices," International Food Policy Research Institute, Washington, D.C., April 1984 (mimeographed).

and agriculture.[15] With an open trade regime, this makes the setting of countervailing domestic producer-price incentives more problematic and supply-response effects more difficult to monitor and isolate. They become even more intractable in situations in which there are parallel domestic price distortions in the main markets for products and factors of production.[16]

There are, however, a priori reasons for expecting that, even in such circumstances of external exposure and domestic price distortion, higher producer prices could stimulate greater production. Romeo M. Bautista recently established the conditions necessary for an increase in domestic food producer prices to bring about higher agricultural income:[17] the greater the relative importance of food crops in agricultural income, the less substitutable are food and export crops in production; and the larger the own-price supply elasticity for food crops, the smaller the value-added coefficient in food crop production. Except that the value-added coefficient is not small, these conditions seem to fit the general picture of smallholder agriculture in Sub-Saharan Africa. But the more important question is whether the resultant higher agricultural income will subsequently generate an expansion of food production.

Gerald Helleiner has provided an analytical framework for expecting that under the conditions of rainfed smallholder agriculture in Africa--few purchased inputs and little specialized capital--the short-run expectation is of average expansion responses to an increase in price--that is, of a rising average revenue product.[18] In spite of the complex system of tradeoffs in the peasant decision-making milieu, a positive correlation can be expected between the price of a crop and the sales volume of its marketed surplus. And indeed, such positive supply responses have been recorded for a wide variety of African smallholder cash crops: cotton, coffee, cocoa, palm produce, tobacco, and rubber. But although the price-supply elasticity tends to increase gradually with time, the very long-term importance of time in the response system causes the effects of new

[15] Peter B. R. Hazell, "Sources of Increased Variability in World Cereal Production Since the 1960s," Journal of Agricultural Economics 36 (May 1985).

[16] Ramgopal Agarwala, "Price Distortions and Growth: A Study of the Association in Developing Countries," Finance and Development 21 (March 1984).

[17] Romeo M. Bautista, "Domestic Price Distortions and Agricultural Income in Developing Countries," International Food Policy Research Institute, Washington, D.C., 1984 (mimeographed).

[18] Gerald K. Helleiner, "Smallholder Decision Making: Tropical African Evidence," in Agriculture in Development Theory, ed. Lloyd G. Reynolds (New Haven: Yale University Press, 1975).

inputs, technological improvements, infrastructures, and institutional factors to dwarf the response progressively.

There are also other problems in the attempts to establish and measure the supply responses of African farmers empirically. First, the farmers probably do not really know what prices they actually receive ex farm for their products (as compared, say, to available estimates of Asian farm-level prices).[19] Second, most of the commodities studied were export cash crops--beverages, perennials, and fibers--not food crops per se. Third, whereas there are some data on individual crops, there has been no reliable evidence on aggregate supply responses--a particularly unsatisfactory situation, given the extensive African practice of mixed-crop farming. Fourth, there are several general weaknesses and biases in estimation procedure for historical agricultural supply elasticities.[20] Finally, most of the historical series were actually implicit price responses, not really the product of experimental (induced or simulated) price incentives, and their results may not offer an adequate guide to the way the farmers may react in the future to deliberate and significant increases in their actual price receipts.

Nevertheless, various attempts have been made to estimate the probable magnitudes of the food supply responses in the developing countries. John Mellor has argued that there are good theoretical and empirical reasons for believing that although the elasticity would be positive for low-income countries generally, the expected values for the aggregate food supply would be low--of the order of only 0.1 and 0.2--because of the essentially static technological environment.[21] On the other hand, Scandizzo and Bruce reported actual estimates of acreage response in the range of 0.1 to 0.8 for short-run elasticities and 0.3 to 1.2 for long-run elasticities.[22] The ranges of their reported estimates of yield responses tended,

[19] Raisuddin Ahmed and Narendra Rustagi, "Agricultural Marketing and Price Incentives: A Comparative Study of African and Asian Countries," draft of paper prepared for the Food and Agriculture Organization of the United Nations, International Food Policy Research Institute, Washington, D.C., May 1984 (mimeographed).

[20] Pasquale L. Scandizzo and Colin Bruce, Methodologies for Measuring Agricultural Price Intervention Effects, Staff Working Paper 394 (Washington, D.C.: World Bank, 1980).

[21] John W. Mellor, "Food Price Policy and Income Distribution in Low-Income Countries," Economic Development and Cultural Change 27 (No. 1, 1978); reprinted in Agricultural Development in the Third World, ed. Carl K. Eicher and John M. Staatz (Baltimore: The Johns Hopkins University Press, 1984).

[22] Scandizzo and Bruce, Measuring Agricultural Price Intervention Effects.

however, to be lower and also appeared less reliable and less numerous in the cases observed. The cases reported by Marian Bond, although methodologically somewhat less rigorous, tend again to confirm that a high correlation exists between the elasticity of acreage for annual crops in Sub-Saharan Africa and the elasticity of their output with respect to price, but that a somewhat lower correlation exists for perennial crops.[23]

In the light of all this, it can be said, first, that African peasant farmers respond to price signals. Second, the elasticity of their aggregate food production is lower than that of individual crops. Third, their long-run supply response is higher than the short-run response, building up in time if the price increase persists for a sufficiently long period. Fourth, sufficient spare capacity seems to exist for suitable expansion of food and nonfood crops so that increasing producer prices can lead to increased production even if not necessarily greater productivity per acre--as distinct from increased revenue product in proportion to farm labor. And finally, the apparently inelastic rural labor supply constraint may not yet be so strong that a significant real increase in real farm income per capita cannot overcome it, given the interesting pattern of rural-urban-rural migration of labor already being observed in the region.

These points are in addition to the other general observation of a decided shift in African smallholder agriculture to higher-value crops at the expense of low-value crops--from coffee and cocoa, for example, slowed by external demand conditions to sugar, tea, and tobacco. What the present challenge to food policy in the region requires is not simply an increase in the value of total agricultural production through such crop substitution; over and above such shifts, an enduring food policy for the region must be predicated on an increase in overall production from increases in the marketed surplus quantities of the principal food and agricultural crops both for domestic production and for export. It is unlikely, however, that this can be achieved without reversing the present adverse internal terms of trade to the agricultural sector. And, as Uma Lele argues, it might thus require that additional resources be brought into agriculture from the nonagricultural sectors without substantially increasing production costs and in response to changes in relative prices.[24]

[23] Marian E. Bond, "Agricultural Responses to Prices in Sub-Saharan African Countries," IMF Staff Papers 30 (December 1983).

[24] Uma Lele, "Considerations Related to Optimum Pricing and Marketing Strategies in Rural Development," in Decision-Making and Agriculture, ed. Theodor Dams and Kenneth Hunt (Oxford: Oxford Agricultural Economics Institute, 1977).

The extent to which such policy measures are feasible clearly depends on the status of the existing resources and policy conditions in the various national economies of the region.

A TAXONOMIC VIEW OF THE AFRICAN FOOD ECONOMY

Hitherto, Sub-Saharan Africa has been referred to as a homogeneous region. But in the literature attempts are sometimes made to divide the region into subregions or development typologies. For the purposes herein, namely that of administering agricultural producer prices, the question might then be asked whether it is necessary or helpful to divide the region into typologies, or whether it is even better to treat each country as a special case in its own right.

Students of the region have found little difficulty in pointing out several resource, structural, historical, and operational characteristics that make the development challenge of Sub-Saharan Africa distinct from that of either Asia or Latin America. Those characteristics are well known; particularly so is the inelasticity of the agricultural labor supply function in relation to the minimum urban wage rate. With a few local exceptions, it can be said of Sub-Saharan Africa generally, in a way that it cannot be said of labor-surplus Asia, that the implicit real rural income per capita may perhaps have to be increased substantially before additional labor supply can be expected to flow back into agriculture to take advantage of a given increase in the producer price of food. If that is the central issue, it could be asked: why not then just treat the region as one analytical entity?

The answer is simply that in spite of this common feature, historical experience in agricultural output has in fact varied considerably within the region. Such observed differences and their underlying factors may thus be expected to throw some light on the probable consequences of alternative development policy packages that might be recommended, against the background of differences in the history, geography, and social organization of the respective countries concerned. It is often in the attempt to probe and isolate such differences that alternative subdivisions of the region are applied.

Several standard and familiar classification systems long employed in the literature are not likely to help bring out very clearly the real policy problems of administered price regimes in the region. Examples are those that simply divide Sub-Saharan Africa into oil exporting and oil importing countries, or semiarid countries and those that are subtropical, or low-income and middle-income countries, or etatist countries and those that are market-oriented. Attempts to combine two or more of these dichotomies, such as the distinction between low-income semiarid countries and low-income subtropical countries, or between middle-income oil exporters and

middle-income oil importers, or between etatist low-income and market-oriented low-income countries, are usually unsatisfactory.

In some recent works on empirical testing in Sub-Saharan African agriculture, following the controversy provoked by the World Bank, some finer distinctions have been made.[25] Dharam Ghai and Lawrence Smith classified a number of African countries according to trends in real producer prices observed in the direction of real food price trends combined with that of real export price trends.[26] Jerome Wells, on the other hand, has studied the way various countries in the region have deviated since 1960 from certain benchmark data in the World Development Reports and the emerging patterns of the growth of food production per capita, the growth of food output in relation to the agricultural labor force, the growth of the labor force, and the growth of the total population of a sample of non-African countries.[27] Kevin Cleaver has related the post-1970 average growth rates of agricultural production in each country to the degree of farm-price discrimination: low, medium, and high discrimination.[28] David Wheeler has sought to separate the effects of environmental factors and luck from those of various policy measures undertaken.[29]

Undoubtedly, these recent efforts are likely to advance our understanding of the mechanics of change in African agriculture more than the old simple systems of categorization. To go one step further, however, Sub-Saharan African countries could be classified, for the purpose of analyzing different regimes of administered agricultural prices, along the lines suggested in Table 1.

The resource-carrying capacity can be conceived as a vector of the ratio of natural resource endowment--especially agricultural land--to a country's total population, which represents the total domestic demand for food. In the short to medium run, it can be said to represent a constraint of an agroclimatic nature. For benchmark years 1970 and 1980, the hectares of cultivated land per capita (arable and planted in permanent crops) are estimated for each of 44

-

[25] World Bank, Accelerated Development in Sub-Saharan Africa.

[26] Dharam Ghai and Lawrence Smith, Food Policy and Equity in Sub-Saharan Africa (Geneva: International Labour Organisation, 1983).

[27] Jerome C. Wells, "Food Output, Productivity Growth, and Labour Force Transfer in Twenty-Seven African Countries, 1960-80," University of Pittsburgh, Pittsburgh, Pennsylvania, August 1984 (mimeographed).

[28] Kevin Cleaver, The Impact of Price and Exchange Rate Policies on Agriculture in Sub-Saharan Africa, Staff Working Paper 728 (Washington, D.C.: World Bank, 1985).

[29] David Wheeler, "Sources of Stagnation in Sub-Saharan Africa," World Development 12 (January 1984).

Table 1--Method of classification of the countries of Sub-Saharan Africa according to structure and performance, 1960-83

	Conditions of Production			
	Resource-Carrying Capacity		Organization and Specialization	
Policy Environment	Low	High	Bimodal	Unimodal
Exchange-rate regime				
Flexible	i	ii	iii	iv
	A		B	
In ible	v	vi	vii	viii
Domestic market intervention				
Weak	ix	x	xi	xii
	C		D	
Strong	xiii	xiv	xv	xvi

Notes: The numbers in each quadrant are used to classify countries according to their price policies and economic structure and performance. For example, a country with low resource-carrying capacity and a flexible exchange-rate regime would be assigned the number i in quadrant A. Classification categories are explained in the text below.

Sub-Saharan African countries, making some allowance for marginal or well-known instances of severe problems of inland transportation for the low versus the high instances of resource-carrying capacity. Clearly, for the future, a given country's resource-carrying capacity can be improved through infrastructural and technological inputs--irrigation, afforestation, improved seeds, mechanization, fertilizer, rural roads, scientific research, credit, and farm management--at rates higher than the growth in total population.

Organization and specialization can be regarded as a vector of the degree of concentration in agricultural production. It reflects the extent of both dependence on agricultural exports and monocultural agricultural trade, in the context of a country's dominant or prevailing farming system. Bimodalism generally reveals a low degree of peasantry, some element of big landlordism, significant plantation commercial farming, or a growing subsector of state farms. It tends to exhibit a higher degree of product concentration and of dependence on agricultural exports. Unimodalism, on the other hand, is associated with cases of high smallholder peasant proprietorship. In the short to medium run, the organization and specialization measure represents a constraint of an agroeconomic nature, but in the long run, it can be changed through a combination of institutional and technological innovations.

The flexibility or inflexibility of exchange-rate regimes are measured by estimating for each country (base year 1960) and for each of the benchmark years 1970 and 1980 an index of its currency's purchasing power parity--related to the value of the U.S. dollar--using an implicit price deflator in the country's gross domestic product. The general cutoff point was an overvaluation index of 150 and above throughout the two decades, to qualify a country as having an inflexible exchange-rate regime. Since 1980, some countries have of course changed their policy thrusts in that regard; Ethiopia, for example, has now become more inflexible and Uganda has become more flexible.

Information was weak for several countries on the strength of domestic market intervention in their food economies, and judgments had to be exercised or qualitative opinions sought from country specialists. Sometimes the classification was based on the strength of a country's marketing arrangement for export crops.

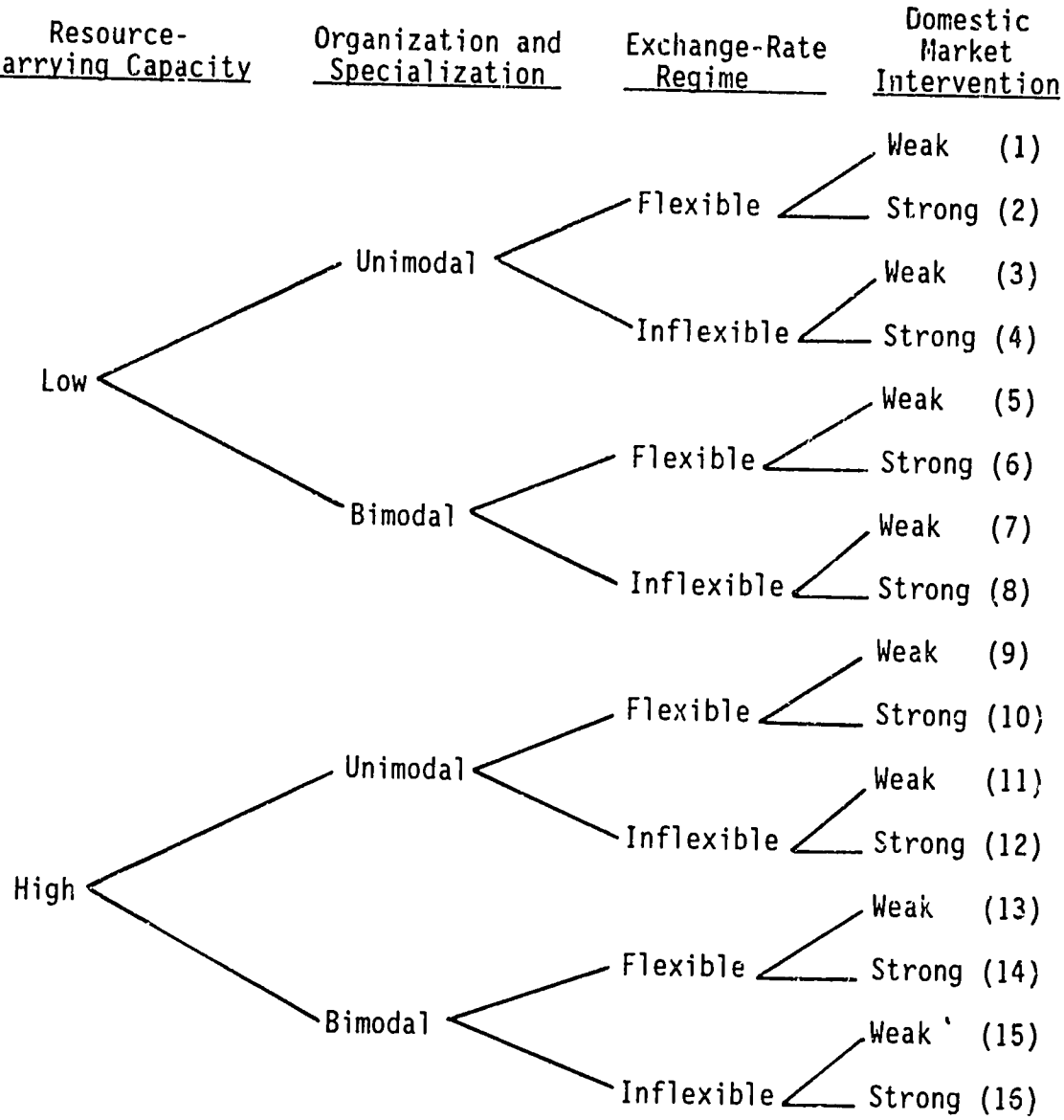
Each of the 16 cells in the matrix depicts the combination of a particular production relation and a particular policy environment in turn for each of the 4 principal quadrants, A, B, C, and D. A country's agricultural status within the given period can thus be described by a set of 4 numbers, from i through xvi. Consider the following illustration:

Country	Quadrant and Cells			
	A	B	C	D
Nigeria	v	viii	ix	xii
Liberia	ii	iii	x	xi
Uganda	ii	iv	x	xii
Tanzania	v	vii	xiii	xv

Clearly, opinions might differ significantly about the way a particular country is typed, especially since changes may have been going on within the period of reference in its basic production relations, its general policy environment, or both. Thus, no matter how carefully the available evidence on each indicator is interpreted, some degree of judgment is still required, and some element of arbitrariness may still persist in the case of any given country.

What is needed, even so, is a single indicator that can combine all the attributes described by or revealed in the four cells for any given country. To do this, consider the following logic tree. The numbers in parentheses in the last column of the schedule thus represent the respective single indicators of the 16 possible categories into which the various countries of Sub-Saharan Africa could now be classified for the purpose of analyzing the course and probable consequences of their changing food producer price policies.

Applying the procedure to each of the 44 countries in the system, the tentative judgments in Table 2 were determined.



The countries can now be grouped according to the respective case sets to which they belong, making it possible to see what bunching patterns of development typology may emerge. This grouping is presented in Table 3.

The frequency count of the number of countries is summarized further, according to overall structure and performance, in Table 4. Some of the striking features of this classification are the absence of any observed cases for typologies 7, 10, and 14; the case of Zaire, which stands in a class by itself; the controversial policy cases of Ethiopia, Somalia, and Tanzania, which turned out to be in the same group, in much the same way as the relatively successful countries of Cameroon, the Ivory Coast, and Liberia turned out to be in the same group; the large number of countries under case set 3; and the possible threads of political economy that may connect the countries within each group.

Table 2--Typologies of the Sub-Saharan food economy, 1960-80

Country	Resource-Carrying Capacity[a]	Organization and Specialization[b]	Exchange-Rate Regime[c]	Domestic Market Intervention[d]	Case Set
Angola	H	U	I	S	12
Benin	L	U	F	W	1
Botswana	L	B	F	W	5
Burkina Faso	L	U	F	S	2
Burundi	L	U	I	W	3
Cameroon	H	B	F	W	13
Cape Verde	L	U	I	W	3
Central African Republic	H	U	F	W	9
Chad	H	U	F	W	9
Comoros	L	U	I	W	3
Congo	H	U	F	W	9
Djibouti	L	U	I	W	3
Equatorial Guinea	H	U	I	W	11
Ethiopia	L	B	I	S	8
Gabon	H	U	F	W	9
Gambia	L	U	I	W	3
Ghana	L	U	I	S	4
Guinea	L	U	I	S	4
Guinea-Bissau	L	U	I	W	3
Ivory Coast	H	B	F	W	13
Kenya	L	B	F	S	6
Lesotho	L	U	F	W	1
Liberia	H	B	F	W	13
Madagascar	H	U	I	S	12
Malawi	L	B	F	S	6
Mali	L	U	F	S	2
Mauritania	L	U	I	W	3
Mauritius	L	B	F	S	6
Mozambique	H	U	I	S	12
Niger	L	U	F	S	2
Nigeria	L	U	I	W	3
Rwanda	L	U	I	W	3
Sao Tome and Principe	L	U	I	W	3
Senegal	L	U	F	S	2
Sierra Leone	H	U	I	W	11
Somalia	L	B	I	S	8
Sudan	H	B	I	S	16
Swaziland	L	B	F	W	5
Tanzania	L	B	I	S	8
Togo	L	U	F	W	1
Uganda	H	U	I	W	11
Zaire	H	B	I	W	15
Zambia	H	B	I	S	16
Zimbabwe	L	B	F	S	6

[a] H=high, L=low; [b] U=unimodal, B=bimodal; [c] F=flexible, I=inflexible; [d] S=strong, W=weak.

Table 3--Taxonomy of the Sub-Saharan food economy, 1960-80

Case Set	Structural Characteristics[a]				Member Countries
1	L	U	F	W	Benin, Lesotho, Togo
2	L	U	F	S	Burkina Faso, Mali, Niger, Senegal
3	L	U	I	W	Burundi, Cape Verde, Comoros, Djibouti, Gambia, Guinea-Bissau, Mauritania, Nigeria, Rwanda, São Tomé and Principe
4	L	U	I	S	Ghana, Guinea
5	L	B	F	W	Botswana, Swaziland
6	L	B	F	S	Kenya, Malawi, Mauritius, Zimbabwe
7	L	B	I	W	--
8	L	B	I	S	Ethiopia, Somalia, Tanzania
9	H	U	F	W	Chad, Congo, Gabon, Central African Republic
10	H	U	F	S	--
11	H	U	I	W	Equatorial Guinea, Sierra Leone, Uganda
12	H	U	I	S	Angola, Mozambique, Madagascar
13	H	B	F	W	Cameroon, Ivory Coast, Liberia
14	H	B	F	S	--
15	H	B	I	W	Zaire
16	H	B	I	S	Sudan, Zambia

Notes: L stands for low resource-carrying capacity, H for high; U stands for unimodal and B for bimodal; I stands for an inflexible exchange-rate regime, F for flexible; and S stands for strong domestic market intervention, and W for weak.

Table 4--Summary of the taxonomy of the Sub-Saharan food economy, 1960-80

Resource-carrying Capacity		Organization and Specialization		Exchange-Rate Regime		Domestic Market Intervention	
Low	28	Bimodal	15	Flexible	20	Weak	26
High	16	Unimodal	29	Inflexible	24	Strong	18
Total	44		44		44		44

3. SOME AFRICAN CASES

THE IVORY COAST

Case set 13 from the classification system shows a group of countries characterized by a relatively high degree of resource-carrying capacity, a bimodal agricultural production structure, a flexible exchange-rate regime, and a weak degree of domestic market intervention. The countries--Cameroon, the Ivory Coast, and Liberia--are reputed to have been among the better performers in Sub-Saharan African agriculture during the past two decades. Other fair performers are in case sets 5 (Botswana and Swaziland) and 6 (Kenya, Malawi, Mauritius, and Zimbabwe). An interesting observation is that the three case sets have in common a bimodal agricultural production structure and a flexible exchange-rate regime, suggesting that variations in the other two indicators--resource-carrying capacity and strength of domestic market intervention--are perhaps less important in explaining the variations in their agricultural performance.

From that group of nine countries, the Ivory Coast was selected for closer examination of the policy and management of its agricultural sector. The literature has usually lauded it as perhaps Africa's greatest development success story, in what has been euphemistically called "the Ivorian miracle." Cleaver classified it among the group of countries with low degrees of farm price discrimination--less than 15 percent--accompanied, in the case of the Ivory Coast, by an average growth rate of 4.7 percent a year in its agricultural production between 1970 and 1981. Five other countries in case sets 5, 6, and 13--Malawi with an annual growth rate of 4.1 percent, Kenya with 4.2 percent, Cameroon with 3.9 percent, Botswana with 8.5 percent, and Zimbabwe with -0.5 percent--were also included in his category of countries with low degrees of farm price discrimination.[30] Intercountry comparisons, however, can be tricky for drawing policy inferences, because Cleaver himself noted that his analysis of farm price discrimination explained only about 13 percent of his observed variations in the agricultural growth rates among Sub-Saharan African countries.

[30] The low growth rate observed in Zimbabwean agricultural production, as in that of Chad and Somalia in the same group, was explained by the prolonged and destructive civil strife that prevailed there during the period covered by the study (Cleaver, Impact of Price).

According to David Wheeler's analysis, it indeed seems that the Ivory Coast has simply been lucky--along with Kenya, Mali, Tanzania, Togo, and Burkina Faso.[31] Cameroon and Malawi scored high in both luck and good policies, whereas Ivorian policies were less of a factor than the country's favorable developmental environment.

Shankar Acharya's explanation is less complicated.[32] The Ivory Coast, together with Malawi and Kenya, is simply a very good example of a market economy, in sharp contrast to etatist countries such as Ghana, Sudan, and Tanzania. It has relied more on markets, especially on the international market forces, for its investment and output decisions, reinforced by a slower rate of Africanization in its high- and middle-level manpower. How enduring that policy thrust has been, however, is the very challenge that countries such as the Ivory Coast have faced since the early 1980s. In any event, it is not entirely true that the state limited its market intervention to the traditional public utilities and its infrastructural support to the directly productive sectors. Since the early 1960s, the Ivorian government has in fact intervened directly in the production and market regulation of the country's main cash crops, coffee, cocoa, cotton, and palm oil.[33]

Among the many components of the Ivorian agricultural success story during the period 1960-80--an abundant supply of favorably endowed land, the availability of good expatriate management cadres, a large migration of hardworking and low-cost farm labor from neighboring countries, and the generally favorable world market conditions for the country's main export crops--the World Bank has not failed to point out the importance of remunerative and stable producer prices.[34] This must clearly be a relevant consideration when comparisons are made with countries such as Ghana and Nigeria, with parallel factor endowments and similar international market opportunities, in their agricultural performance during the same period. Not only has the Ivory Coast succeeded in diversifying its agricultural activities--export crops, industrial crops, food crops, and livestock--it has also greatly increased the growth of its

[31] Wheeler points out that the presence of the Ivory Coast and Kenya in this assorted group was the result of their low scores on the HABIT measure, a kind of statistical learning process (Wheeler, "Sources of Stagnation").

[32] Shankar N. Acharya, "Perspectives and Problems of Development in Sub-Saharan Africa," World Development 9 (February 1981).

[33] Michel Gilles and Michel Noel, "The Ivorian Economy and Alternative Trade Regimes," in The Political Economy of Ivory Coast, ed. I. William Zartman and Christopher Delgado (New York: Praeger, 1984).

[34] World Bank, Ivory Coast: A Basic Economic Report, Annex 1, "The Agricultural Sector" (Washington, D.C.: World Bank, 1977).

domestic production and has drastically cut imports of food in spite of the rising rate of urbanization.

This dynamism seems to have cooled off since the late 1970s, however, following the progressive deterioration in the external markets for coffee and cocoa, the rises in the price of imported petroleum and in the interest rates on international financial markets, the growth of domestic inflation, the decline in productivity of public investment, and the general decline in the ratios of agricultural output prices to input prices.

The strength of the Ivorian agricultural structure, however, may well turn out to be its weakness: its stability may indicate inflexibility and an inability to adapt quickly to the changing environment. It is not so much its external exposure per se as the kind of basic agricultural crops involved--perennials such as coffee and cocoa--the nature of its production relations--planter commercial farmers with growing capitalization and high-level management--and the capacity of its agricultural marketing system.

There were indeed various specialized parastatal institutions for extending technical services and subsidized inputs to agricultural producers: SATMACI for general extension services, CIDT for cotton, SODEPALM and PALMINDUSTRIE for palm produce, SODUSUCRE for sugar, SOCTACI for rubber, SODEFEL for fruits and vegetables, and SODERIZ for rice. But the primary instrument of market intervention has been the CSSPPA, the Stabilization Fund for Agricultural Products, which operates a price-guarantee scheme and regulates marketing through licensing without having to take physical delivery of the crops. Working on the cost-plus principle, the fund could generate substantial surpluses during boom periods, such as the late 1970s, but its intermediary function in price stabilization is severely limited in a period of prolonged decline in prices, such as the early 1980s. With its past expansion and the relatively high price elasticity of its cocoa supply, the Ivory Coast has also become the largest cocoa-exporting country, facing an aggregate price inelasticity of world demand. Thus, further increases in producer prices may now become counterproductive with respect to aggregate export earnings.[35]

Furthermore, the social organization and political power of the country are such that the ups and downs of both the external market and the domestic economy can be absorbed for only a limited time without a serious internal crisis. Farm labor consists mainly of low-wage migrants. The farmer-planter bourgeoisie are locked with the urban elites and bureaucracy into the same dyarchical power structure and the same set of economic and financial interests. The

[35] Mathurin Gbetibouo and Christopher L. Delgado, "Lessons and Constraints of Export Crop-Led Growth: Cocoa in Ivory Coast," in Political Economy of Ivory Coast, ed. I. William Zartman and Christopher Delgado (New York: Praeger, 1984); reprinted by the International Food Policy Research Institute.

European concessionaires that run the large plantations have tried somewhat to move into such crops as sugar, cotton, and palm oil in efforts to diversify from cocoa and coffee, and much of their production continues to command privileged but not exclusive markets in the European Community.

The economic and social pressures on the system seem nevertheless to be building up rapidly following the deceleration in the rates of growth in income during the last few years. There are now clear incentive distortions in favor of urban-based manufacturing and uneconomic import substitution in the agricultural sector itself. Pressures for regional equity and for greater domestic self-sufficiency in food are pushing for allocation of more resources to the economically more difficult northern provinces. Contradictions are showing up rapidly in the incomes and employment structure between expatriate and Ivorian high- and middle-level manpower. The past protective cover of operating within the franc zone is being called into question by the adjustment imperatives of an independent exchange-rate policy, as rigidities and distortions show up in the system of macroeconomic instruments--tariffs, quantitative restrictions, import quotas, export incentives, the exchange rate, and the money supply. The use of migrant farm workers has not been sufficient to prevent recent increases in labor cost and may have contributed both to the rising relative value of foodstuffs and to communal tensions.

There are thus important lessons to be learned by African policymakers from the Ivorian experience of agricultural development. First, farmers of various size can respond with greater output to a price-incentive system that keeps production costs, especially the cost of farm labor, low in relation to farm-level output prices. Second, output marketing can be independent of input supply, with output marketing at least in the hands of private operators and with only a minimal parastatal body for regulation and stabilization.[36] Third, sustained efforts are needed in the complementary policy areas of agricultural research and rural infrastructures, especially roads, underwritten by public investment expenditure. Finally, in exploiting the opportunities possibly offered by international comparative advantage to a country in any given sector, there is great need for forward sector planning to achieve early diversification of the production base, in particular to ensure and sustain domestic food security from an early stage of the development process.

ETHIOPIA

Ethiopia is characterized, in this system, as having a low resource-carrying capacity, a bimodal agricultural organization, an

[36] Ibid.

inflexible foreign-exchange regime, and a strong degree of domestic market intervention. It shares those characteristics with Somalia and Tanzania. If, again, attention is focused only on the production relations and the exchange-rate system, then it would also encompass the countries in case sets 15 (Zaire) and 16 (Sudan and Zambia). In agricultural performance, these are all controversial cases in Sub-Saharan Africa. In all of them, apart from Sudan, the growth rate of agricultural production in 1970-81 was either below the average--in Somalia it was -0.6 percent a year and in Zambia it was 1.8 percent--or farm price discrimination was greater than 40 percent and the growth rate of agricultural production was also below the average, as in Ethiopia, Zaire, and Tanzania.[37]

Although Wheeler would argue that ideological labels have so far not been of fundamental importance in the relative performance of food and agriculture in Africa, he recognized himself the historical fact that good policy and good management can mitigate the misfortunes that may occur because of environmental factors such as lack of rainfall, violence, unfavorable terms of trade, and instability in foreign aid, worker remittances, or export earnings. He showed that several countries--Ghana, Uganda, Sudan, Madagascar, Zambia, Burkina Faso, Sierra Leone, the Central African Republic, Zaire, and Tanzania--could have grown faster under better policy regimes, even though some of them had been "unlucky" during the period.[38]

Ethiopia has certainly been an etatist country since the mid 1970s and has gone through a number of unlucky experiences during the past two decades--drought, civil strife, border wars, and instability in export earnings and foreign aid. Within bimodalism, it has also switched from big-landlordism to a growing state-farms sector and from feudalism to socialist land reform and mobilization of labor. Some of its soil is fertile from rich volcanic ashes, but only 7 percent of the country's total land is cultivated; the bulk of it, some 58 percent, remaining in rough pasture and woodland. Its agricultural policy experiments during the last two decades should therefore present some interesting insights for the rest of Sub-Saharan Africa.

In spite of the low level of food consumption side by side with the great potential for domestic food expansion, the imperial government did not until the late 1960s pay much attention to the related problems of food, agriculture, and rural development.[39] And when it did, the focus was not on the majority subsistence farmers but on the

[37] Cleaver, Impact of Price.

[38] Wheeler, "Sources of Stagnation."

[39] Seleshi Sisaye and Eileen Stommes, "Agricultural Development in Ethiopia: Government Budgeting and Development Assistance in the Pre and Post 1975 Periods," Journal of Development Studies 16 (January 1980).

commercial farming elites. Although this situation was turned around after 1975 and much support was given to the smallholders, the thrust of agricultural pricing policy remains the protection of the urban consumers and tends to support the producers only on the input side. There has thus been systematic neglect of producer price incentives as an instrument of agricultural development.

True, the land redistribution and tax reform measures of 1975 have had the effect of increasing the net earnings retained by the smallholders. The Zemetcha campaigns have also helped to bring about some growth in agricultural production through a rise in the country's fixed investment ratio and an increase in the public sector share of gross capital formation. But the observed growth in agriculture and ultimately in the gross domestic product from 1978 through 1980 was attributable to favorable weather conditions and the easing of hostilities in the northern and southeastern parts of the country.[40] Ironically, agricultural development also increased its dependence on external assistance, the volume of foreign aid to the sector having grown phenomenally between 1973 and 1977. The government was also more concerned with export promotion and the need for external balance than with domestic food requirements.

There was some growth in the production of cereals and pulses during the early 1980s, but again the drought that prevailed in 1983, especially in the northern regions, sent production some 6 percent below the 1982 level. The decline in output was probably also affected by the stagnant, sometimes declining, real prices received by the producers. In constant 1979 terms, the index of producer prices in 1983 was lower for every major crop; it was much lower for coffee, maize, and teff (the staple grain in Ethiopia) but only slightly lower for wheat, barley, and sorghum. When variations in the level of input prices are taken into account, the ratios of output prices to input prices were still higher in 1983 only for wheat, barley, and sorghum but still lower for coffee, maize, and teff.

Public expenditure on agriculture was more for the provision of inputs and extension services, settlement of underpopulated lands, rehabilitation of lands affected by erosion, and development of irrigation. Whatever effects that any or all of these expenditures may have in the future--on the assumption that they have in fact been productively invested--they have not yet had any noticeable effect on the growth of food production.

Marketing schemes were in operation, but they were simply not geared to serve as producer incentives. The Agricultural Marketing Corporation had already been established in 1976 by the new regime for the purpose of stabilizing prices and ensuring the proper

40 Food and Agriculture Organization of the United Nations, Delivery Systems of Agricultural Services to Small Farmers in Africa: Case Studies from Ethiopia, Kenya, and Nigeria (Rome: FAO, 1983).

distribution of food. Peasants' associations and service cooperatives are also supposed to liaise between the producers and the marketing system, which consists of licensed wholesale and retail dealers as intermediaries. But the service cooperatives have been slow to develop the expected storage facilities, preferring to concentrate instead on taking advantage of the discriminatorily favorable subsidies on fertilizer and other inputs. The Agricultural Marketing Corporation buys directly only the outputs of state farms, which it then sells to the Basic Commodities Supply Corporation. The quantities handled in such direct marketing have been scarcely adequate to satisfy the needs of the government for defense, hospitals, and the Ethiopian Food Security Reserve and have offered little room to play the market in dampening speculation and stabilizing prices. Foreign trade is supposed to be in the hands of the public sector, moreover, but a substantial proportion of exports of coffee and some portion of total imports have in fact been in the hands of private traders.

There have also been some problems with designing a workable pricing system. Given the discontinuity in the administered agricultural markets, price gaps exist, and the farmers have been able to market their surplus produce at considerably higher prices than those fixed for procurement by the parastatals. There have also been large differences among procurement prices, official retail prices, and open market prices of agricultural commodities. This is the natural consequence of a policy arrangement that requires the Agricultural Marketing Corporation to purchase foodgrains from private wholesalers, who in turn are obliged by regulation to sell half of their own purchases from the farmers at a price that is only a little higher than the announced ex-farm prices. And they are to make all these sales nationally and at designated trading centers. The agricultural marketing scene has therefore been characterized by a multiple system of prices and by distorted distribution of foodgrains, which has left the private traders to make large profits through wide marketing margins.

Ultimately, the efficacy and growth of a marketing system depends on the strength of the production capacity from which it is derived. As already pointed out, during the past two decades Ethiopian agricultural strategy has been mainly concerned with direct support of inputs and extension services. But in scope and spatial coverage, the strategy has itself been rather narrow, and it could hardly have been expected to bring about more than marginal increases in agricultural output.

Long before the demise of the imperial Ethiopian government, an assortment of external donor agencies tried to "get agriculture moving" through a series of spatially concentrated comprehensive package programs: the Chilabo Agricultural Development Unit in 1967 under the aegis of the Swedish International Development Authority, the Wolamo (to be known later as Woleyata) Unit in 1971 under the sponsorship of the World Bank, and the Ada District Development Project in 1972 under the U.S. Agency for International Development.

During the 1960s and through the early 1970s the package approach was popular in the literature as the most effective means of disseminating green revolution inputs to a large number of farmers. It was backed by powerful Western intellectual institutions. The Ethiopian Planning Commission and the Ministry of Agriculture were not deeply involved in the experiment.

The intensive-package rural development projects did help build rural infrastructures, and they provided some extension services, but they did not adequately develop Ethiopian manpower or significantly increase total national food output. The rate of adoption of yield-increasing innovations went up in the affected areas, and even after the revolution, it was easier to reach farmers in those areas that were already affected by the pre-1975 rural development projects than in areas that were not. But because the projects were costly in financial and management resources, they served at best only 1 in 10 of the *awrajas* (administrative divisions) of the country.[41] Even the minimum-package projects that were introduced to moderate the costs and encourage the spatial spread could not make a dramatic difference in the entrenched feudal production relations or overcome the related problems of food shortage, rural outmigration, and urban unemployment. The World Bank has itself come to admit that such experiments in Ethiopia and elsewhere in Africa have not succeeded in addressing the fundamental problems of food and agricultural development.

From the Ethiopian experience it might then be said, first, that support of inputs may be necessary but not sufficient to get smallholder agriculture moving, especially where smallholders are concentrated in only a few spatially defined areas. Second, no matter how well meaning, a system grafted from outside a country--for some of the experiments had greater affinity to the early European or American history of individual holdings--cannot survive without the active involvement of affected citizens and indigenous officials in its design and implementation. Related to that are the issues of state power and legitimacy of the bureaucracy, both of which may at least in part represent feudal forces.

The third lesson is the necessity for coherent pricing policy in any agricultural marketing scheme. Floor and ceiling prices must be fixed, and in order to reduce the market spread, the marketing agency must be ready and able to buy, store, and release quantities as may be dictated by the imperatives of defending those floor and ceiling prices. For the Ethiopian Agricultural Marketing Corporation to perform any semblance of that kind of operation, substantially more resources, both financial and physical, must be put at its disposal. Even the better-equipped Coffee Marketing Corporation has succeeded in buying only about 60 percent of the marketable coffee production.

---

41 Tesfai Tecle, The Evolution of Alternative Rural Development Strategies in Ethiopia: Implications for Employment and Income Distribution, African Rural Employment Paper 12 (East Lansing: Michigan State University, 1975).

Finally, a revolutionary and radical program that attacks and resolves institutional bottlenecks in agricultural production relations could be very helpful in getting development going. But it would require great administrative skill and a good knowledge of market operations to coordinate policies and resolve the imbalances between demand and supply that may emerge. State farms have been shown repeatedly to be an inefficient substitute for a functioning system of smallholder agriculture. The proliferation of peasant associations and service cooperatives is also stretching the limited administrative and infrastructural capacities of government to keep up the revolutionary fervor, and the creation of more and more agencies only tends to add more bureaucratic problems than it solves. Under Ethiopia's agroeconomic situation, a full command economy is thus unlikely to thrive in its food sector.

NIGERIA

On the basis of its size alone, Nigeria should be considered in any serious case study of the development process in Sub-Saharan Africa. Its great potential for development is also probably matched only by its many missed opportunities. Because it is an important mineral-exporting country of the region, the mechanics of its agricultural growth and decline are of vital interest to economic analysts.

But Nigeria also happens to fall in the group of Sub-Saharan countries that have the combined assigned attributes of low resource-carrying capacity, unimodal organizational structure, inflexible foreign-exchange regime, and weak domestic market intervention. Together, they form the largest single group in the typologies shown here. And if, once more, only unimodality and exchange-rate inflexibility were to be considered, another six countries--Equatorial Guinea, Sierra Leone, Uganda, Angola, Mozambique, and Madagascar--would come into the fold.

Economically, Nigeria is a complex country to analyze, and its development experience of the past two decades does not fit readily into well-defined molds. It was omitted from the studies of both Acharya and Wheeler, but Ghai and Smith included it in the list of countries that in the 1970s exhibited a decline in real producer food prices in the face of an increase in both the real consumer food prices and the real export prices.[42] They then surmised that this was reflected in a rapid rise in the prices of imported foods as well as sharp increases in the marketing and transport charges for domestically produced foods. But Cleaver captured the essence of the

[42] Acharya, "Perspectives and Problems of Development;" Wheeler, "Sources of Stagnation;" and Ghai and Smith, Food Policy and Equity in Africa.

country's agricultural problem during the 1970s when he summarized it as having a medium degree of farm price discrimination--between 15 percent and 40 percent--but with a resultant average negative agricultural growth rate of -0.4 percent a year throughout the decade.[43] The implicit per capita growth rate must thus have been about -3.0 percent a year; thus explaining the dramatic rise in food imports financed by a booming petroleum export sector. That experience has provided a good illustration of the mechanics of the "Dutch disease" syndrome where a rapidly expanding nonagricultural export sector has negatively affected domestic food production. Although on the average agricultural export prices may still have been rising, the volume of agricultural export commodities has stagnated as a result of the greater excitement provided by booming mineral export earnings.

The distinguishing feature of the Nigerian economy from the standpoint of development experience can therefore be described as a transformation from being a relatively efficient agricultural exporter to a large-scale food importer, as its agricultural cost structure, fueled by rising urban real wages, rose suddenly in relation to international prices. In the 1960s, its domestic agricultural prices were at about parity with world market conditions, but by the early 1980s, the average ratio of the domestic prices of all its principal agricultural products to their c.i.f. import equivalents had doubled, varying from sorghum at 1.23 to paddy rice at 2.88.[44]

The agricultural policy that underlined that transformation process was built around the supply of food imports--at an overvalued exchange rate--to the growing urban population and a deterioration in the rural income terms of trade that discouraged incentives to domestic food and agricultural production. The accelerated pace of outmigration from the rural areas was fueled by the rising urban real wage rates, the spread of universal formal but nonfunctional education for youths, and the sustenance of inexpensive food imports.

The costs to farmers of agricultural labor rose significantly. One striking feature of that food import policy is that a large component of the importation of food was undertaken by the federal government itself, duty free, in spite of the tariffs and quantitative restrictions that were supposed to be in place to protect domestic producers. It is clear, therefore, that the fiscal and marketing policies of the government were directed more to helping

[43] Cleaver, Impact of Price.

[44] Christopher Walton, "Lessons from East African Agriculture," Finance and Development 21 (March 1984); see also the reflections of a former chief economist of the World Bank, John C. de Wilde, Agriculture, Marketing, and Pricing in Sub Saharan Africa, African Studies Centre and African Studies Association (Los Angeles: University of California, 1984).

urban consumers than to stimulating the domestic production of food. This is reflected in the fact that since the late 1970s, farm-gate prices for the principal crops had declined in relation to the overall consumer price index by an average of about 3.5 percent a year, although aggregate demand for staple food was still rising about 3.0 percent a year, with an estimated total population growth of 2.7 percent a year. Throughout the 1970s, imports of staple food increased by an average of 18.6 percent a year, but agricultural exports were stagnant and even, in some important instances--cocoa, rubber, and groundnuts--declined. That development and, in particular, the rising costs of agricultural labor and falling producer prices in Nigeria, was in clear contrast to the situation of the Ivory Coast described earlier for about the same period.

The external trade policy of Nigeria thus offers the key to an understanding of the problems of its agricultural production and marketing, even for its commodities that are not traded internationally. The import policy directly affects the domestic prices and production of rice, maize, poultry, and vegetable oils and indirectly those of sorghum and millet. On the export side, the level of exchange rates determines the fortunes of such tradables as cocoa, rubber, groundnuts, and palm oil and indirectly the domestic cost structure of agricultural commodities that are not traded.

It is therefore clear that with such policy distortions in exchange-rate regime and fiscal structure, the issue of reform of domestic agricultural marketing can be only a secondary issue. Indeed, it has been established that in a general sense, Nigeria's internal food and agricultural marketing system is reasonably efficient and embodies minimal noticeably exploitative practices.[45] Farmers tend to receive a significant proportion--about 69 percent--of the retail price of their grains, and an analysis of the marketing channels revealed an open, competitive system. If anything, official market intervention has with respect to some crops, such as cotton, only succeeded in holding down producer prices by using its monopoly buying power. In others, and especially in the case of the Nigerian National Grains Board, the effect of official intervention has indeed been minimal, if not irrelevant. Apart from the lack of continuity and consistency in the food imports pricing policy of the government, the board has had neither the inclination nor the resources--financial, human, or infrastructural--to intervene in the grain market on any scale significant enough to make a difference either to the producers or the consumers.

Such considerations probably explain why, on the Nigerian scene, government intervention in agricultural development has been either of a nonpricing nature or mostly the subsidizing of inputs. Fertili-

[45] Henry M. Hays, Jr., The Marketing and Storage of Foodgrains in Northern Nigeria, Samaru Miscellaneous Paper 50, Institute of Agricultural Research, Samaru (Zaria, Nigeria: Ahmadu Bello University, 1975).

zer is heavily subsidized at nominal rates of about 85 percent and tractors at 50 percent. Improved seeds, pesticides, herbicides, and agricultural credit are also subsidized. Allowances must of course be made for the leakages and inefficient distribution that tend to somewhat reduce the real margins of such subsidies--reducing the fertilizer subsidy, for example, to about 45 percent. Input subsidies are nevertheless real and significant, if the farmer can break through the bottlenecks of access and supply. They also seem easier to operate than a system of output price supports.

Yet several problems have recently arisen that call into question the wisdom of almost exclusive reliance on input subsidies as a strategy of price support for domestic food production. The system is itself not free of bureaucratic abuse, corruption, and inefficiency; quite the contrary. By 1980, total government input subsidies had amounted to more than 500 million *naira*, half of which was for fertilizer alone. And yet there are unresolved technical problems about the application of fertilizer in mixed-crop farming practice and wide variability in soil conditions. The larger farmers--that is, the commercial farmers--tend to have better access to and derive greater benefit from the fertilizer distribution system. Only a very small proportion of farmers, estimated at about 5 percent, are also able to take advantage of the subsidized agricultural credit. Furthermore, it is not entirely correct to claim that all is well with the output-marketing system, precisely because of the evidence that competition is effective only within a given area but not among areas. Wide spreads, often in excess of objective transfer costs, were found. Other market and marketing inadequacies discovered were the erratic nature of supplies, inadequate dissemination of information, lack of specialization in marketing, and large seasonal variability in price in excess of storage costs. There also seems to be growing evidence that Nigerian farmers--indeed West African farmers generally--respond well to price incentives, but they respond even better when output prices are high compared to input prices.[46] Again, farmers tend to reject supposedly superior technology or modern production packages that do not offer a sufficiently high incremental return on their efforts, with suitable allowance for any inherent risks in their adoption.

It would seem therefore that both market reform and output price support must be part of any policy revision for Nigerian agricultural development, once the fundamental distortions in external trade and the exchange rate have been corrected or at least contained. This would be particularly true for foodgrains, which are likely to be more responsive to pricing policy than root crops would be, although because of intercropping--a maize-yam-cassava module, for example, or

[46] Roger Norton, "Pricing Policy Analyses for Nigerian Agriculture," unpublished report to the World Bank, Washington, D.C., September 1983; and Owaise Sadat and Francis van Gigch, "Lessons from the Field: Rural Development in West Africa," Finance and Development (March 1981).

a sorghum-millet-cowpea module--an increase in the output price of some grains may also increase the production of some tubers. Market reform, of course, involves more than product pricing. It necessarily extends to better market intelligence, systematic estimation of harvest prospects, encouragement of standard weights and measures, quality control and inspection, creation of physical marketing facilities in designated secondary and principal centers, development of rural roads, and establishment of a pricing moderation agency.

Nigeria, like Ethiopia, devotes an undue proportion of its public-sector resources to support of agricultural inputs and agricultural development projects in concentrated specialized areas, most of which are supported by external donor agencies--Funtua, Gusau, and Gombe, for example. Yet some 97 percent of the country's food production still comes from smallholders spread all over the agricultural landscape. Although there may be economies of scale to be realized in production of some crops, this is not invariably true and in fact may rarely be true. In smallholder agriculture, the maximization of returns on family labor is not necessarily contingent upon the best return on land, especially in a land-expansive resource environment.

One striking difference between Nigeria and the other two African countries considered so far, however, is the virtual absence of a farmers' lobby. In Ivory Coast, the countervailing producer pressure comes from the communion of interests between the planters and the bureaucracy. In post-1975 Ethiopia, such countervailing pressure is building up gradually from another direction, namely, the peasants' associations and rural cooperatives. Nigeria's political evolution and bureaucratic power structure seem, on the other hand, to have created a situation of social discontinuity between a loose and amorphous peasant majority and the ruling elite who have little genuine rural sensitivity or organizational connection.

The importance of social continuity and the nature of bureaucratic sensitivity to the problems of rural development may ultimately prove to be the key to the greater consistency and better performance of the Asian food economy, from China to the Philippines, and from Malaysia to Bangladesh. Case studies of some of the agricultural marketing arrangements and food policies in that region follow.

4. SOME ASIAN CASES

INDIA

The sustained development of the Indian food economy, under the stimulus of government policy intervention, had its roots in the fall of Burma and the Grow-More-Food-Campaign of 1943. Several acreages were diverted to the production of food from cotton and jute. Although still limited in extent, the existence of irrigation facilities in the northwest and southeast helped the little success achieved at that time. With the high growth rate of the population and the closing up of the available land, problems of food adequacy, distribution, and nutrition constituted an increasing policy challenge of serious proportion. The principal difference from colonial Africa was the Indian government's early awareness of the potential problem and its willingness at least to attempt to define a broad direction of policy. The Royal Commission on Agriculture of 1928 had already established an institutional framework for food policy, and soon after the Second World War, by January 1946, the government had issued a nearly definitive Statement of Agriculture and Food Policy for the country. Since then there has been a virtually uninterrupted flow of policy intervention by the government in the food sector.

The outstanding achievements of India in the production, distribution, and consumption of food, especially since the green revolution of the mid 1960s, have been well documented in a variety of statistical, descriptive, and analytical sources. As to market intervention, it is perhaps adequate to mention the works of Chopra and those of Kahlon and Tyagi.[47] The performance of wheat and rice was a particularly striking example of expansion of output, increase in productivity, and after 1975, elimination of imports. These successes were derived from a combination of technological improvement, the availability of stable farm labor, favorable output-input price ratios, and a comprehensive marketing program, all interacting positively with one another. The existence of a strong and efficient system of administered prices, backed by a network of market infra-

[47] R. N. Chopra, "The Changing Balance Between Private and Public Sector Trading in India's Food System," January 1984; see especially the data in annex 3 under "Vital Food Statistics"; A. S. Kahlon and D. T. Tyagi, Agricultural Price Policy in India (New Delhi: Allied, 1983). See also the more nearly definitive and more comprehensive volumes of reports of the National Commission on Agriculture.

structures, made it possible to turn the available technology packages--the green revolution--into rising producer income and growing marketable food surplus, in spite of the occasional occurrence of drought.

The Food Corporation of India was established in 1964 and the Agricultural Prices Commission in 1965. There are also specialized agencies such as the Cotton Corporation, the National Textile Corporation, and the Jute Corporation. At the state level, especially with respect to food crops, there are state civil supplies departments and cooperative marketing federations. To sustain the food distribution program all over the country, there are also about 300,000 fair price shops. The main food crops in the market-intervention program are wheat, rice, gram, and *jowar*. Other crops include cotton, jute, sugarcane, and tobacco, but foodgrains constitute the core of the official marketing system.

It is important for the redesign of African food policy to describe the procedure of Indian food pricing policy as it has evolved during the past two decades.[48] Based on a concept of fair average quality varieties for a given crop, the farm-level support or floor price is announced at the beginning of the sowing season and its equivalent procurement price at the beginning of harvest. Prices are fixed for the basic variety, with recommendations for the determination of the prices of other varieties or grades. Support prices are generally the lowest, followed by procurement prices, issue prices (at the fair price shops), and finally market prices. A buffer stock program for foodgrains is maintained by the Food Corporation of India to smooth out spatial and interseasonal variations in supply.

The Agricultural Prices Commission itself does not physically or directly handle the marketed crops. Its task consists principally of statistical estimation, policy analysis, performance evaluation, and policy advice. By its enabling statute, however, it was specifically enjoined to take into account the need to provide incentives to the producers to adopt improved technology and to maximize agricultural production. This clearly indicates that its recommended support prices are not to be designed simply to prevent distress selling as a consequence of inadequate demand. The various prices for the principal field crops are fixed annually. And a conference of all state ministers of agriculture, meeting under the corresponding union minister, considers the Commission's recommendations every year before the final decisions are made and announced by the union government. In this way, the work and recommendations of the Commission affect many areas of the country's general development

[48] See also J. S. Sarma, "Principles and Procedures of Determination of Administered Prices of Foodgrains in India," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

process: agricultural technology, produce quality, transportation, the buffer stock of grains, spatial distribution, food processing and agribusiness, fiscal policy, external trade, nutrition standards, the food-for-work program, and emergency reliefs. The systematic and comprehensive nature of its program has become more evident since the late 1960s as it has progressively acquired analytical sophistication.

It must be noted, however, that central, comprehensive, and important as the Agricultural Prices Commission is to the country's food-marketing system, the Indian food economy is still basically driven by private initiatives. True, the government retains monopoly control in the import of foodgrains, and the domestic wholesale trade in wheat was taken over fully by the public sector in 1973. But the farmers remain free to sell their produce in the open market at prices higher than the procurement (or support) prices, the few exceptions to that freedom being their crops of jute and sugarcane.

Clearly, the Commission requires considerable information, both statistical and nonstatistical, on a continuing basis to make objective and sound recommendations from time to time. Farm-level production costs, supply elasticities, farm incomes, other farm-management data, regional variations, and demand functions are critical to its price estimation procedure. It is doubtful whether any African country has a statistical and economic intelligence system of such magnitude. Furthermore, the analytical work involved is highly demanding of both skilled manpower and budgetary resources. The Food Corporation of India alone handles transactions of some 30 to 40 billion rupees a year, or about 3 to 3.5 billion U.S. dollars. In merely distributing the foodgrains and maintaining a sizable buffer stock, the government itself incurs an expenditure of about 5 to 6 billion rupees a year. Nor is the system entirely flawless; remember that it has evolved by a process of trial and error during the past two decades: the operation of mutually exclusive food zones created problems that were modified in 1977; even the existing uniformity of public distribution prices among states remains questionable for a smooth adjustment between surplus and deficit areas; in spite of two decades of efforts, production technologies and land distribution still remain skewed in Indian agriculture; much variability in production among crops and regions persists; and there are still sizable pockets of socioeconomic groups who are sometimes unable to command the incomes with which to buy the foodgrains that are known to be available.

Sub-Saharan Africa can nevertheless learn much from the rich experience of Indian food policy. Beyond the specific features to which attention has been drawn, some general points should be of further interest to African policymakers. First, a good price policy complemented by an orderly marketing arrangement can help trigger the adoption of new technologies as they become available, in the way in which the activities of the Indian Agricultural Prices Commission coincided with the impact of the green revolution, especially in wheat and rice.

Second, well-administered prices can help to dampen the effects on both producers and consumers of the variability of output. In the course of time consumer subsidies have kept public distribution prices below the open market prices. One difficulty for Sub-Saharan African countries at this stage of their agricultural development is that of gradually redistributing the explicit and implicit food subsidies away from the urban consumers to the farm producers in order to stimulate the expansion of marketable surplus. The problem arises because any support-price scheme requires the operation of a buffer stock, which in turn requires an outlet for ultimate distribution to consumers. In the end, determining farm-level support prices may necessarily involve the determination of both procurement and issue prices, no matter how unambitious the size of the distribution program.

Third, agricultural output and agricultural prices are pacesetters in the development of an economy. Through their effects on the cost of living, the level of wages, the structure of industrial costs, the dynamics of spatial interaction, the balance of payments, and the stability of social-political arrangements, they help determine the health of the economy and the general direction of social change. But to translate that appreciation to reality, a strong agricultural lobby is needed. The political development of modern India as a nation has been intimately bound up with its rural grassroots and local government organizations--the system of *zilla parishads* and *panchayat raj*. Historically, the peasants have formed the backbone of the nationalist movement and have remained, through their community development blocks, the staying power of the major political parties. The bureaucracy, the professions, and the general leaders have long maintained strong interests in traditional values and identified closely with the rural communities. The food problem has long been recognized as a common national problem, to which everyone's energies must be bent.

INDONESIA

There are strong administrative, budgetary, and logistical reasons why most Sub-Saharan African countries cannot immediately attempt the kind of comprehensive food pricing and marketing arrangements just described for India. And they may indeed not have to do so. Usually only a few key foodgrain crops--maize, rice, or sorghum--are critical to the food-deficit problem of several countries in the region. Wheat is or should be only marginally important, except in Ethiopia.

Indonesia offers a good example of a market-intervention and pricing program built around a narrow but crucial food crop--in this case rice, supplemented with maize. Also, in spite of the relative importance of plantations on the outer islands, the country's production organization is still dominated by peasant smallholders, espe-

cially in Java. Ecologically, its range of agricultural products compares well with those of tropical Africa: rice, maize, cassava, sweet potatoes, soybeans, and groundnuts. Irrigation dominates Indonesian agriculture, but there is still a reliance in the outer islands on rainfed cultivation. Their *swidden* farming practice[49] is similar to the widespread land-expansive, intercropping, and land-fallow system of Sub-Saharan Africa. Indonesia has even been subjected to a much more protracted and intensive colonial rule than several African countries. Like some African countries such as Nigeria, it also has a large population and produces and exports petroleum on a significant scale.

For most of the 1950s and 1960s, Indonesia faced problems of domestic food deficits and food imports similar to those facing many Sub-Saharan African countries today. In spite of the gains recorded through the opening up of new land in the outer islands, bringing marginal increases in rice production, more and more rice had to be imported. There was a rapidly increasing per capita consumption of rice throughout most of the 1960s and 1970s. Already by 1962, imports of rice amounted to more than a million tons--and that for a major rice-producing country. Efforts to boost domestic production by subsidizing inputs under the Padi Central Program of 1959-62 met with only limited success, yet the growing balance-of-payments constraint was becoming ever more serious, and the food gap clearly could not be covered much longer by imports of rice. The resultant economic, social, and political crises that eventually brought Soeharto to replace Sukarno as president were rooted in the weak performance of the country's food economy during the preceding decade.[50]

A more aggressive policy for national food sufficiency was adopted in 1969 under the first five-year plan (*Repelita* I), with the objective of achieving an increase of 50 percent in the domestic output of rice. The principal strategies used included the Mass Guidance (BIMAS) campaign for propagating the green revolution rice varieties, which had just then become available, some expected investments in irrigation, and some input subsidies for fertilizer and credit. Output grew by an impressive average of 4.6 percent a year, partly from expansion of the acreage cultivated but mostly from increased productivity in response to the acceptance of high-yielding

[49] *Swidden* is the practice of burning off vegetation to create a temporary agricultural plot.

[50] C. Peter Timmer, "The Formation of Indonesian Rice Policy: A Historical Perspective," in Agriculture and Rural Development in Indonesia, ed. Gary E. Hansen (Boulder, Colo.: Westview Press, 1981).

varieties and the application of fertilizer.[51] But the really critical element in the story, as Timmer emphasizes, was the government's decision to pay farmers an incentive price from 1968--that is, a year *before* the launching of *Repelita* I--having learned the hard lesson in 1967 that investment policies, input subsidies, and social mobilization do not constitute an adequate strategy. The price support formula was based, as Timmer explains, on the farmer's formula of *rumus tani*, namely, that the prices to the farmer for milled rice and for urea ought to be about the same.[52]

The price-incentive scheme worked in complement with other measures. But the difficulties encountered under *Repelita* II from the mid 1970s showed that an efficient marketing system is an essential, indeed inevitable, adjunct to a pricing policy. The growth of rice output leveled off, not only because of technical problems from greater infestation of the high-yielding varieties by pests and the administrative problems with BIMAS--especially laxity in credit collection--but also because the Village Cooperative Business Units (BUUDS) lacked the logistics to support their marketing responsibilities. The result of disincentives to producers in the face of costlier and more risk-intensive high-yielding varieties was a decline in the expansion of domestic rice production and a strengthened resurgence of food imports.[53]

BULOG, the national grain stock authority, however, quickly learned to reform its marketing operations. It sought effective control of ceiling and floor prices, and it put in place a workable, countrywide reserve stock policy. Its operating agencies in the regions (DOLOGS, or regional food depots) organized task forces to buy directly from the farmers and to help maintain the floor price of stalk paddy and the ceiling price of fertilizer. It went into the serious business of data collection, market intelligence, crop forecasting, achieving food demand-supply balances linked both to external trade and internal variation in output--by region, by season, and by product type--estimating elasticities and particularly shifts in producer response, product-marketing financing arrangements, and creating linkages between the rice subsector and the rest of the food and national economy. To accelerate its intelligence gathering and operations monitoring, it also changed several personnel in some key rice-producing provinces.

The reform measures worked. By the late 1970s, BULOG had become not only the dominant but also the most efficient food-policy

[51] Achmad T. Birowo and Gary E. Hansen, "Agricultural and Rural Development: An Overview," in Agriculture and Rural Development in Indonesia, ed. Gary E. Hansen (Boulder, Colo.: Westview Press, 1981).

[52] Timmer, "Formation of Indonesian Rice Policy."

[53] Birowo and Hansen, "Agricultural and Rural Development."

institution in the country. Both production and consumption of rice rose. Per capita incomes were higher, new investment flowed in, and intersectoral linkages in the economy became stronger. Its success was greatest in rice. Concerning other food commodities, not only were there increases in their market prices, there was also a decline in their consumption. And even with the rice success story, considerable variation still existed among individual levels of consumption.

The post-1975 successes of BULOG have been the subject of critical evaluation and praise by many writers. Some insiders--Leon Mears, for example--have tried to document the ingredients of the story from the standpoint of economic analysis and development policy.[54] Others, such as Ammar Siamwalla, are outsiders who have tried to look closely at segments of BULOG's operation or see the whole rice-marketing system in relation to experiences elsewhere.[55] The broad consensus is that it has been a remarkably efficient organization and that it has erected a sophisticated market intelligence system that allows the Indonesian government to pursue a price target rather than simply a quantity target in its food policy. As Siamwalla observed, the overriding consideration has become the maintenance of floor and ceiling prices, and since 1975 BULOG has unfailingly achieved both.

African policymakers, however, learning from the Indonesian experience, may also wish to look at other implications of that experiment. It started with the building of a solid and efficient marketing and pricing institution on one principal crop, rice. It has only recently reached the stage at which it was realized, in close collaboration with other governmental institutions, such as BAPPENAS, the national planning agency, and BMPT, the agency for food and opening up of land, that a satisfactory national agricultural development process cannot be confined to one crop, no matter how strategic, but must extend to other crops for both domestic markets and export markets. Since *Repelita* III (1979-84), the policy objective of national self-sufficiency in rice is being replaced with the wider objective of general self-sufficiency in food and better regional food balance in seeking greater agricultural development outside Java. Thus, long-term national concern is shifting from a goal of food security as such to one of sustained rising productivity in the agriculture sector as a whole.

Finally, Indonesia may have demonstrated that the Dutch disease is not an inevitable and infectious curse. Unlike Nigeria, its

[54] Leon A. Mears, The New Rice Economy of Indonesia (Yogyakarta: Gadjah Mada University Press, 1981).

[55] Ammar Siamwalla, "Public Stock Management and Its Implications for Prices and Supply," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

booming exports of petroleum did not destroy its agriculture. It too is a member of the Organization of Petroleum Exporting Countries. The successes of BULOG also happen to have coincided with the glorious days of large foreign exchange receipts and large government revenue from the petroleum industry. Although initially those receipts helped Indonesia to increase its imports of rice to permit lower domestic consumer prices, the country soon changed its food strategy. It protected its domestic agriculture against cheaper imports, but it then moved quickly to use its budget surplus, both to support domestic producer prices and to diversify its industrial base with industries that can be linked with food and agriculture. By the time the petroleum honeymoon was substantially over, Indonesia had succeeded in using a large part of its proceeds--in spite of the occasional scandals and corruption that surrounded PERTAMINA, the state oil corporation--to strengthen its domestic food production.

THAILAND

Like India and Indonesia, Thailand has been able to develop a viable food and agricultural economy. But unlike them, it has been able to do so on the basis of an open external food sector through its general trade regime. It is one of the few countries in the world whose major staple food product constitutes both the bulk of its consumption and its primary foreign exchange earnings, all based on a strong and natural comparative cost advantage. The staple crop is rice, and Thailand's preeminence in competitive production of it has a long history rooted in the geography and social institutions of the area.[56] It is a classic example of Hla Myint's vent-for-surplus role of international trade and the beneficial effects of an outward-looking strategy. Thailand's general development process, so far as growth of income and employment and balance of payments are concerned, has evolved around the export of marketable surplus rice. Although the country produces only about 5 percent of the world's total output, its share of world exports of rice is about 10 percent. In absolute terms, only the United States and China have normally exported more rice than Thailand.

Trade policy has long been central to Thailand's rice economy, especially since the Second World War.[57] Internal food security has been the pivotal objective of social policy, with exports of rice regarded as the residual sector. Even when the ban on exports of rice was lifted under the Bowing Treaty, export controls were always applied to avert any serious shortages for domestic consumption.

[56] Ammar Siamwalla, "A History of Rice Policies in Thailand," Food Research Institute Studies 14 (No. 3, 1975).

[57] T. H. Silcock, The Economic Development of Thai Agriculture (Ithaca: Cornell University Press, 1970).

This emphasis on self-sufficiency in rice also has its internal parallel. On-farm requirements of rice for consumption by the producers have always had the highest priority in household economic decisionmaking, whether in marketing the surplus or in allocating land, labor, and capital between rice and other crops. This adjustment process has implications for the magnitude of the supply elasticity of rice and the reaction of farmers to the structure of price and other incentives.[58] The diversification into other crops in reaction to the heavy export tax on and low domestic price of rice, for example, was slowed, both by the geographical constraints of some of the important agricultural areas--the flooded river basins being unsuitable for crops other than rice--and by the long-cherished commitment of farm households to the securing of adequate rice for their own consumption.[59]

One of the interesting features of the growth of Thailand's rice economy, from the standpoint of Sub-Saharan Africa, was the way in which labor extended the land base by bringing under cultivation larger and larger amounts of potential cropland and by relying substantially on the natural process of annual flooding and rainfed production methods. Although irrigation had been practiced in the northern parts of the country for a long time, it did not become a significant feature of Thai agricultural technology until the 1970s. Thailand has nevertheless consistently been able to produce a growing surplus of food and fiber beyond its domestic requirements.[60]

Producer price support has not been a significant factor in Thailand's rice development. Indeed, the experiment of 1969-71 aimed at both increasing farm income and stabilizing market prices did not succeed. The explanation that has always been offered is the substantial proportion--about 40 percent--of total rice output that is retained by farm households for their own consumption, a phenomenon that has kept the domestic market stable. The rice farmers thus tend to respond positively to the level of the price of rice but negatively to its variation.

[58] Trairatvorakul discusses various measures of the Thai rice-supply response to price changes for various periods since 1940 and the effects of the structure of incentives on crop diversification from rice to upland food crops (Prasarn Trairatvorakul, "Food Demand and the Structure of Thai Food System" [Ph.D. dissertation, Harvard University, 1981]).

[59] Trent Bertrand, Thailand: Case Study of Agricultural Input and Output Pricing, Staff Working Paper 385 (Washington, D.C.: World Bank, 1980).

[60] Kenneth J. Nicol, Somnuk Sriplung, and Earl O. Heady, eds., Agricultural Development Planning in Thailand (Ames: Iowa State University Press, 1982).

Within the last decade, however, renewed efforts have been made to play the market through government pricing intervention. Since 1974, an even larger share of the proceeds from the rice premium, an export tax, have been diverted to the financing of the agricultural development process and to increasing the incomes of farmers, rather than simply being used to moderate the internal cost of living. As lateral expansion on favorable land was reaching its natural limits, policy attention was shifting to the imperatives of increasing productivity through higher yields and faster diversification. Little or no charges were being made to farmers for the expanding irrigation facilities for second cropping. Increasing support was given to the cultivation of sugarcane, high protection against imports of sugar, state monopoly control of the sugar import trade by the Thai Sugar Corporation, support and procurement prices for domestic sugarcane, export subsidies, and production control. It would be true to say, however, that even after 1974, trade policies remained the primary instrument for influencing the domestic price of rice. On the export sector, exports from Thailand are still sufficient for the country not to play the passive role of a simple price taker. The 1974 attempt at floor-support price for the rice producers, however, was not backed up by a sufficiently large marketing program to affect the total marketed surplus, so domestic prices remained substantially linked to international prices and to the export premium. But even the sugarcane price support and production control program has not been a signal success.

It has been observed by Bertrand and others that in retrospect, the market-intervention experiments of Thailand have been more successful in decreasing rice prices than in increasing them, with consequent asymmetrical effects on the welfare of both the consumers and the producers.[61] The urban consumers have been cushioned when prices were high, while the farmers have remained unprotected when prices were low.

A substantial part of the rice trade continues to be in private hands, even including the execution of government-to-government rice agreements. The function of the government ministries, the parastatals, and the banking system in the production and marketing of agricultural commodities is mainly supervisory. The Rice Bureau was established after the Second World War, and the Rice Office was in operation between 1946 and 1954. The Public Warehouse Organization still functions, but it handles only inexpensive rice sold to public servants and the urban poor. Apart from the Sugar Corporation, there is in operation an official Committee for Policy Counselling and for the Maintenance of Price Levels of Sugarcane and Sugar. From its very title, it could not have been a particularly strong organization for market intervention. Clearly, there is no parallel in Thailand of Indonesia's BIMAS or the Philippines' MASAGANA 99.

[61] Bertrand, Thailand: Case Study.

It might be asked, if the market mechanism has worked so well in the rural sector of Thailand and there is little evidence of market failure hitherto in either the production or distribution domains of its agricultural sector, what other lessons can African policymakers learn beyond not to become involved in official market intervention? The first answer is that there has indeed been a fairly consistent food policy in Thailand that has involved some degree of market intervention. The principal distinction is that intervention takes the form of external trade measures and the adjustment of taxes on exports of rice. But in asking the question, the peculiar position occupied by rice in the Thai economy must be constantly borne in mind. It is a commodity in which Thailand has a clear comparative cost advantage as a trading nation. The same commodity also dominates its production pattern and constitutes the bulk of its consumption of staples. There are few such food products in the Sub-Saharan African countries that are simultaneously produced widely, significantly traded abroad, widely traded at home, extensively consumed at home, and little threatened by competing imports.

Second, in spite of its long comparative advantage in rice production and specialization, Thailand seems now to be entering a phase in its development process in which renewed attention may have to be given to producer price incentives. The rapid growth in recent years of nonagricultural labor incomes in relation to agricultural incomes is creating a worrisome income disparity and strong rural-to-urban migration at a rate faster than the ability of the urban sector to absorb the labor. The need for such income adjustments may become more evident as the rural economy diversifies into areas with much less comparative advantage in response to shifts in demand--in response to rising incomes--to crops such as maize, cassava, vegetables, and oilseed and to livestock and fisheries. Already, Thailand's share of world rice exports has declined from about 20 percent to about 10 percent within the past two decades.

Third, the thrust of the country's food policy has hitherto been toward the short-run social need to maintain the price of rice at levels politically acceptable in urban areas and to derive some revenue through the rice premium levy. Beyond the long-run adjustment problems of product diversification mentioned earlier, there are countervailing pressure groups building up to modify the old established rice trading patterns dominated by Chinese rice merchants and millers, European trading companies, financial operators based in Malaysia and the Straits Settlements, and the entrenched system of bureaucratic patronage. Resistance from the rice and sugarcane producers to the large shifts in production, prices, and incomes is also likely to grow.

Finally, unlike Sub-Saharan Africa, Thailand has not had in its recent history any serious or growing food-deficit problem that has required urgent policy attention.

5. TOWARD POLICY RESTRUCTURING

DESIGNING A VIABLE PRICE-INCENTIVE SYSTEM

From the various case studies presented here, the influence of producer-pricing incentives in the success or failure of a country's food development strategy can be appreciated. It is clear, however, that such incentives cannot by themselves bring forth large or sustained expansion in food production, but their absence can explain a significant part of the failure of a country's general food policy. Long-run development of the food economy cannot endure without substantial application of new technology and modern agricultural inputs. An imaginative and effective system of administered producer prices for food can contribute significantly to the arrest of a deteriorating food gap in the short run. It can also help to reverse such a trend in the medium run.

True, in some typical Asian settings, input price support has been found to be more socially beneficial than output price support.[62] But even there, the private benefits to the food producers were decidedly greater under the price-support program than under the input-subsidy program. And they are likely to be greater still in the conditions that prevail in Sub-Saharan Africa, where the land supply is not as tight as in Asia and where there exists a much lower degree of internal self-sufficiency in modern agricultural inputs such as fertilizer. The question nevertheless arises, how do African policymakers proceed to put in place a viable system of price incentives to food producers?

The first step is open and clear recognition that certain complementary policy measures and investment expenditures must accompany, if they do not precede, the raising of effective producer prices. These are particularly important in the realm of agricultural marketing: construction of storage facilities, development of a rural transportation network, improvements in the system of market intelligence, and overhauling of the mechanism for administrative intervention. Beyond physical infrastructure, a worrisome dimension of these complementary measures for African policymakers is the general data base for designing effective producer pricing programs.

[62] Raisuddin Ahmed, Foodgrain Supply, Distribution, and Consumption Policies within a Dual Pricing Mechanism: A Case Study of Bangladesh, Research Report 8 (Washington, D.C.: International Food Policy Research Institute, 1979).

Much statistical information is required both for estimating minimum and maximum prices and for exploring the probable consequences of alternative pricing arrangements. Yet little is known at present about the way traditional rural markets function in most African countries and far less about what prices are received at the farm gate by the producers for what marketable food surplus, specified by product, season, and area. Efforts toward the acquisition of such information on a continuing basis are therefore a necessary prerequisite for any workable price policy intervention in the African food economies.

Second, it must be recognized that the main objective of pricing intervention itself is the raising of the average income levels of farm households, both in relation to the production costs that they incur and to the earnings received from comparable efforts outside food farming. What is thus important is not the product price itself but rather the effect of that price on the marginal revenue product of the farm household and especially the return on the opportunity cost of its labor input in nonfood production. With a given level of technology, such returns depend on the relation of output to input price, principally labor, particularly under the conditions of African smallholder rainfed production, where the farmers are price takers in both output and input markets. The incomes of African rural households are therefore substantially determined, both absolutely and relatively, by changes in agricultural prices.[63] But under rainfed conditions, price risks are themselves strongly influenced by yield risks, so stabilizing either prices alone or yields alone may not yield results that help to stabilize, much less increase, the incomes of food producers.[64] It follows, therefore, that the producer pricing policy must be conceived as a minimum support price, set each year in such a way as to contain or counter variations in yield and to ensure a stable, if not a rising, income for farm households.

Manipulation of product prices for the achievement of income stabilization in one sector--no matter how great its importance in the development process--has implications for the rest of the economy and therefore for its own eventual success, and an integrated approach to its design is thus called for. The third step, then, is for the policymakers to take explicitly into account all potential interactions between administered food producer prices and such other

---

63 Inderjit Singh, Lyn Squire, and James Kirchner, Agricultural Pricing and Marketing Policies in an African Context: A Framework for Analysis, Staff Working Paper 743 (Washington, D.C.: World Bank, 1985).

64 Peter B. R. Hazell, "Risk and Uncertainty in Domestic Production and Prices and Their Implication for Pricing Policies," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

vital policy areas as the budget, the distribution of income, nonagricultural development, and the balance of payments. This involves, as Singh, Squire, and Kirchner demonstrated, adopting an integrated analytical framework for testing the quantitative effects of alternative price-support programs.[65] This again returns to the necessity for having reliable data on the interface between existing ex-farm prices, supply response, market structure, bottlenecks in distribution, the food-demand profile, and public financing arrangements.

In such an integrated approach, everything will obviously depend on everything else, and the policymakers may find themselves moving in an analytical circle. A reasonable point of departure, in the effort to avoid such a situation, is a look at the external food balance, especially since most economies of Sub-Saharan Africa are externally open as well as dependent. The fourth step is therefore to set the objective domestic prices of competing domestically produced food products at their international equivalent levels or at border prices, using derived shadow rates of foreign exchange. This would of course be only a first approximation, because even at its most elegant, such an approach is likely to beg the real question of the internal terms of trade between food and other products and may even lead food price policy in the direction of price reduction for the urban consumers rather than price enhancement for the rural producers. In Dutch disease economies, such as Nigeria for example, the high cost of labor brought about by the petroleum boom has simply made the food sector unable to compete at international prices. And internally, the cost of labor per unit of cultivated land has also increased much faster since the 1970s than the growth rate of urban real wages. The cost-price squeeze facing domestic food producers is therefore unlikely to be eased by a simple application of the static economic efficiency criterion of international competitiveness. And production efficiency at home is not, in any event, the only stated goal of national food policy. Self-sufficiency or self-reliance, balanced growth, equitable distribution of income, and social values are often as important in the pursuit of food pricing strategies although they may be at variance with the full rigor of free trade. There is also the fact that world trade in food commodities has itself structurally departed from the free competitive model during the past two decades.

For the fifth step in the evolution of a viable food price-incentive policy, African decisionmakers might thus wish to reduce their reliance on the simple international market signals and set

[65] Singh, Squire, and Kirchner, Agricultural Pricing and Marketing Policies.

their own domestic prices at levels higher than those at the border.[66] In circumstances in which their previous trade regimes and industrialization policies have discriminated against and adversely distorted the domestic food economy, they may even go further by shifting some resources from exportables to the production of nontraded food commodities, such as tubers, cowpeas, and plantains. The issue is not one of choosing between optimism and pessimism in external trade; it is rather one of simple recognition of an important recent lesson from experience that international food prices no longer fairly reflect supernational food-production functions.

In raising domestic prices above their international border equivalents, however, there are limits as to how far the national policymakers can go. The limits are ensured by the tolerance limits of urban consumers and the effects of food prices on minimum real industrial wages. This is the sixth stage in the design process of a food price incentive system. A comprehensive pricing policy must not only set the minimum levels at which the commodities would be bought ex farm from the producers, it must at the same time also set the levels at which they would be released to the market--levels that would presumably influence the final prices at which consumers could purchase them. This is why successful administered prices are set in a way that drives a wedge between consumer prices and producer (or import) prices. The size of the wedge itself is often determined both by the balance of social pressures--farm lobbies versus consumer groups, for example--and by the fiscal costs of running the system.[67]

One way of obviating the long computational procedure of determining shadow exchange rates and international border prices is to estimate the gap between the demand for food and the supply for a given country and simply establish the price level that would bring the two streams together and eliminate the gap. Such an approach might be useful or valid if the sole objective of national policy were simply to eliminate imports of food, and if the assumption that the resultant higher prices would induce appropriate levels of higher domestic supply response were realistic. But even then, the constraint of food price levels politically acceptable to urban consumers might remain unaddressed, and the policymakers would be back to the need to establish a fiscally viable wedge between producer prices and consumer prices.

[66] Alberto Valdés and Ammar Siamwalla, "Foreign Trade Regime, Exchange Rate Policy, and the Structure of Incentives for Agriculture: Issues and Policies," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

[67] Per Pinstrup-Andersen, "Food Subsidies: The Concern to Provide Consumer Welfare while Assuring Producer Incentives," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

The search for such a wedge leads to the seventh step in the design of an appropriate producer-pricing system for food, namely ex-farm studies of production costs. This approach has the additional merit that it addresses directly the problem of the cost-price squeeze being felt by African farm households. In the absence of extensive farm management data, little is known about the full costs of African peasant farmers. The little that is known is often in the form of average cost levels under conditions of mixed-crop production, whereas the more relevant measure is the marginal cost of producing the particular food commodity whose producer incentive price the policymaker is attempting to establish. Average costs must be further processed to allow for cross-supply elasticities that are embedded in any setting of multiple crops. Once the base data have been established for absolute cost levels, subsequent calculations may be concentrated on a concept of cost index to reflect a variety of price changes. The experience of the Indian Agricultural Prices Commission has been particularly enriching in the derivation of appropriate price levels for various food commodities on the basis of the relevant production costs.[68] In updating or establishing the currency of its cost estimates--and hence its recommended support and procurement prices--the Commission often also resorts to shifts in the prices of agricultural inputs as proxy for trends in production costs.

But no matter how carefully established, the production cost of a given food commodity cannot by itself form the only basis for recommending the level of administered prices for it. It can only provide a benchmark. This leads to the eighth step, namely, evaluation of the relative prices of various products. Within a given set of resources, farmers may within the same technological domain switch production from one commodity to another according to the relative attractiveness of their prices, and hence their profitability. There may also be positive side effects of expanding the production of one commodity in that an increase in the production of another is thereby induced. Yet in spite of these interproduct price relativities--indeed precisely because of them--policymakers may rightly concentrate their limited analytical and managerial resources to the setting of prices on only a few core commodities. In most economies of Sub-Saharan Africa, there are likely to be two or three foodgrains whose combined weight looms large in domestic food production and also possibly in the domestic consumption pattern. If the producer prices of such commodities are appropriately set and their various interproduct price relations are taken into account, it should not be necessary to dissipate computational and administrative energies across the whole spectrum of food and agricultural products. Variations in quality can also be kept to a minimum by concentrating on the dominant grade.

The ninth step is to test the budgetary implications of each set of alternative producer support prices. In an essentially agrarian

[68] J. S. Sarma, "Principles and Procedures."

economy with a narrow fiscal base yet one that is dominated by a large number of peasant farmers, both the budgeting and the cash-flow financing of a food-producer subsidy program can be burdensome. In addition to such ex-farm subsidies, market intervention involves potentially high costs in the handling, storage, transportation, and distribution of products, as amply demonstrated both by the operations of the Food Corporation of India and by the activities of Indonesia's BULOG. It is also important for policymakers to bear in mind that it is the net subsidies received that are relevant from the producers' perspective in the effort to persuade them to expand production. Subsidies from price supports must therefore not be wiped out by a variety of direct and indirect taxes on rural incomes and wealth. It also means that input subsidies, where they exist, should be taken into account as complementary in the setting of the level of output price support.

One particular dimension of the fiscal burden that must engage the attention of producer price administrators is the necessity for maintaining a system of panterritorial pricing (same pricing throughout the country irrespective of transport costs) for a given commodity.[69] The size of the burden on the government budget would depend partly on the gap between the new procurement prices and the prevailing average market prices, partly on the degree of commodity marketing being handled by private traders in relation to that handled by the intervening parastatals. That the high costs of transport incurred by governments are not reflected in ex-farm prices must also be recognized. Given the constraining budgetary resource that most Sub-Saharan African countries face, it would seem desirable in the process of pursuing panterritorial producer price supports to avoid a monopoly in the public marketing of food commodities and to leave a fair margin between the official procurement price and the average market price.

The tenth and final step is the exercise of informed judgment on the parity nature of the producer price level being considered. There are, of course, many dimensions to the parity issue: the intertemporal dimension, which has to do with the historical purchasing power of the commodity; the intercommodity dimension as among various food and agricultural products; the intersectoral dimension, which is the relation of the price of a commodity to the prices of nonagricultural goods; and the input-output dimension, which involves a comparison of the prices paid by farmers with the prices they are to receive. But perhaps the most important consideration of judgment is that of balancing the need for strong producer price incentives with the social and political risk of resistance from urban consumers. Such a game involves not only the size of the producer price

69 Raisuddin Ahmed, "Determination of Domestic Procurement and Issue Prices and Implications of Intervention in Foodgrain Marketing," paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

subsidy, but also the expected degree of positive supply response and the time interval within which the expanded output is to come on stream. Policymakers must therefore invest in a better understanding of the supply elasticities in their national food economies. Until such articulate knowledge has been obtained, it is probably safer for economic analysts to be cautious in their recommended programs of market intervention through price manipulation, to experiment gradually, and to build progressively on the lessons of their own experience.

THE POLITICAL ECONOMY OF AFRICAN FOOD POLICY

Although the policy importance of raising and sustaining producer prices as a vital step in arresting the deteriorating food-gap problems in Sub-Saharan Africa has been emphasized in this paper, it must be reiterated that the macroeconomic policy environment of a country is equally important. A generous pricing program would be vitiated by a distorted foreign-exchange regime, a rural-biased regressive tax structure, an undisciplined monetary policy, and a passive policy toward investment in productivity-raising agricultural technology. As the discussion of the taxonomy of African food economies shows, the nature of production organization and the institutional setting for the farming system can account for the success or failure of a country's food and agriculture development program.

Within the domain of price policy, the general need for African countries to raise their food prices to levels higher than their current international border equivalents, to protect domestic industrialization less and protect domestic food production more, and to float their exchange rates downward in a bid to correct the long-standing trading discrimination against domestic agriculture have all been indicated. Toward the achievement of rural-urban balance, a significant reduction in--if not an elimination of--the built-in subsidies to urban food consumers, especially on imported food commodities, both competitive and noncompetitive, also seems necessary. Policy emphasis in the African food economy should shift from the urban consumer to the rural producer. Within the domain of production itself, there should also be a shift away from input subsidies to an output price-support program, to be carried out through a process of budgetary reallocation.

Such fundamental shifts in policy cannot be effected without consideration of their implications for their broader social and economic relations in society. There are bound to be political and economic ripples that the policymakers should anticipate and address.

The first is the latent conflict of interest between socioeconomic groups within the domestic policy. Most African governments, long having derived their power bases from the petty urban elite,

might be unwilling or unable to undertake the shifts in policy necessary for revamping the food economy. It is not that those governments have never intervened in their countries' agricultural markets; it is that such interventions have hitherto been substantially negative and counterproductive for farmers.[70] They have lowered the prices received by farmers for their products, created serious distortions in production, reduced competition, promoted inefficiency, and pursued internally inconsistent food policy objectives. They have been able to placate or even harness the support of the rural producers, partly because the latter are not well organized as a distinct and functional political pressure group that is conscious of an overriding common economic interest and partly because of the illusion that input subsidies are an adequate basis for spreading the benefits of green-revolution agriculture.

The second ripple will come from the necessity to transform the machinery of governance in the agricultural sector from a project-based organization to a price-based policy institution. Projects provide an amiable meeting ground for the political groups and bureaucracies of Sub-Saharan African countries, and for a wide range of foreign bilateral donor agencies and multilateral financing and development institutions as well. Projects are simpler to conceive and implement; they concentrate power; they provide bureaucratic leverage to decide who gets what; they are more easily identified; and they yield clear political dividends. Price administration not only lacks glamor, it is more difficult to organize and spatially more diffused. Few bureaucracies anywhere would easily give up their accumulated power and their access to resources. A process of political education based on carefully compiled empirical evidence is therefore necessary to show that the present project-based machinery distorts the pattern of resource use and diminishes the prospect of overcoming the food-deficit problems of a region.

Third, there is the question of the organization of production within the agricultural sector itself, especially the contrasting experiences of countries with unimodal systems--largely small-scale peasantry--and those with bimodal systems--an admixture of large-scale plantations, sometimes foreign-owned, and commercial farms. Most of the success stories of food and agricultural development in the taxonomic perspective of the region offered here tend to come from countries with bimodal organizational structures. African policymakers may already be misreading the implications of that observation, in their new enthusiasm to introduce large-scale commercial agriculture and to make generous offers to foreign investors to come help develop the land. For one thing, bimodalism does not necessarily explain the success stories, for most of the countries concerned had simultaneously also pursued open and flexible exchange-rate regimes. Again in most of the unimodal cases, govern-

[70] Robert H. Bates, "Governments and Agricultural Markets in Africa," in The Role of Markets in the World Economy, ed. D. Gale Johnson and G. Edward Schuh (Boulder, Colo.: Westview Press, 1983).

ments had also intervened negatively in the markets to such an extent as to appropriate the rural surpluses for their own unproductive expenditures. Bimodalism in the region has also sometimes involved large-scale government-sponsored farms, which are not necessarily synonymous with commercial farming. And while large-scale commercial farming has sometimes helped the development of cash crops for exports, it has not systematically helped to address the problem of shortages in the domestic supplies of nontraded food commodities. It is, in any event, not as if such commercialization and bimodalism are not creating new problems of structural dislocation and latent class conflict.[71] A price-based strategy may help reduce the efficiency gap between smallholder farming and large-scale commercial agriculture and may mitigate the risk that latent peasant protests may grow into real rural uprisings.

The fourth politicoeconomic ripple is likely to come from the present urban-biased development strategy. The conflict between subsidized food prices to urban consumers and low ex-farm producer prices has been discussed. What needs to be considered more seriously by policymakers is the high cost of labor for food producers, fueled by artificially high urban wage rates. The food economy, functioning under a constellation of resources of land and labor, cannot afford to lose its potential labor force. Sub-Saharan Africa is typified by a land-surplus case with a positive marginal productivity of labor, yet most governments in the region--except those such as the Ivory Coast that are able to draw low-wage labor into their rural economies from poorer neighboring countries--have pursued income policies that encourage large net losses of labor to agriculture. An easy or quick answer is not likely to be found in the mechanization of agricultural production, not only because of the high capital and foreign-exchange costs, but also because most of the necessary adaptive research has not yet been undertaken. A number of intermediate technological and organizational innovations, however, are gradually becoming feasible.[72] Apart from a growing system of periurban farming in livestock, poultry, and market gardening, a number of Sub-Saharan African countries are also manifesting a kind of reverse movement of capital and skill from urban elites into agricultural operation back into their home areas. With a little more policy imagination and greater producer price incentives, the present urban-rural conflict can be turned into a positive symbiotic relationship of interspatial mutual enrichment.

Such a symbiosis can be achieved if there is also a more serious and systematic approach to planning for the food and agriculture sector at the level of local communities or social grassroots.

71 Sara Berry, "Rural Class Formation in West Africa," in Agricultural Development in Africa, ed. Robert H. Bates and Michael F. Lofchie (New York: Praeger, 1980).

72 Keith Hart, The Political Economy of West African Agriculture (Cambridge and New York: Cambridge University Press, 1982).

Evidence is accumulating that many of these local communities in the region have innovative organizational capacities to conceive and help harness some of the resources necessary for implementing such a plan, once they perceive that a given plan will benefit them directly. But this would call for a revamping of the existing machinery and procedure for development planning in most African countries. For one thing, there must now be genuine decentralization of administration; less reliance on direct bureaucratic control; and replacement of project-based programs with price-based programs. For another, it must be openly admitted that the food problem in Africa today involves far more than what agricultural scientists can address or what ministries of agriculture can solve. Costs, in the pursuit of food and agricultural development, can be incurred anywhere. But benefits, in the form of actual food produced, are generated only specifically at the farm level. Attractive producer prices sustained throughout fairly long periods are an essential ingredient in that development process, particularly in the present-day food economies of Sub-Saharan Africa.

BIBLIOGRAPHY

Aboyade, Ojetunji. "Growth Strategy and the Agricultural Sector." In Accelerating Food Production Growth in Sub-Saharan Africa. Edited by John W. Mellor, Christopher L. Delgado, and Malcolm J. Blackie. Baltimore: The Johns Hopkins University Press for the International Food Policy Research Institute, forthcoming.

Acharya, Shankar N. "Perspectives and Problems of Development in Sub-Saharan Africa." World Development 9 (February 1981).

Agarwala, Ramgopal. "Price Distortions and Growth: A Study of the Association in Developing Countries." Finance and Development 21 (March 1984).

Ahmed, Raisuddin. Agricultural Price Policies under Complex Socioeconomic and Natural Constraints: The Case of Bangladesh. Research Report 27. Washington, D.C.: International Food Policy Research Institute, 1981.

_____. "Determination of Domestic Procurement and Issue Prices and Implications of Intervention in Foodgrain Marketing." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

_____. Foodgrain Supply, Distribution, and Consumption Policies within a Dual Pricing Mechanism: A Case Study of Bangladesh. Research Report 8. Washington, D.C.: International Food Policy Research Institute, 1979.

Ahmed, Raisuddin and Rustagi, Narendra. "Agricultural Marketing and Price Incentives: A Comparative Study of African and Asian Countries." Draft of paper prepared for the Food and Agriculture Organization of the United Nations, International Food Policy Research Institute, Washington, D.C., May 1984. Mimeographed.

Bale, Malcolm D. and Lutz, Ernst. Price Distortions in Agriculture and Their Effects: An International Comparison. Staff Working Paper 359. Washington, D.C.: World Bank, 1979.

Bates, Robert H. "Governments and Agricultural Markets in Africa." In The Role of Markets in the World Food Economy. Edited by D. Gale Johnson and G. Edward Schuh. Boulder, Colo.: Westview Press, 1983.

Bautista, Romeo M. "Domestic Price Distortions and Agricultural Income in Developing Countries." International Food Policy Research Institute, Washington, D.C., 1984. Mimeographed.

Berry, Sara. "Rural Class Formation in West Africa." In Agricultural Development in Africa: Issues in Public Policy. Edited by Robert H. Bates and Michael F. Lofchie. New York: Praeger, 1980.

Bertrand, Trent. Thailand: Case Study of Agricultural Input and Output Pricing. Staff Working Paper 385. Washington, D.C.: World Bank, 1980.

Birowo, Achmad T. and Hansen, Gary E. "Agricultural and Rural Development: An Overview." In Agriculture and Rural Development in Indonesia. Edited by Gary E. Hansen. Boulder, Colo.: Westview Press, 1981.

Bond, Marian E. "Agricultural Responses to Prices in Sub-Saharan African Countries." IMF Staff Papers 30 (December 1983).

Chopra, R. N. "The Changing Balance between Private and Public Sector Trading in India's Food System " (January 1984).

Cleaver, Kevin. The Impact of Price and Exchange Rate Policies on Agriculture in Sub-Saharan Africa. Staff Working Paper 728. Washington, D.C.: World Bank, 1985.

de Janvry, Alain. "Why Do Governments Do What They Do? The Case of Food Price Policy." In The Role of Markets in the World Food Economy. Edited by D. Gale Johnson and G. Edward Schuh. Boulder, Colo.: Westview Press,1983.

Delgado, Christopher L. and Mellor, John W. "A Structural View of Policy Issue in African Agricultural Development." American Journal of Agricultural Economics 66 (December 1984). Reprinted by the International Food Policy Research Institute.

de Wilde, John C. Agriculture, Marketing, and Pricing in Sub-Saharan Africa. Los Angeles: University of California, African Studies Center and African Studies Association, 1984.

Eicher, Carl K. "Facing Up to Africa's Food Crisis." Foreign Affairs 61 (Fall 1982). Reprinted in Carl K. Eicher and John M. Staatz, eds., Agricultural Development in the Third World (Baltimore: The Johns Hopkins University Press, 1984).

Food and Agriculture Organization of the United Nations. Delivery Systems of Agricultural Services to Small Farmers in Africa: Case Studies from Ethiopia, Kenya, and Nigeria. Rome: FAO, 1983.

Gbetibouo, Mathurin and Delgado, Christopher. "Lessons and Constraints of Export Crop-Led Growth: Cocoa in Ivory Coast." In The Political Economy of Ivory Coast. Edited by I. William Zartman and Christopher Delgado. New York: Praeger, 1984.

Ghai, Dharam and Smith, Lawrence. Food Policy and Equity in Sub-Saharan Africa. Geneva: International Labour Organisation, 1983.

Gilles, Michel and Noel, Michel. "The Ivorian Economy and Alternative Trade Regimes." In The Political Economy of Ivory Coast. Edited by I. William Zartman and Christopher Delgado. New York: Praeger, 1984.

Hart, Keith. The Political Economy of West African Agriculture. Cambridge and New York: Cambridge University Press, 1982.

Hayes, Henry M., Jr. The Marketing and Storage of Food Grains in Northern Nigeria. Samaru Miscellaneous Paper 50, Institute of Agricultural Research, Samaru. Zaria, Nigeria: Ahmadu Bello University, 1975.

Hazell, Peter B. R. "Risk and Uncertainty in Domestic Production and Prices and Their Implication for Pricing Policies." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

_____. "Sources of Increased Variability in World Cereal Production Since the 1960s." Journal of Agricultural Economics 36 (May 1985).

Helleiner, Gerald K. "Smallholder Decision Making: Tropical African Evidence." In Agriculture in Development Theory. Edited by Lloyd G. Reynolds. New Haven: Yale University Press, 1975.

International Food Policy Research Institute. Food Policy Issues and Concerns in Sub-Saharan Africa. Papers prepared by researchers at IFPRI and discussed with colleagues in Ibadan, Nigeria, February 9-11, 1981. Washington, D.C.: IFPRI, 1981.

Jha, Dayanatha; Ranade, C. G.; and Delgado, Christopher. "Technological Change, Production Costs, and Supply Response." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

Johnston, Bruce F. "Agricultural Production Potentials and Small Farmer Strategies in Sub-Saharan Africa." In Agricultural Development in Africa: Issues of Public Policy. Edited by Robert H. Bates and Michel F. Lofchie. New York: Praeger, 1980.

Kahlon, A. S. and Tyagi, D. T. Agricultural Price Policy in India. New Delhi: Allied, 1983.

Krishna, Raj. "Agricultural Price Policy and Economic Development." In Agricultural Development and Economic Growth. Edited by H. M. Southworth and Bruce F. Johnston. Ithaca, N.Y.: Cornell University Press, 1968.

Lele, Uma. "Considerations Related to Optimum Pricing and Marketing Strategies in Rural Development." In Decision-Making and Agriculture. Edited by Theodor Dams and Kenneth Hunt. Oxford: Oxford Agricultural Economics Institute, 1977.

Mears, Leon A. The New Rice Economy of Indonesia. Yogyakarta: Gadjah Mada University Press, 1981.

Mellor, John W. "Food Price Policy and Income Distribution in Low-Income Countries." Economic Development and Cultural Change 27 (No. 1, 1978). Reprinted in Carl K. Eicher and John M. Staatz, eds., Agricultural Development in the Third World (Baltimore: The Johns Hopkins University Press, 1984).

Nicol, Kenneth J.; Sriplung, Somnuk; and Heady, Earl O., eds. Agricultural Development Planning in Thailand. Ames: Iowa State University Press, 1982.

Norton, Roger. "Pricing Policy Analyses for Nigerian Agriculture." Unpublished report to the World Bank, Washington, D.C., September 1983.

Paulino, Leonardo. "The Evolving Food Situation." In Accelerating Food Production Growth in Sub-Saharan Africa. Edited by John W. Mellor, Christopher L. Delgado, and Malcolm J. Blackie. Baltimore: The Johns Hopkins University Press for the International Food Policy Research Institute, forthcoming.

Paulino, Leonardo and Mellor, John W. "The Food Situation in Developing Countries: Two Decades in Review." Food Policy 9 (November 1984). Reprinted by the International Food Policy Research Institute.

Pinstrup-Andersen, Per. "Food Subsidies: The Concern to Provide Consumer Welfare While Assuring Producer Incentives." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

Reca, Lucio G. "Price Policies in Developing Countries." In The Role of Markets in the World Food Economy. Edited by D. Gale Johnson and G. Edward Schuh. Boulder, Colo.: Westview Press, 1983.

Sadat, Owaise and van Gigch, Francis. "Lessons from the Field: Rural Development in West Africa." Finance and Development 18 (March 1981).

Sarma, J. S. "Principles and Procedures of Determination of Administered Prices of Foodgrains in India." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

Scandizzo, Pasquale L. and Bruce, Colin. Methodologies for Measuring Agricultural Price Intervention Effects. Staff Working Paper 394. Washington, D.C.: World Bank, 1980.

Siamwalla, Ammar. "A History of Rice Policies in Thailand." Food Research Institute Studies 14 (No. 3, 1975).

_____. "Public Stock Management and Its Implications for Prices and Supply." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C., April 29-May 2, 1984.

Silcock, T. H. The Economic Development of Thai Agriculture. Ithaca, N.Y.: Cornell University Press, 1970.

Singh, Inderjit; Squire, Lyn; and Kirchner, James. Agricultural Pricing and Marketing Policies in an African Context: A Framework for Analysis. Staff Working Paper 743. Washington, D.C.: World Bank, 1985.

Sisaye, Seleshi and Stommes, Eileen. "Agricultural Development in Ethiopia: Government Budgeting and Development Assistance in the Pre and Post 1975 Periods." Journal of Development Studies 16 (January 1980).

Tecle, Tesfai. The Evolution of Alternative Rural Development Strategies in Ethiopia: Implications for Employment and Income Distribution. African Rural Employment Paper 12. East Lansing: Michigan State University, 1975.

Timmer, C. Peter. "The Formation of Indonesian Rice Policy: A Historical Perspective." In Agriculture and Rural Development in Indonesia. Edited by Gary E. Hansen. Boulder, Colo.: Westview Press, 1981.

Tolley, George S.; Thomas, Vinod; and Wong, Chung Ming. Agricultural Price Policies and the Developing Countries. Baltimore: The Johns Hopkins University Press for the World Bank, 1982.

Trairatvorakul, Prasarn. "Food Demand and the Structure of Thai Food System." Ph.D. dissertation, Harvard University, 1981.

Valdés, Alberto. "A Note on Variability in International Grain Prices." International Food Policy Research Institute, Washington, D.C., April 1984. Mimeographed.

Valdés, Alberto and Siamwalla, Ammar. "Foreign Trade Regime, Exchange Rate Policy, and the Structure of Incentives for Agriculture: Issues and Policies." Paper presented at a workshop on Food and Agricultural Price Policy organized by the International Food Policy Research Institute, Washington, D.C.,April 29-May 2, 1984.

Walton, Christopher. "Lessons from East African Agriculture." Finance and Development 21 (March 1984).

Wells, Jerome C. "Food Output, Productivity Growth, and Labour Force Transfer in Twenty-Seven African Countries, 1960-80." University of Pittsburgh, Pittsburgh, Penn., August 1984. Mimeographed.

Wheeler, David. "Sources of Stagnation in Sub-Saharan Africa." World Development 12 (January 1984).

World Bank. Accelerated Development in Sub-Saharan Africa: An Agenda for Action. Washington, D.C.: World Bank, 1981.

_____. Ivory Coast: A Basic Economic Report, Annex 1, "The Agricultural Sector." Washington, D.C.: World Bank, 1977.

Ojetunji Aboyade of Nigeria was a founding member of the Board of Trustees of the International Food Policy Research Institute. He is a former chairman of the Department of Economics at the University of Ibadan, where he continues to lecture, and serves as an international consultant.
