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AGRICULTURAL MARKETS AND ECONOMIC DEVELOPMENT IN AFRICA

FINAL REPORT

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Preface

This report was commissioned by the Office of Agriculture and Natural Resources, Division of Technical Resources of the Africa Bureau of the United States Agency for International Development. The work was carried out under AID Contract No. AFR-0000-0-00-9020-00. After a series of interviews at AID and the World Bank in Washington and with other specialists, the report was researched and written by Dr. Garry N. Christensen and John H. Eriksen of Ithaca International Limited of Ithaca, New York. After completion of a preliminary draft report in April 1989, the report was reviewed by the following persons:

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To the maximum extent possible, the comments and corrections offered by these reviewers were incorporated into this final report.

The views expressed in this final report are those of the authors. They should not be interpreted as necessarily reflecting or representing in toto the views of the United States Agency for International Development, the reviewers, and/or those persons interviewed in the course of our research.

Executive Summary

Efficient agricultural markets are generally acknowledged to be a necessary, if not sufficient, condition for economic growth in most African countries. On the other hand, most observers believe that most agricultural markets have functioned poorly over the last three decades.

In this report, we present our analysis of the major constraints on existing agricultural markets in Africa and our thoughts on how effective market reform programs should be designed and implemented. After providing a conceptual basis for analysis, our point of departure is a detailed critique of agricultural markets in sub-Saharan Africa and the environments in which they operate. We identify those conditions affecting market performance which we feel are amenable to reform and attempt to define appropriate roles for the public and private sectors in the reform process.

We emphasize throughout the report that, while market reform is not a panacea for economic growth in Africa, competitive -- i.e. efficient -- markets could make a considerable contribution to improved resource allocation and economic well-being. We recognize a substantial and continuing role for governments in promoting competitive market conditions in collaboration with private market agents.

The strategy we propose for designing and implementing market reform processes stresses the need to inform -- and be informed by -- local decision-makers and market agents. Market reforms in our opinion can only be effected and maintained where local policy-makers and market participants play an active and continuous role in their formulation and implementation and are convinced of their merit.

The report concludes with a series of suggestions on how AID can contribute to the market reform process. These contributions involve both the setting of policy objectives and the implementation of the reform agenda.

I. THE "PERFECT COMPETITION" MARKET MODEL

The conceptual basis used for considering market performance is the neoclassical paradigm of "perfect competition". This economic model is used to identify those endogenous conditions which are necessary to establish and maintain competitive markets. Care is also taken to note the model's limitations, principally its inability to capture the dynamic elements of market operations and its stress on economic efficiency at the expense of socio-political objectives -- i.e. equity issues.

From the model, we see that, in the short-run, competitive conditions are essential to efficient market allocation of resources -- i.e. land, labor, capital, and management -- over space and time. Prices formed in competitive markets inform consumers of the real resource costs of production and producers of what the consumer is willing to pay for the goods or services in question. Departures from these competitive conditions lead to inefficient price formation and to the dissemination of inaccurate economic signals about the opportunity costs of production and consumption. The resultant misallocation of resources represents a dead-weight loss to society.

The long-run impacts of increased competition in agricultural markets are less direct but equally important. Correct price signals direct investment toward development of technologies and infrastructure which support improved crop and livestock production and more efficient commodity marketing.

II. CONSTRAINTS TO EFFICIENT AGRICULTURAL MARKETS IN AFRICA

Our discussion of the conceptual aspects of market behavior establishes the conditions toward which reforms should be directed and the nature of the benefits to be expected. Within this context, we postulate that the following are the principal constraints on efficient operation of agricultural markets in Africa:

- Resource limitations and weather;
- Price risk in residual markets;
- Lack of viable technologies to boost productivities in crop and livestock enterprises;
- Inadequate transport and communications infrastructure;
- Low household purchasing power;
- Direct government intervention in markets;
- Poor economic management by African governments at both the macroeconomic and sectoral levels;
- Instability of African governments; and
- Africa's changing position in world markets

We contend, first, that these constraints are serious impediments to efficient markets individually and in the aggregate; and, second, that many cannot be remedied solely by market reforms.

Among the principal constraints we see as exogeneous to the market reform process per se are the considerable limitations imposed by the poor natural resource base and weather variability in much of sub-Saharan Africa. Other constraints which severely impede the efficiency and evolution of markets in Africa, such as lack of effective technical innovation in agriculture, low household purchasing power, government mismanagement at the macroeconomic level, and the inherent instability of African governments are issues which require broader treatment. Reforms at the level of markets cannot in and of themselves overcome these constraints. And, conversely, market reforms can only be successful if initiated in the context of a more comprehensive socio-economic adjustment process.

In general, government interventions were found to be most pervasive for export crops, particularly where input and output markets are controlled by parastatal agencies. Input markets -- including those for agricultural credit -- are often linked to export crops and are severely constrained by government attempts to control both allocation of inputs and the subsidies associated with them. These markets are also often highly inefficient because of government attempts to deliberately exclude competition from private sector agents.

Markets for food crops and livestock are generally constrained more by the lack of infrastructure than markets for export crops. And, government attempts to intervene

for socio-political reasons are often both highly ineffective and very costly. This is so, first, because food production tends to be more dispersed spatially than export crop production and, second, because the food commodities marketed tend to flow through multiple marketing channels. This makes government attempts at market monitoring and control extremely difficult.

Our emphasis in market reform is on reducing government intervention and improvements in market infrastructure. It does not stem from the belief that government intervention is unambiguously bad. In fact, we support government intervention where analysts have correctly identified situations where externalities have caused a diversion of net financial and economic benefits in a market and where policies are likely to offset market distortions caused by externalities.

III. STEPS IN THE MARKET REFORM PROCESS

Given the constraints, the economic reform process which we propose is broader in scope than the markets themselves. It is based on a combination of timely policy analysis, consensus between government and policy analysts on the issues to be addressed, and political support for implementation of the reform agenda.

A broad appraisal of government macroeconomic policies is the logical point of departure. The second step should be an in-depth assessment and prioritization of problems in the agricultural sector. These analyses provide a sound basis for assessing the relative importance of agricultural market deficiencies in the sector and the economy.

The third step in the reform process should be to develop a working consensus between key political decision-makers, policy analysts, market participants, and donor representatives on a ranking of problems to be addressed. When a consensus has been reached on both economic and political concerns, the fourth step should be a series of focussed market appraisals which consider both the political and economic consequences of market reform. Analysts and policy makers are then in a position to choose which specific markets are priority targets for reform. The final step is a collaborative establishment of the reform agenda and the specification and phasing of actions to be implemented.

IV. THE ROLE OF AID IN THE REFORM PROCESS

Our recommendations for AID involvement in the market reform process encompass both participation in setting the reform agenda and in its implementation.

Initiatives to promote the effective **setting of policy objectives** include:

A. Maintaining pressure on governments for macroeconomic reforms which provide the context for market reforms;

B. Assisting governments to determine their proper role in markets and to determine priorities in the provision of public goods;

C. Strengthening legal mechanisms for enforcement of contracts; and

D. Improving the management of foreign assistance.

Of these actions, AID counsel on the appropriate role for government in agricultural markets and in the provision of public goods are potentially the most important.

Sound agricultural policy and research leading to technical innovation in crop and livestock production and marketing remain the cornerstones of economic development in sub-Saharan Africa.

The AID role in **policy implementation** begins with assistance in the analyses of specific markets -- as the basis for subsequent market reform. These analyses should aim at identifying impediments to market competition which can be remedied by specific market reforms. The means to remove these impediments will be situation-specific -- i.e. legislation to eliminate a monopoly, divestiture of an inefficient parastatal, lifting of unnecessary barriers to participant entry into market operations, or a new transportation network.

Beyond these initial actions, AID assistance should be devoted toward increasing the flows of information in key markets. Markets cannot operate competitively unless all participants have equal access to market information. The emphasis should be on increased dissemination of information through existing outlets, rather than the funding of additional communications facilities. Services which provide accurate and timely market information to agricultural producers and consumers will do much to improve their respective negotiating positions in market interactions.

AID should also emphasize training programs for public and private sector market participants involved in the reform process. These programs should include:

A. Education of government officials on the potential role of competitive markets in their economies and on the conditions necessary for effective competition;

B. Training in the collection and processing of market data, and the analysis of markets as the basis for more effective policy formulation;

C. Managerial and financial training for executive staffs in public entities charged with market responsibilities;

D. Training in business and financial management for new market entrants from the private sector; and

E. Training in export promotion and commodity markets for both public and private sector agents.

To promote the increased participation of private sector agents in the market, AID should also develop ways to improve their access to working capital. New entrants and existing market agents wishing to expand present operations or adopt new technologies often face difficulties in obtaining necessary credit from either government programs or banks. At the same time, their increased participation in markets is one of the principal objectives of most market reform agendas. Their needs include working capital for stock purchases, inventory maintenance, transport, staff expenses and expansion of client services. If private sector participation in market operations is to increase, donor assistance programs will need to be far more innovative in meeting this specific need in the future.

Market reforms pose new challenges for market participants and create new opportunities in the transformation and distribution of agricultural commodities. As part of any market reform agenda, AID must actively promote appropriate technological innovations to improve the procurement, processing, storage and marketing of both agricultural inputs and commodities.

AID should also seek ways to enhance the role of women in agricultural marketing. Much could be done to reduce the barriers to entry faced by women through better access to information, transport and working capital.

Finally, AID should promote foreign investment in joint ventures and other collaborative market activities. It can do this by acting as an effective liaison between African entrepreneurs and foreign investors. This liaison could take the form of an information network for foreign investors and/or an active effort to promote linkages between African exporters and importers from developed nations. AID also has a responsibility to seek the removal of trade barriers in international markets which inhibit the efficient flows of commodities between countries.

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Agricultural Markets And Economic Development In Sub-saharan Africa

I. INTRODUCTION

Competitive agricultural markets have long been seen as a key element in fostering sectoral growth and development in Third World economies. They are thought to be a necessary, if not sufficient, condition for sustained growth and development. In the case of sub-Saharan Africa, however, there exists the widespread feeling that agricultural marketing institutions in place during the last three decades have functioned poorly. Inefficient markets are seen as major constraints on both the overall rate of agricultural development in Africa and the distribution of incentives and benefits.

This paper considers the African agricultural markets in the 1980s and the constraints upon them. It attempts to contribute to the AID/Africa Bureau's internal discussions of such questions as:

- Can existing marketing institutions and the behavior of key marketing agents be modified so as to better contribute to increasing the real incomes of Africans?
- What are the relationships between non-competitive agricultural marketing systems and the poor agricultural sector performances of many African economies?
- What can one expect to accomplish through market reforms and how can such changes contribute to the cumulative processes of economic development in sub-Saharan Africa?
- What are the key elements to be considered in formulating and implementing market reform programs?
- What role(s) can AID play in supporting effective market reforms?

In order to establish a common basis for our discussion of agricultural markets, we present below definitions of:

- The terms "market"; "marketing functions"; "marketplace"; and "marketing system";
- The principal conditions that must prevail in a "perfectly competitive" market; and,
- The benefits we might expect from more competitive markets.

Against the defined conditions of the "perfectly competitive" market model, we then discuss the nature of markets in sub-Saharan Africa and why many of them function at less than optimal levels of efficiency. A review of key constraints on agricultural markets leads to presentation of the practical steps in the market reform process; and, finally, to our suggestions on how AID can assist in the market reform process.

II. ESSENTIAL DEFINITIONS

In reviewing the available literature and listening to AID/Africa Bureau discussions on African marketing problems, it is evident that fruitful conclusions are difficult unless participants are careful to define in advance the terms they intend to use. Two common difficulties are encountered in discussions on African markets. First, participants often do not distinguish between terms:

- "Market";
- "Marketing functions";
- "Marketplace"; and
- "Marketing System"

Second, participants often tend to confuse the direct benefits which may be attained from reform of specific "markets" from those associated with general development programs aimed at sectoral or national economic growth.

In the hope of avoiding these problems in this paper, we propose the following definitions for consideration.

A. What Is a "Market"?

For purposes of this paper, a "market" is defined as the economic institution which enables sellers and buyers of a defined good or service to negotiate the legitimate transfer of that good or service between them and over space and time. Each "market" is defined by its own particular set of conditions and constraints. Markets, in economic terms, may be classified as "competitive", "monopolistic", "monopsonistic" and "oligopolistic" -- with each term more fully defining a particular set of distinguishing market conditions. Examples of markets within Africa are:

1. Markets for factors of production at the level of the national economy -- i.e. institutions which facilitate the legitimate exchange of land, labor and capital -- including foreign exchange -- between sectors;
2. Markets for commodities -- i.e. institutions through which agricultural products -- destined for domestic consumption or export -- are exchanged; and
3. Markets for inputs -- i.e. sector-specific markets which enable flows of agricultural inputs like fertilizers, seeds, breeding animals, machinery, and production credit.

B. What are "Marketing Functions"?

The term "marketing functions" -- or often, just "marketing" -- will be used to refer specifically to those transformations in time, space, and form that are associated with the storage, transportation, and processing of specific agricultural inputs or commodities.

C. What Is a "Marketplace"?

A "marketplace" is defined in terms of a specific geographic location, with or without significant physical infrastructure -- i.e. utilities, market stalls, storage facilities -- at which one or more types of goods and services are exchanged. In Africa, a "marketplace" may be as simple as a commonly agreed area within a village, with essentially no permanent infrastructure, at which sellers, intermediaries, and consumers periodically assemble to exchange goods and services; or it may be as complex and physically imposing as the large central marketplaces of many Africa capitals.

D. What Is a "Marketing System"

A "marketing system" is a series of interrelated "markets" linked over space, time, and in form. The principal "market functions" linking "markets" are transport (over space), storage (over time), and the degree of product processing (in form).

The essential distinction between a "market" and a "marketplace" is that competitive "markets" can -- and do -- exist independently of highly developed "marketplaces" in Africa; whereas highly developed "marketplaces" do not necessarily correlate directly -- or even closely -- with the existence and maintenance of competitive and efficient "markets". Developed marketplaces do, however, seem to correlate quite closely with increased government control over markets and marketing functions in many African situations.

Similarly, the extent and complexity of "marketing functions" are a direct consequence of the existence of a "market". The evolution of such functions is determined by the characteristics of a specific "market". While physical infrastructure in a particular "marketplace" may support or preclude the development of certain "marketing functions", the existence of a "marketplace" per se neither generates the need for nor necessarily determines the direction of these functions.

III. PRINCIPAL CONDITIONS OF A "PERFECTLY COMPETITIVE" MARKET

The conventional point of departure used by economists to examine "markets" is the neoclassical model of the "perfectly competitive" market. "Perfect competition" in this model refers to the complete absence of direct competition among market agents; as opposed to the businessman's concept of perfect competition which regards "rivalries" between firms as the essence of competition. The economist's concept of perfect competition is, thus, entirely impersonal. Buyers and sellers do not recognize any differences among themselves and all relevant economic magnitudes are determined by impersonal market forces.

A useful, non-mathematical explanation of this model is presented in Microeconomic Theory (Ferguson, 1972, pp. 250-281) from which most of this section is abstracted. In it, Ferguson explains that four important conditions define perfect competition in economic terms. Taken together, these conditions guarantee a free, impersonal market in which the forces of demand and supply -- or of revenue and cost -- determine the allocation of resources.

A. Small Size and Large Numbers

First, perfect competition requires every economic agent in the market to be so small, relative to the market as a whole, that it cannot exert a perceptible influence on price. From the standpoint of buyers, this means that each consumer taken individually must be so unimportant that he or she cannot obtain special considerations from the sellers -- e.g. volume discounts on commodity sales; rebates on transactions costs, including transport; special credit terms from sellers. None of these can prevail if the market is perfectly competitive.

From the seller's standpoint, perfect competition requires each producer to be so small that he cannot perceptibly affect the market price by changes in his output. This provision means that each perfectly competitive producer believes that the demand curve he faces is a horizontal line. If all producers act in the same way at the same time, changes in the quantity supplied will definitely affect the market price. But, if perfect competition prevails, each producer is so small that individual changes will be unnoticed.

B. Homogeneous Product

A closely related provision is that the product of any one seller in a perfectly competitive market must be identical to the product of any other seller. This ensures that buyers are indifferent as to the individual or firm from which they purchase.

In this context, the word "product" has a much more detailed meaning than it does in ordinary conversation, where one might regard tractors, fertilizers, maize and cows as products. For economists, these labels are not adequate product descriptions, where every changeable and distinguishable feature of the good being exchanged must be included. When this is done, it is possible to determine whether a market is characterized by a homogeneous -- or perfectly standardized -- commodity. If it is not, the producer who has a slightly differentiated product has a measure of control over the market and, therefore, over the price of his or her specific variant of the product being exchanged. Given this edge, he or she can affect the market price by changes in output. This existence of this condition is incompatible with the definition of perfect competition.

C. Free Mobility of Resources

A third condition for perfect competition is that all resources are perfectly mobile -- i.e. that each resource can move in and out of the market very readily in response to pecuniary signals.

The condition of perfect mobility is an exacting one. First, it means, for example, that labor must be mobile, not only geographically but among jobs. The latter, in turn, implies that the requisite labor skills are few, simple and easily learned. Next, free mobility means that essential inputs are not monopolized by a single owner or producer. Finally, free mobility means that new firms -- or new capital -- can enter and leave an industry or market without extraordinary difficulty.

If marketing licenses, export/import permits, authorizations to transport goods between points, and the like are required, entry is not free. Similarly, if substantial investment outlays are necessary and access to credit is restricted, market entry certainly is not easy. If average cost declines over an appreciable range of output, established

producers will have cost advantages that make entry for new participants difficult. In short, free mobility of resources requires free and easy entry and exit of new participants into and out of a market -- a condition that is very difficult to realize in practice.

D. Perfect Knowledge

Consumers, producers, and resource owners must possess perfect knowledge if a market is to be perfectly competitive. If consumers are not fully cognizant of prices, they might buy at higher prices when lower ones are available. There will then not be a uniform price in the market. Similarly, if laborers are not aware of the wage rates offered, they may not sell their labor services to the highest bidder. Finally, producers must know their costs as well as the market price in order to attain the most profitable rate of output.

In its fullest sense, perfect knowledge also requires complete knowledge of the future as well as the present. In the absence of this omniscience, perfect competition cannot prevail.

This summary review of the four conditions for a "perfectly competitive" market should immediately convince the reader that no market has been or can be perfectly competitive. Even at the most basic level in Africa's agricultural markets, where acceptable approximations of the first three conditions might sometimes be found, the fourth is obviated by the vagaries of weather. One might reasonably ask, therefore, why such a palpably unrealistic market model is of any relevance to this paper.

The answers for our present purposes can be brief. First, generality in discussions of agricultural markets in Africa can be achieved only by means of abstraction. While it is evident that no theoretical construct can be perfectly descriptive of real world phenomena, it is equally true that discussions of African "market" problems based only upon discrete "market" cases rarely come to generalizable conclusions.

Second, resort to the model shows us immediately that existing "markets" in Africa necessarily depart from the perfect competition ideal and, by definition, are "inefficient" and have "distortions". The issue, therefore, is not the existence of such deficiencies; it is one of the degree and direction departures have taken from the competitive ideal. In some cases, government-induced "distortions" have effectively defined markets out of existence -- as with land markets in countries where all land is "owned" or "held in trust" by the government.

This being the case, the market analyst's problem is an **empirical** one of determining the nature, extent and causes of market "distortions" in the diagnostic stage and monitoring changes in market conditions through the course of any reform program.

Thirdly, having a conceptual standard -- even if that standard itself is ultimately unattainable due to the rigor of its conditions -- provides the analyst with direction in assessing the deficiencies and constraints in real world "market" situations.

Fourthly, knowing what conditions are needed to guarantee competitive "markets" allows us to see any effort in market reform as progress over time along defined axes. In short, after analysis of a specific market, the need for reform can be assessed and directed toward satisfaction of the essential conditions needed for more competitive

markets. For example, government policies commonly assume product homogeneity -- e.g. among cereals such as maize or millet -- and set a single official price accordingly. But market analyses frequently demonstrate that both producers and consumers recognize considerable heterogeneity in the "product" being exchanged. Reforms which allow market forces to set different prices that more accurately capture the product's heterogeneity are thus indicated. Similarly, if market entry is shown to be limited by prohibitive local licensing procedures, or restrictions on access to working capital in financial markets, then both the nature and direction of the reforms needed are indicated by the model presented above.

While the perfect competition model is a useful point of departure for discussions of agricultural "markets", it must be pointed out that exclusive use of this model presents two problems when used as the basis for discussions with African policy makers. First, the model is constructed as an exercise in comparative statics -- i.e. it excludes dynamic considerations. This means that while the model can provide guidance as to the types and directions of change needed to "reform" a specific market, it is unable to analyze changes over time -- except as a series of "snapshots" of "market" conditions at discrete intervals in the evolution. (see Annex A for a summary of tools which are useful in this context).

And, second, the model in its purest construction can only "explain" African governments' use of policy interventions in agricultural "markets" to achieve "desirable" socio-political objectives in terms of "efficiency" losses and second-best solutions. While this approach is acceptable to most economists, dependence on "efficiency" criteria alone in analyzing and explaining "market" performance to African policy makers may not be the most palatable way to garner their support for policy reforms.

Most senior African policy makers, even when trained as economists, tend to approach their responsibilities as politicians first -- and as economic technocrats second. Failure to recognize this fundamental socio-political element in discussing and planning "market" reforms has slowed -- if not derailed -- many recent efforts in Africa.

IV. WHAT CAN WE EXPECT OF A COMPETITIVE MARKET?

One might ask, then, "Why worry about the competitiveness of agricultural markets in Africa?". Competition is essential if resource allocation is to be efficient. The concept of efficiency must be clarified, however, to understand the kinds of efficiency which result from more competitive conditions in key markets. Three different kinds of efficiency are distinguished: allocative (or price) efficiency, technical efficiency, and economic efficiency.

For any given level of technology, firms will choose the combination of inputs which maximize profit. Levels of production are determined by factor costs and product prices, which are in turn a function of market conditions. Any change in market conditions will change factor costs and prices, with a subsequent change in the profit maximizing levels of input use -- i.e. resource allocation -- and output. The profit maximizing level of output results from the least-cost combination of inputs. This response is termed **allocative efficiency** and is the most direct effect of the degree of market competition, and leads to the efficient allocation of resources.

Technical efficiency refers to whether firms obtain the maximum output from a given level of technology -- i.e. a given level of inputs. A technically efficient firm is on the boundary of its production possibility surface, while a firm that is also allocatively efficient is on that point on the boundary which is also tangent to the ratio of input prices. Market conditions have a less direct impact on technical efficiency, influencing the adoption rates for a given technology, rather than the research which produces it.

Economic efficiency measures the combined influence of allocative and technical efficiencies, and so represents the effects of both technological advances and prevailing market conditions.

A. Improved Price Formation and Allocative Efficiency

One of the greatest benefits of increased competition in agricultural markets is more efficient price formation. Timmer, Falcon and Pearson summarize this benefit as follows:

> "Prices are formed efficiently when large numbers of buyers and sellers, all with similar access to relevant market information, interact to agree on the basis of exchange, a price. This price sends signals to consumers about the resource costs of supplying the commodity to them. It simultaneously sends signals to producers about the willingness of consumers to pay the resource costs of production. Efficient price formation is essential to the efficient allocation of resources in a market-directed economy." (1983, p.154).
>
> This price formation process inevitably plays a dual role in agricultural markets.
>
> "It integrates information about future crops and alternative supplies, demand pressures, and storage costs to allocate the supplies in hand to future time periods. At the same time, the temporal pattern of prices established, or the price expectations formed, signal producers, consumers, and the suppliers of storage as to the opportunity costs of their production, consumption, and storage decisions." (Ibid, pp. 154-155).

While non-competitive markets may operate in the conventional sense, their failure to transmit accurate signals about real opportunity costs can cause enormous misallocation of resources in agricultural production and consumption, and very serious disruptions to the smooth temporal flow of agricultural goods and services to consumers. When governments intervene in markets to fix prices in an attempt to achieve short-run "efficiencies" in the distribution of goods and services, prices often fail to reflect the opportunity costs to the society of actual production and consumption decisions. In the absence of market-driven price determination, no effective mechanism communicates essential information back up to government policy-makers. As price signals become more and more unbalanced, they frequently result in severe shortages of goods and services, on the one hand, or massive budget subsidies for producers and consumers on the other.

B. Long-Run Effects of Price Incentives on Technical Efficiency

As Brown points out:

> "The most important long-run effects of price incentives on production may be through price-induced shifts in the production function, rather than through greater efficiency of resource use with existing production functions. These long-

> run effects depend upon the extent to which the incentive structure has an important effect upon technological change (both on research and on adoption of new techniques by farmers), on public and private investment related to agriculture, and on institutional change affecting agricultural output (land reform, extension services, marketing, and distribution facilities)." (1978, p.88).

C. Lower Transactions Costs

The third major benefit of heightened competition in agricultural markets is that prevailing transactions costs in the exchange of goods and services reflect the real costs of exchange. That is, as market conditions approach the ideal of perfect competition, there is less potential for a single market participant to behave opportunistically by imposing transaction costs over and above real costs.

D. Improvements In Distribution of Benefits

As Brown again points out:

> "Low food and other agricultural prices are politically popular on the grounds that they increase real incomes and employment of the urban poor, and that the only losers are large farmers. There is a high cost attached to such low prices, however, if their effect is to retard cost-reducing investment and innovation in agriculture. Competition between farmers and traders assures that most of the decline in unit costs will be passed on to consumers in lower prices, though per capita farm incomes will also rise as output rises. Moreover, studies of the effects of price distortions and controls in specific countries usually conclude that it is the upper and middle-income urban groups (including employers) and large farmers who are the chief beneficiaries." (1978, p.89).

V. CONSTRAINTS ON AGRICULTURAL MARKETS IN SUB-SAHARAN AFRICA

Most sub-Saharan countries look to their agricultural sectors to sustain economic growth and maintain social stability. Few have large, broadly-based industrial and manufacturing sectors. And where such sectoral development has occurred, firms are often dependent on agro-industrial activities for their survival and growth. Finally, industries based on primary resource extraction -- i.e. petroleum, minerals -- are present in only a limited number of countries.

Between national agricultural sectors, the specific mixes of crop and livestock production enterprises vary widely. Most economies depend on one or more agricultural export commodities for foreign exchange earnings. In many countries, an increasing portion of those earnings are used to pay for food imports and external debt servicing. Finally, the nature and functioning of existing agricultural markets in sustaining production activities and moving commodities from producers to consumers are shaped by a multiplicity of local pressures: economic, political and social.

To generalize about the state of all agricultural markets in Africa from analysis of any one country's experience is futile. This section, therefore, presents a synthesis of key constraints on agricultural markets as drawn from the existing literature and our collective experience living and working in Africa. We present this synthesis without pretense that the constraints cited apply equally across all sub-Saharan countries.

A. Resource Limitations and Weather-related Risk

In all African countries the natural resource base and weather ultimately shape: producer demand for agricultural inputs and production credit, aggregate agricultural production, and the volume of agricultural commodities marketed. The resource base -- and man's technological adaptation to its particular constraints -- determines the feasible mix of crop and livestock enterprises and sets technical limits on the production potential. Within this larger constraint set, agricultural prices -- as conveyed through markets -- are the major factor in determining what will **actually be** produced and what production technologies will be adopted by farmers over time.

Dryland agriculture is the dominant mode of crop and livestock production in most of Africa. Therefore, annual weather -- and particularly the temporal and spatial distributions of rainfall -- plays an enormous role in determining the quantities of domestic agricultural commodities available for subsistence consumption and market sale in any market period. Weather also plays a major role in farmers' decisions as to the types and quantities of the inputs used.

These realities shape and distinguish agricultural markets from industrial markets in, at least, two ways. First, the market period -- i.e. the shortest period of time over which supply is absolutely fixed -- is at least one year for most major field crops and longer for many livestock and tree products. Hence, the quantity of a particular commodity which can be marketed is fixed within that period, barring access to imports.

Once total quantities of domestic production and any carry-over stocks are determined, agricultural markets within the market period can only affect the final disposition of the available commodity. Unlike industrial and manufacturing enterprises -- where market periods can be very short and supply of a product can be increased or decreased quickly in response to changing market conditions -- supply responses in most agricultural enterprises occur with substantial lags. This implies that any market reforms aimed at increasing either agricultural input use or output must be maintained over relatively long periods before supply responses are fully expressed.

Second, since variability in weather is such a key factor in determining the use of agricultural inputs in Africa, farmers have limited incentives to purchase and store inputs. For most crops, input purchases -- if they occur at all -- follow producer appraisals of local weather conditions immediately before and during the "rainy" season(s). This situation introduces a significant element of uncertainty into the market strategies of both farmers and input suppliers. It places a high premium on decentralized decision-making in coping with change in local conditions, both between regions and over time. Under such conditions, markets which allow local market agents maximum flexibility in accommodating to change are likely to be most efficient. Correct price signals are communicated to producers and consumers and transactions costs over space and time are minimized.

B. Price Risk

Wide fluctuations in the prices of agricultural commodities are a further constraint on the development of agricultural markets. Prices, particularly for staple food crops, are inherently unstable in many situations because the markets tend to be very thin. (This is especially true for residual markets where only a very small percentage of the total crop is actually marketed). Weather-related factors, as described above, exacerbate this instability.

Producers bear the brunt of this risk as there is no institutional means of insuring against yield or price risk. Middle-men are able to "self-insure" by maintaining higher margins, but this practice increases the cost to consumers. Finally, consumers are unable to benefit fully from any decline in prices, as high and relatively fixed transport costs result in a noticeable "stickiness" in consumer prices. These factors limit the potential benefits of free operation of the price mechanism, particularly for producers and consumers.

C. Lack of Broadly-based Agricultural Technologies to Boost Resource Productivity

It is generally acknowledged that agricultural research and extension programs in Africa to date have contributed little to the development and dissemination of improved agricultural technical packages for farmers. For example, the World Bank in presenting its Joint Program for Action in Africa states that:

> "Agricultural research is failing to provide adequate support for producers of both food and export crops. Major advances like those which revolutionized wheat and rice cultivation in Asia have not been made since the 1960s, when new maize hybrids were adopted in southern and eastern Africa. No major breakthrough has been achieved in genetic improvement of rainfed millet and sorghum, which account for 80 percent of the cultivated land in the Sahel and other areas of low rainfall. Nor can rapid progress be expected." Furthermore, "international and regional programs do not cover such export crops as cocoa, bananas, coffee, tea, and oil palm to which other parts of the world have directed more attention and now have superior technology..." (1984, p.31).

One view is that:

> "The major problem is to develop a more effective use of existing research capacity. At the national level in many priority areas, research results have not been adequately disseminated. Even local researchers are often underemployed because programs lack focus, continuity, and coherence; research management is weak and its status is low. In most African countries, researchers are isolated from farmers and extension workers, so nobody can see the direct advance of research." (Ibid, p.31-32).

It is easy to attribute the lack of technological advance to inadequate agricultural research and extension. A more careful review of the research effort might suggest that the problem is one of an inappropriate focus, with the emphasis on developing new, high-yielding, fertilizer-responsive varieties which are ill-suited to either the physical or managerial conditions which characterize agriculture in sub-Saharan Africa. Under farm-level conditions, these new varieties are consistently out-performed by local varieties. Small wonder then that extension efforts meet little success when the technological packages which they are promoting are inferior to traditional farming practices. Technological change will come when research efforts are focused on yield stability, rather than yield per se. And only then will extension agents have viable technologies to promote.

As a result of this continuing failure of agricultural research agencies to produce viable new crop and livestock technologies, agricultural production in the aggregate and on a per farm worker basis has actually declined in many countries over the last two decades. Agricultural sectors do not benefit from a continuing flow of innovation; and the real costs per unit of agricultural output have not declined significantly because

there has been no broad farmer adoption of those "improved" agricultural technologies which are being disseminated.

In the absence of technologically-driven agricultural innovation, many governments have resorted to public intervention in agricultural markets in the vain hope of palliating the fundamental productivity problem. Without a growth dynamic driven by the motor of viable agricultural technology, more competitive markets in Africa can do little more than efficiently allocate available resources to end-uses, against a background of declining per capita incomes and eroding food security. Markets distorted by government tinkering with prices and market conditions only make a bad situation worse.

D. Poorly Developed Infrastructure – Particularly in Transportation and Communications Networks

Many African countries have large territories and relatively small human populations, most of which are in rural areas. In these countries extensive agriculture is the norm. Consequently, low crop and livestock productivities per unit of land utilized and predominantly subsistence consumption combine, first, to disperse production over large areas and, second, to reduce total flows of agricultural commodities entering marketing systems.

These factors place a high premium on good roads and efficient transport operations to effectively integrate agricultural and other markets and keep transactions costs for shipments within acceptable limits. Ground transport must be able to move commodities efficiently over long distances throughout the year without ruinous effects on vehicles.

In many countries, road networks are poorly articulated. As Eicher and Baker point out:

> "Africa's rudimentary transportation network poses one of the major constraints on the distribution of agricultural commodities and the integration of African economies. Commodities are generally transported to local assembly markets using headloads, baskets, bicycles, and donkeys. Transport by animals is gradually giving way to trucks. Transportation problems are particularly severe in countries such as Mali, Niger, Chad and Mauritania with vast land areas and roads that are often impassable during the rainy season. Because of the poor infrastruct-ure, much of the value added in retail prices of agricultural commodities, particularly food grains, is due to transportation costs. ... Sorenson et al (1975) estimate that by the time maize has travelled 60 kilometers from a village in Zaire, its price has increased by over 25 percent because of transportation costs. Larger margins are not uncommon with farmgate prices frequently being as little as half the price found in nearby assembly markets and towns." (1982, p.191).

Where rural access roads do exist, many are often little more than cart tracks. Where main roads have been constructed they are often deteriorating due to lack of routine maintenance. Poor infrastructure leads directly to high maintenance and repair costs and shortened road lives for most vehicles in Africa, with obvious consequences for transactions costs within and between markets. The same authors conclude that "inability to secure backhauls is considered to be a major problem" for truckers. And, that "the greatest influence on cost other than distance ... is the condition of the road." (Ibid, p.191).

Similarly, market information systems are poorly developed in many African countries. Public networks for collection and analysis of routine price and quantity data from a broad spectrum of local markets are often non-existent. If they exist at all, such systems tend to concentrate reporting on officially-sanctioned markets in the capital and one or two major towns. Details on government planning for food security and buffer stocks; actual prices received in different external markets for export crops; availability of and prices for agricultural inputs, government contracts and supply tenders; and the like are often considered to be "privileged". Dissemination of such information is often centered within restricted circles, often members of politically-privileged elites. Meanwhile, information from the far more interesting and important "illegal" parallel markets is under-reported or ignored altogether.

Even where adequate public systems for data collection and analysis are present, media outlets -- i.e. radio, television, newspapers -- are often under government control and do very little to disseminate useful and unbiased market information to producers, consumers and market intermediaries on a timely basis. Information flows are often poor, even for officially-sanctioned markets, with government decisions on official prices frequently announced after crops have been planted and crop "forecasts" available only several months after the crops in question have been harvested.

On the other hand, flows of market information between private sector marketing agents are often astoundingly rapid, accurate and comprehensive. These highly developed information systems are often present when intra-regional marketing systems are dominated by a particular ethnic group, as with the marketing of cattle by Fulani market agents between Mali, Mauritania, and Burkina Faso and Ghana and Cote d'Ivoire. The role of Hausa market intermediaries in Niger and Nigeria in promoting the recent boom in the regional cowpea trade is another example of how powerful and effective such systems can be in altering long-standing production and trade patterns, often far in advance of official recognition and policy change at government level.

The fundamental problem with private information networks, however, is precisely that accurate information on real prices, commodity flows, and other conditions in Africa markets carries with it significant market power. Given the potential for excess profits to be derived from such information, there are obvious pressures within existing networks to guard market intelligence between trusted members. Without countervailing access to equally good market information from public and/or neutral private sources, both producers and consumers outside existing networks can be placed at a significant disadvantage in market negotiations.

E. Low Household Purchasing Power

According to the World Bank, growth in real per capita gross domestic product has been declining in sub-Saharan Africa at an annual rate of 2.9 percent per annum in the 1980s and is projected to be at zero real growth through 1995 (World Bank, 1988, p.2). Effective consumer purchasing power has been stagnant or declining in the majority of African countries over most of the last two decades. This problem has been aggravated recently -- and, at least, in the short-term -- by the strictures on civil servant salaries, government expenditures, and urban wage rates adopted as elements in structural adjustment and other related macroeconomic programs negotiated with the IMF and the World Bank.

African consumers at all levels find themselves with diminished effective purchasing power. They are increasingly hard pressed to maintain -- much less expand -- their per capita consumption of purchased goods and services. Since food purchases typically comprise a large proportion of household consumption expenditures, this income trend has serious consequences for existing agricultural markets and implications for their future development.

One of the direct consequences of declining real incomes is an increased concentration by consumers on acquisition of basic household food needs at the lowest possible cost. This constraint at the consumer level is reflected in the very weak consumer demand observed for complementary market services in commodity transformation, product packaging, and/or wholesaler/retailer service activities in Africa. With income constraints, wherever feasible, consumers tend to purchase foods in fresh or unprocessed form and substitute household labor in processing and preparation for the types of services normally performed by agro-industrial and other agents in the food marketing chains of more developed economies.

More indirectly, consumer concerns over declining real incomes and effective purchasing power fuel political demands for government interventions to subsidize -- or otherwise lower -- food prices, to extract greater flows of food from rural areas through taxation and/or other public mechanisms, and to increase imports of cereals and other food products -- often on concessional terms.

Given their political bases, many African governments are unable to effectively resist organized political pressure from key support groups and, in accommodating them, they introduce distortions into the functioning of domestic commodity markets. One result of this is that market reform proposals based solely on projected gains in market efficiency are not likely to command great attention and allegiance from local policy makers, particularly if the impacts of such actions are seen to threaten the interests of their real power bases and, hence, their political survival.

The absence of strong economic and political incentives embodied in growing consumer demand also affects processing and marketing services in commodity markets. Neither private market agents nor governments will make investments to affect the rapid development of more complex and "sophisticated" agricultural marketing systems. This is particularly true in cases where such change can only be accomplished by adding to present unit transaction costs for agricultural commodities.

F. Direct Government Interventions in Markets

1. Export Crops

Most African countries rely on one or more export crops for substantial contributions to national economic growth and foreign exchange earnings. In some instances, one or two export crops so dominate the national economy that aggregate growth, government revenues, and balance of payments prospects are effectively determined as functions of annual crop marketings -- e.g. groundnuts in Gambia, cocoa in Ghana, cotton and livestock in Mali and Chad, and coffee in Uganda. Even in countries with more diversified economies, agricultural exports are often critical determinants of regional prosperity and government revenues.

As Bates points out:

> "An important feature of the African economies is the nature of the marketing systems employed for the purchase and export of cash crops. The crops are grown by private farm families, but they are then sold through official, state-controlled marketing channels. At the local level, these channels may take the form of licensed agents or registered private buyers; they may also take the form of cooperative societies or farmers' associations. But the regulated nature of the marketing system is clearly revealed in the fact that these primary purchasing agents can in most cases only sell to one purchaser: a state-owned body, commonly known as the marketing board."
>
> "Initially, the revenues accumulated by the marketing boards were to be used for the benefit of the farmers, in the form of price assistance funds. At times of low international prices, these funds were to be employed to support domestic prices and so to shelter the farmers from the vagaries of the world market. ... But commitments to employ the funds for the benefit of the farmers proved short-lived. They were overborne by ambitions to implement development programs and by political pressures on governments from non-agricultural sectors of the economy." (1988, pp. 333-335).

In Africa, there are many examples of the revenues of marketing boards being progressively diverted to uses other than the stabilization of farmers' incomes or other direct farmer support programs. Bates cites the experiences of the Lint Marketing Board in Uganda, where revenues from cotton were diverted to: support major dam construction, the purchase of shares which yielded no dividends, and the provision of long-term, interest-free loans to capitalize local financial institutions.

He also presents cases from Nigeria and Ghana. In the former local marketing board funds were first loaned to regional governments; then given to these governments in the form of grants. Later still, legislation governing the use of the revenues was altered such that the boards became instruments of direct taxation. Similarly in Ghana, the government decided to remove legal restrictions on its access to the funds of the cocoa marketing board.

Finally, Bates contends that:

> "The movement from an instrument of price stabilization largely for the benefit of farmers to an instrument of taxation with the diversion of revenues to nonfarm sectors can be seen as well in changes in the price-stabilizing policies employed by the marketing boards. Investigations clearly suggest that what was stabilized was not the domestic price paid to farmers but, rather, the difference between the domestic and the world price, that is, the off-take from the farmer which was appropriated by the government." (Ibid, p. 335).

The overall result in such cases is usually a narrow marketing channel which collects and exports a specific commodity either directly through a government agency or through a sanctioned parastatal company. Often such an institution also operates within a region as the only government-sanctioned supplier of agricultural inputs and production credit to farmers. Non-participation by farmers in production and marketing of the particular export crop in these circumstances often means that they are effectively excluded from direct access to modern inputs -- i.e. fertilizers, agricultural machinery, insecticides -- and short-term credit at subsidized rates.

In the best of such cases, non-participants are forced to rely on "illegal" parallel markets to obtain needed inputs for production of alternative crops. This, at very least, raises the costs for the purchased inputs in the crop enterprise being undertaken. In the worst

situations, farmers are simply non-adopters of any improved agricultural technologies, with consequences for local incomes and the benefits of factor use in alternative enterprises.

Institutional mechanisms of this type inevitably violate one or more of the principal conditions of the "competitive market" model. They -- by definition and practice -- restrict access to and participation in marketing of the export crop to a monopsonistic relationship. Similarly, supply of inputs is reduced to a monopolistic relationship. These relationships often serve to fix local resources in certain production/marketing patterns and to raise the risks of and penalties for factor mobility between alternative agricultural enterprises and between sectors of the economy.

Additionally, these institutional mechanisms frequently reduce information flows between smallholder producers and the single institution which serves as both the ultimate "consumer" and "supplier", to a series of one-way communications. These communications often dictate to participants what crop and how much of it they must plant; what cultural practices they will adopt; what inputs they will use; what prices they will pay for inputs, including credit; and what prices they will receive for their output.

In enunciating these obvious departures from the "competitive market" model however, policy analysts should pause to weigh the potential countervailing benefits to be derived from such market intervention mechanisms before drawing hard and fast conclusions as to their viability and usefulness in the African context.

First, export marketing institutions of this type have been shown, in at least some instances, to provide participants with guaranteed and reasonably stable markets for their inputs and outputs; something which is often not the case with alternative production/marketing enterprises.

Second, economic relationships within these systems often are more firmly tied to international market conditions and border prices and, therefore, have the potential at least to be more reflective of efficiency criteria in an economic context broader than that of any individual state.

Third, with sufficient independence from governments and mechanisms for participatory decision-making and management, these institutions can -- and do -- generate the internal resources to finance and support those elements of vertical integration in production, processing, and marketing which are essential to modern agricultural enterprises. Some of these elements include: grading systems which link commodity prices to quality differences; effective transport networks for crop collection; local and functional processing facilities; and commodity-specific research and extension networks to develop and promote improved technical packages for producers.

Fourth, although the record is not uniform, certain commodity-specific institutions within Africa do seem to generate beneficial "spillover" effects for other types of agricultural production in their areas of influence. Cotton programs in West Africa are a commonly cited example. Observers have noted better performance in the production of food crops and in the volume of marketed surpluses in areas served by cotton marketing agencies.

With respect to cereals in Mali, Staatz, Dione and Dembele (November 1988, p.22) state that their "data ... indicated that most of the marketed surplus was produced by farmers located in the southern part of the cotton-producing CMDT zone who were also heavily engaged in cotton production and had a full allotment of animal traction equipment."

In an earlier paper, Dione and Staatz in discussing relative producer supply responses to government price support programs for cereals in Mali state that ".... it becomes obvious that the price support effort mostly benefited fully and semi-equipped farmers of the cotton producing southern zones while hurting a large number of semi-equipped farms and almost all non-equipped farms in non-cotton producing zones, where most farmers are net buyers even in a good rainfall year such as 1985/86." (1987, p.9).

These observations are seconded by World Bank evaluators reviewing cotton programs in Burkina Faso, Cote d'Ivoire and Togo. They report that "an important finding of the surveys undertaken is that cotton producers use more modern inputs on foodcrops and get better yields than do non-producers, illustrating both the "motor" and demonstration effects of cotton on other crops." (Operations Evaluation Department, 1988, p.9)

The existence and operation of parastatal -- and other restrictive -- export marketing arrangements in many African countries may represent second and third-best solutions to existing constraints in African agricultural sectors -- and in the broader economies. To the extent that existing institutions pay primary allegiance to and are controlled by clients other than their direct participants, they are clearly vulnerable to external abuses and market distortions. Too many of these organizations are legitimately accused of being nothing more than high cost institutions which pay low prices to farmers. However, not all such systems are unambiguously "bad" for African producers or market agents and, given present conditions in many countries, unqualified calls for their abolition are not always the most creative approach to needed reforms.

Again, with regard to cotton programs, Bank analysts point out that:

> "The reasons for the steady increase in cotton yields and production ... are in large part due to a **development strategy** integrating technical, financial and marketing services to farmers. Key components of this development strategy include, first, a research service which has good links (i) at the international level in respect to cotton product manufacturing, and is thus able to keep abreast of changes in processing technology which affects varieties selected and grown; (ii) at the country level in respect of research stations in the field, thus facilitating transfer of technology across countries; and (iii) at the farmer level through extension, thus allowing for rapid feedback regarding the suitability of new techniques introduced, and the potential constraints to adoption. As a result, the technical package which has been adopted by almost all cotton farmers is constantly changing in response to developments at the international, national and farm level. Second, the financial autonomy of institutions developed ... has reinforced the efficiency of the technical services by allowing timely procurement of inputs, timely delivery to farmers -- under a credit scheme -- and cash payments to farmers when the crop is collected for marketing. Third, marketing arrangements are based upon a guaranteed producer price, announced ahead of the season and ensuring adequate returns to farmers. In all three countries, significant production increases occurred during periods of either price stagnation or decline in constant terms, as a result of higher yields an productivity due to technical breakthroughs. This reconfirms that farmer returns can be as much affected by

improved productivity as by price; in respect of the latter, the surveys showed that it was the guarantee that farmers would be paid rather than the nominal price level which was considered important." (Ibid, p. viii).

2. Food Markets

Government policymakers affect food markets in Africa in two fundamental ways. First, many either do not understand or will not acknowledge the economic role of competitive markets in the allocation of resources and costs among producers, consumers and marketing agents. In this, they contribute to -- and, in many instances, deliberately create -- a climate of negativism toward open, competitive markets by constantly voicing erroneous information and half-truths about marketing agents and activities not directly controlled by public agencies. Second, governments intervene directly in markets to achieve socio-political objectives which are perceived to be unobtainable by resort to competitive market forces.

The first problem is nicely summarized by Timmer, Falcon and Pearson.

> ""Food prices are too high." "Crop prices are too low." Both complaints are heard in virtually all countries. All consumers would like food prices to be lower, to take a smaller portion of their family budgets. All farmers would like their crop prices to be higher, to provide them greater return for their effort and investment. The tension between the two, the **food price dilemma**, inevitably focuses the attention of consumers, producers, and policymakers alike on the margin between farm prices and consumer prices. All these groups point to the middleman and say "marketing costs are too high."
>
> "Several factors common to all food marketing systems lead to this impression, whether it is true or not. First, the marketing system is the narrow point in an hourglass-shaped distribution pattern which first concentrates the crop sales from millions of farmers and then disperses the food to millions of consumers in the time, place, and form in which they want it. Politically, millions of farmers or millions of consumers are forces to be reckoned with; the hundreds or thousands of middlemen usually are not."
>
> "Second, operating as a middleman is a very risky business even in developed countries where information is more rapidly transmitted. In developing countries the risks are even larger. Only the highly skilled can survive for very long in such circumstances, and the economic return to these skills is large. In short, many middlemen are quite rich, in sharp contrast to the poverty of both their supplying farmers and consuming households. It is a very short step between the observation of rich middlemen and the conclusion of high-cost, inefficient, and monopolistic marketing. The conclusion, however, is wrong as a logistical necessity, and, in a broad array of developing countries, wrong as a matter of fact."
>
> "A third reason for the strong perception that marketing margins in developing countries are too high is that **they are high**. Marketing costs are high when: roads and communications are poor, interest rates are high, storage and transit losses are high, and when processing facilities are poorly maintained and operated because of difficulties in obtaining working capital or spare parts. In other words, marketing margins are high because the real costs of marketing are high. It is not a matter of short-run private inefficiency and monopoly profits accruing to a few greedy middlemen." (1983, p.189).

a. Government Motives

Faced with the "**food price dilemma**", espousing common misperceptions about how competitive food markets operate, and possessing an almost universal belief that public interventions are superior to market forces in resolving allocative problems for their particular society, African governments frequently seek to intervene directly in food markets. These interventions are almost always justified as contributions to the following societal objectives:

- Efficient economic growth;
- A more equitable distribution of incomes;
- Nutritional well-being;
- Food security and consumer protection; and/or
- Producer protection.

Pursuit of these objectives has been used to justify all manner of government interventions in agricultural markets in Africa over the last thirty years -- to the point where recitation of the objectives is akin to holy writ in most development plans. Only recently have some governments begun to realize that abstinence from such interventions may also be an effective policy alternative for achieving the same objectives.

One perspective in the literature sees these government market interventions as based upon broad concerns for achievement of legitimate societal objectives. The core belief is that competitive market forces alone cannot solve problems posed by "externalities" and, therefore, that certain public interventions are appropriate to correct these problems. In this view, the key problem lies in identifying the "externalities" correctly while avoiding overzealous pursuit of misguided policies based upon poor analysis of real market situations.

There is, however, an alternative viewpoint, most frequently expressed by students of political economy. It is summarized by Bates as follows:

> "An alternative approach would not view governments as agencies that maximize the social welfare. Rather, it would view them as agencies that serve private interests. And, rather than interpreting government policies as choices made out of a regard for the public interest, it would instead view them as decisions made in order to accommodate the demands of organized private interests. This approach would view public policy as the outcome of political pressures exerted by groups that seek satisfaction of their private interests from political action."
>
> "Particularly in the areas of food price policy, this approach has much to recommend it. Put bluntly, food policy in Africa appears to represent a form of political settlement, one designed to bring about peaceful relations between African governments and their urban constituents. And it is a settlement in which the costs tend to be borne by the mass of the unorganized: the small-scale farmers." (1988, pp.345-346).

From this perspective, governments are seen as deliberately adverse to reliance on competitive markets and the price mechanism embodied in them because such reliance would mean that they would **lose control over the allocation of resources used to build political alliances and support**. Market interventions by public agencies are seen, therefore, as one tool among many used by politicians in their constant struggle

to satisfy certain political elites. Those elites are said to be urban coalitions of wage laborers, salaried employees, industrial employers, and public agency managers -- all of whom have vested interests in low food prices and stable flows of commodities in cities and towns.

These differing interpretations of government motivations in market intervention raise serious issues about the feasibility of market reforms in the medium-term. And ultimately, they proscribe very different paths for reform due to the tension between "solutions" based on economic logic and those based on political actions.

In reviewing the literature, one can easily identify cases where political ideologies dominate a government's market intervention strategy -- e.g. Ethiopia, Burkina Faso, and Zambia in recent years or Ghana in the 1960s and 1970s. For most African countries, however, such clear-cut dichotomies do not readily present themselves and, in any event, we believe that such determinations can only be made in the context of particular market cases after more empirical study. Our preliminary conclusion, however, is that many countries now recognize the deficiencies of past market policies and are searching for ways out of their current predicaments. Where such participants in the reform process recognize from the outset that they are searching for negotiated, "second-best" solutions to very difficult problems and are astute enough to strive for pragmatic compromises, not ideological victories, we see a constructive role for external donor agencies. Otherwise prospects appear to be rather grim.

b. Means of Intervention

While there may be considerable debate over why African governments intervene in agricultural markets, there is none over how they do it. The most common elements used in direct interventionist strategies are:

- Setting official commodity prices by administrative fiat -- and usually on a pan-territorial basis;
- Setting legal limits on marketing margins and transport rates for commodities;
- Regulating market flows by legal restrictions on commodity movements between towns and regions;
- Regulating market entry by designation of official marketing agents -- i.e. parastatal monopolies; licensed dealers;
- Maintaining public controls over food imports, exports and domestic buffer stocks;
- Manipulating taxes and subsidies for specific commodities or agents in the marketing system;
- Controlling the content in market information systems or restricting public access to such systems;
- Restricting access to credit, storage and other facilities for middlemen and agro-industrial processors; and
- Weakening or restricting legal processes for enforcement of contracts.

In most African countries the forms of market intervention and the institutions used to implement them are not that much different in markets for export crops versus those for food and livestock. There are factors, however, which make government interven-

tion in food markets much more difficult and costly. The first is that food crop production invariably involves a larger number of smallholder farms than those engaged in export crop production. Production of food crops and livestock also covers larger areas. A third is that smallholder households have more options in the disposition of their outputs. They can consume food within the household; trade it in local, informal exchanges; or sell it in formal markets -- official or parallel. In short, where farmers have multiple marketing options, they can more easily avoid the negative consequences of officially controlled markets.

This can be seen most vividly with cereals, where even highly interventionist tactics result in the government's capturing only 5 to 15 percent of domestic production in officially-sanctioned market channels. Meanwhile, parallel markets routinely handle larger flows at prices higher than those offered in official markets. These higher prices reflect the real value of scarce commodities and also compensate for the higher transactions costs of avoiding government agents.

Flows through official channels usually increase only with exceptional crop supply conditions, when parallel market prices fall below official prices. And then only for short periods -- until the government funding for price support runs out.

3. Input Markets

In many African countries, agricultural input markets operate under government controls and with external donor support. Private sector suppliers of technical inputs -- fertilizers, seeds, pesticides -- usually function in the market only as contractors to government agencies or donor agencies to mitigate their risks and limit their capital exposure. These suppliers often deliver only to central government warehouses; with secondary distribution to farmers delegated to local parastatals, regional development agencies, or other government institutions. The private sector is justifiably wary of operating at the retail level in situations where demand for inputs is highly seasonal; where input prices are fixed by government and do not adequately reflect real storage costs; and where, given the low purchasing power of rural households, there is a high risk of being stuck with unsold stocks.

Under such circumstances, the type of agricultural inputs to be made available to farmers is decided by administrative processes within government and donor agencies. The quantity of inputs supplied -- particularly where subsidies are involved -- is a function, not of market forces, but of the levels and timing of funding allocations for initial input purchases by governments and donor agencies. Finally, the actual availability of inputs at the farm level is often dictated by the relative efficiencies of public agencies in physically moving stocks through import channels and to rural areas.

It is not surprising, therefore, that many African farmers are ill-served by -- or completely excluded from -- existing input delivery systems. In almost every agricultural sector assessment we reviewed for this paper, one or more of the following problems are cited:

- Inappropriate inputs being ordered;
- Quantities being limited to sub-optimal levels by available public funding;
- Late deliveries to farmers; and,
- Excessive losses incurred in transit and storage.

What is needed in a situation where most agricultural production takes place under dryland conditions is movement toward broadly-based, decentralized input marketing systems; where private sector suppliers would be capable of servicing producer demands for inputs and where supplier profits would be directly tied to the quality of the services they provided. Such systems would -- in the medium-term, at least -- certainly raise the costs of inputs to producers, primarily because they would not be subsidized and, therefore, would have to reflect the real costs of input procurement and delivery. But, if the alternative is public systems which are high cost, even with subsidies, and still perform poorly, then there is an a priori case for substantial benefits to both producers and society from a movement toward privatization.

In addition to input supply problems there are also demand constraints within the marketing systems. Because of the lack of viable technological packages, farmers in many areas are not convinced that it makes financial sense to use the inputs which are available. These perceptions increase the risks to input suppliers and put an even higher premium on decentralized input supply systems linked directly to producer needs.

G. Indirect Consequences of Poor Government Performance In Overall Economic Management

Agricultural markets in Africa, as elsewhere, must function within broad macroeconomic environments created and maintained largely by national governments. In many countries, poor government performance at the macroeconomic level has diminished prospects for strong aggregate and sectoral growth, even where individual agricultural markets were relatively competitive. In the 1980s, four major concerns at the macroeconomic level have dominated and shaped many efforts at structural adjustment. They are inappropriate trade and exchange rate policies; poor planning and decision-making in resource allocation; inept organization and management of the public sector; and, finally, incoherent or inappropriate tax and subsidy policies.

1. Inappropriate Trade and Exchange Rate Policy

In 1981, analysts at the World Bank in presenting their agenda for accelerated development in sub-Saharan Africa concluded that:

> "Trade and exchange rate policy is at the heart of the failure to provide adequate incentives for agricultural production and for exports in much of Africa" and that "the most striking similarity in the trade and exchange rate policies of African governments has been the tendency to let real official exchange rates become overvalued because of higher inflation at home than abroad." (World Bank, 1981, pp. 24-25).

The failure of governments to resort to currency devaluations as a response to foreign exchange scarcities has generated countervailing pressures to use other macroeconomic instruments to restrict imports and conserve foreign exchange. More and more countries were seen to impose higher tariffs, quotas, and bans on "nonessential" imports. Quantitative restrictions were the favored means of import restriction.

The World Bank analysts state that:

> "This dependence on import restriction has been reinforced by the import-substitution industrialization policies pursued by most African governments. Quite

> separately from balance-of-payments policy, governments have tried to promote industrialization through tariff protection for local industry against competing imports. This policy has been combined with low tariffs or duty-free imports on capital equipment and raw materials. With the recurring balance-of-payments crises of the 1970s and the resort to quantitative restrictions, foreign exchange management and industrial policy have interacted to intensify the bias toward import-substitution industrialization and use of quantitative restrictions as a protective device. Thus, an increasing number of African countries have been moving toward a trade and foreign exchange regime with the following characteristics: licensing of most imports; quotas or a complete ban on imports that compete with local production; automatic protection for any import-substitution industry; and priority allocation of essential imports to capital goods, raw materials for local industry, and food." (Ibid, p. 25).

While such trends appeared to have been reversed in the African countries adopting strong macroeconomic adjustment programs in the mid-1980s, they still persist in many other countries and continue to introduce significant distortions into local markets and directly bias the incentive system against agriculture. They do this in several ways. First, they force farmers to purchase high-cost local agricultural inputs, chiefly farm implements. Second, they raise the cost of the consumer goods purchased by rural people. Third, such systems serve to hold down the prices farmers receive for their export crops. And, finally, the combined effect of overvalued exchange rates and inadequate tariffs on food imports encourages an increasing dependence on food imports at the expense of domestic production.

2. Poor Planning and Decision-making in Resource Allocation

Another requirement for more efficient resource use is strengthened economic decision-making capacity in the public sector. Experience indicates a pressing need to reinforce procedures and institutions in three key areas: the generation of development projects; the evaluation of rural sector investment proposals by central government coordinating agencies (finance and planning ministries); and the formulation of economic policies.

Project aid is still the dominant use for AID resources in most of Africa. With few exceptions, local government capacities to plan and manage these projects are weak. Poor project preparation, management difficulties in implementation, and the relatively short project lives for many of these efforts reduce their effectiveness. More importantly in the present context, projects -- and, particularly, those defined in geographical terms -- can seriously distort adjacent input and output markets by offering differential access and benefits to certain client groups, while excluding others simply because they are "outside the project zone". The other major problem with this mode of assistance is that the marketing systems -- set up with so much effort during a project -- often collapse soon after project assistance is terminated.

For these reasons, we strongly applaud AID's efforts since the mid 1980s to move away from dependence on projectized assistance as the primary vehicle for development funding. Recent emphasis on program sector grants, economic policy reform programs (EPRP) and the like seem to us to be more in keeping with needs for improved agricultural markets.

Even more essential than the ability to generate good projects is a government's capacity to distinguish projects which are good from those which are not so good. This

is the vital screening function which involves appraising government investment proposals, and is the essence of setting priorities.

In practice, planning agencies in Africa have generally played a minor role in the vetting of projects. They have been engaged mainly in the elaboration of medium-term plan documents. But during the process of putting them together, planning agencies rarely have the opportunity to systematically appraise projects proposed by spending agencies. As a consequence, planners frequently find it necessary to include in the plan most projects submitted to them by the technical ministries. This means that selection of investment proposals for financing -- i.e. the real setting of priorities -- is made outside the planning process, usually in the Office of the President or by the finance ministry during the budget process. But ministries of finance typically are forced to focus on containment of aggregate expenditures and less on their "quality". Reliance on decision-making at the presidential level, without detailed staff work by the planning ministries, often results in the politization of the end-decisions based on non-economic criteria. Finally, many technical ministries, eager to press forward with their sectoral programs, present finance and planning ministries with faits accomplis -- expenditure commitments made outside the planning processing, often in collaboration with foreign aid donors.

These deficiencies have two major consequences for markets in Africa. First, in government after government, capital flows to investment projects and related claims on resources are passed through the public sector's administrative machinery without proper evaluation. Second, due to the general lack of rigorous economic analysis, many fundamental policy questions such as price-setting for basic staples, wage changes in the public sector, the granting of tax concessions to new investors, and the use of subsidies to producers and consumers are decided on the basis of inadequate analysis.

3. Inept Organization and Management of the Public Sector

Economic progress in any society requires that resources be used efficiently by organizational units in both public and private spheres. This applies not only to the production of goods within sectors, but also to the provision of services, such as transport and other marketing functions. To this end organizational structures and the important role of management must be continually examined.

There is considerable evidence that smallholder farmers in Africa are excellent managers of the resources they command. Private agents within agricultural marketing systems have also generally been shown to be efficient -- i.e. they have relatively low transaction margins on market flows -- given the risks and constraints they face. Governments, on the other hand, when intervening in agricultural markets, have generally suffered from a lack of experienced managers capable of running large organizations.

In many countries, parastatals present the most urgent and visible problems of inept public sector management. There are many reasons for their poor performance. Managerial and technical capacities are not easily established even though parastatals theoretically have flexibility in their ability to operate and, specifically, to hire staff autonomously. Managers and technicians frequently come from the civil service. Budget and account systems tend to be taken from the government administration, and the budget analysts, auditors, where present, and accountants also tend to come from the government sector, so procedures end up very much like those of general government administration. In addition, parastatals are often undercapitalized and starved of

working capital. And, most critical, policy-makers have found it difficult to accept a "non-political" role for parastatals. They are pressured to increase staff numbers, to deliver outputs at low prices to key groups, and to shape investment decisions to criteria other than those of economic and financial returns.

Most African governments strongly resist the complete abolition of parastatals on socio-political, if not economic grounds. Hence many market reform programs have been forced to accept the consequences of their continued existence. In such cases, reforms need to include specific action plans for modification of the conditions under which parastatals are permitted to operate. Among the key elements to consider in such programs are:

- Elimination of conditions in parastatal mandates which confer de facto or de jure monopoly powers and preclude effective private sector competition;
- Clear definitions of remaining conditions of parastatal mandates and terms of reference;
- Explicit understandings between government and the parastatal entity which define annual financial commitments according to agreed long-time objectives;
- Incentive systems conducive to efficient performance;
- Independence in day-to-day management;
- Independent personnel management;
- Proper accounts and records, with provisions for regular and rigorous external auditing; and
- Acceptance of the principle that under certain circumstances liquidation of an enterprise may be desirable.

4. Incoherent Tax and Subsidy Policies

World Bank analyses of many agricultural enterprises have shown that the mix of taxes imposed and subsidies granted often results in high net levels of taxation. This often means that agricultural production is disadvantaged vis-a-vis domestic industrial production and that domestic agricultural commodities are relatively underprotected vis-a-vis imports -- i.e. cereals, milk powder, meat. This incoherence in the mix of policies applied to the agricultural sector has obvious implications for producer incomes and the incentive structure for investments in agriculture.

A second problem is that government intervention in commodity markets to protect consumers often takes the form of direct subsidization of food prices and indirect subsidization of agro-industrial processors. These consumption subsidies are often untargeted. And, in their formulation, little consideration is given to alternative methods of achieving the stated public objectives -- such as direct transfer payments to targeted groups.

A third problem concerns input subsidies on everything from fertilizers, seeds and pesticides to irrigation water and interest rates in targeted credit programs. First, such subsidies often are conferred on certain privileged recipient groups. Second, the artificially low prices encourage these groups to use higher levels of inputs than can be justified in economic terms. And, third, the rationing mechanism for input availability

in local markets becomes the amount of government funding allocated for the particular subsidy, and not the interplay of market forces within the wider economy.

H. Instability of African Governments

Wars and other regional conflicts have had severe impacts on the economies of many African countries in the past thirty years. The current problems in Sudan, Ethiopia, Angola and Mozambique are but recent examples of the disruptions caused by civil strife.

The shortage of well-qualified personnel is a further source of instability in African markets. High lateral and upward mobility of key people is a de-stabilizing influence on the organizations in which they work. Centralized decision-making and inadequate training of second-tier management serve to aggravate this problem. Since effective transactions in Africa are often dependent on personal relationships, it is difficult for new managers -- even those with the requisite skills -- to re-establish the working relationships necessary for effective operations. Hence with the loss of a key individual, the basis for operations may completely break down.

The absence of a sound legal basis for enforcement of contracts and resolving differences is a major disincentive to normal business relations in African countries. It effectively precludes the development of "arms length", impersonal business operations and increases the risks involved in operations based wholly on personal relationships.

I. Africa's Changing Position In World Markets

Africa has experienced a prolonged decline in its position in world markets. This decline is conventionally attributed to the inclement weather which characterized the 1970s and early 1980s, and a deterioration in Africa's terms of trade viz-a-viz the developed world. While the first factor is not disputed, there has been a significant change in the perception of how changes in world markets have influenced African export performance. This change is exemplified in two commentaries on these influences written four years apart.

In Toward Sustained Development in Sub-Saharan Africa issued in 1984, World Bank analysts stated that:

> "The international economic environment has been difficult for all developing countries during the 1980s. While world trade has been stagnant and commodity prices have declined, many developed countries have increased protectionist barriers for goods from developing countries. For sub-Saharan Africa, restrictions on sugar and livestock imports by these countries have been particularly damaging. These external factors have aggravated the long-term economic deterioration in Africa.
>
> "For export crops, Africa's total volume expanded by about one percent a year over the 1980-1982 period – an improvement over the decline during 1970-1980. However, for most crops, the fall in world market shares that started in the 1970s continued in the 1980s. These declines have occurred in commodities in which Africa has a comparative advantage and which are likely to remain its main potential source of foreign exchange earnings. Africa's market share of oilseeds has fallen steeply, caught between rising domestic demand and inadequate incentives to export; so has that of tea, bananas, cotton, and coffee. Some progress was made in tobacco, sugar, and sorghum. Given the slow growth in world demand

> projected for primary exports over the next decade, African countries can expand their exports only if they can utilize their comparative advantage effectively and increase their market share." (1984, p.11).
>
> "On top of stagnant or declining exports, African countries faced adverse terms of trade during the early 1980s. Between 1980 and 1982, prices of non-oil primary commodities declined by 27 percent in current U.S. dollar terms. The loss of income due to deterioration in terms of trade was estimated at 1.2 percent of gross domestic product (GDP) for all of sub-Saharan Africa, with middle-income oil importers suffering the biggest loss (3 percent of GDP), oil exporters a slight gain (0.5 percent of GDP), and low-income countries a loss of 2.4 percent per GDP." (Ibid, pp.11-12).

A more recent appraisal of the export marketing situation by analysts at The Economist reads as follows:

> "A common belief is that in the 1980s the world economy has been crueller to Africa than to other regions -- in other words, that Africa's export prices (which are set in world commodity markets) have fallen by more than average ones. This is true for the oil exporters; for the rest (which are greatly helped by cheaper oil) it is not. Africa has been lucky in its mix of (non-oil) commodities. Their prices have fallen since 1980, but by only half as much as the world average. Prices of tea, coffee and cocoa (which count for a lot in Africa's exports) have stayed relatively high, while cereal prices (which matter much less) have tumbled.
>
> "If the decline in export earnings was not due mainly to lower prices, it must have been due to poor export volumes. So it was. Africa's non-oil export volumes have been roughly static since 1970; over the same period the export volumes of all developing countries have more than trebled. To put this another way, if Africa had merely held onto its 1970 share of the non-oil commodities exported by developing countries, its export earnings would have been $ 10 billion higher in 1987. That is as much as the region's annual bill for debt service." (The Economist, March 4, 1989, p. 63).

In sum, then, the major conclusions are that:

- Some but not all of Africa's changing position can be attributed to the prolonged periods of poor weather experienced during the last ten years;
- While booming world markets for primary commodities in the 1970s would have certainly brightened prospects for African development, sagging world commodity markets in the 1980s did not penalize African countries more harshly than other countries in other regions;
- African countries lost export market shares for many commodities in which they have had a comparative advantage in the past; and
- The principal reasons for this decline in export position were again inappropriate domestic economic policies and lack of technical innovation in agricultural enterprises.

VI. STEPS IN THE MARKET REFORM PROCESS

Effective market reform is contingent on a combination of timely policy analysis, a consensus between government and policy analysts on the issues to be addressed in the

reform process, and political support for implementation of the reforms. The reform process encompasses a much wider gamut than the markets themselves.

A. Appraisal of the Macroeconomic Environment

A broad appraisal of government macroeconomic policies is the logical point of departure for market reforms. An economic environment characterized by over-valued exchange rates, high inflation, and inappropriate government taxes and subsidies will limit the effectiveness of any attempt at "getting prices right".

With the World Bank/IMF focus in the 1980s on structural adjustment programs and other agreements, high quality macroeconomic studies already exist for many African countries. To the extent that these studies have been reviewed and macroeconomic adjustment programs have been set in place, this first step in the market reform has already been made.

B. Assessment of the Agricultural Sector

The second step in the reform process should be an in-depth assessment of problems in the agricultural sector. Conclusions from the macroeconomic analysis will guide an initial assessment of whether or not these problems are market problems. This clarification is essential if analysts are to understand the complete institutional context within which markets must function. It also leads to more realistic expectations about the feasibility and probable outcome of any market reform effort. Against this wider background, the sector assessment should then proceed to identify and prioritize market problems.

C. Solidifying Government Support in Pre-Reform Planning

Irrespective of the results generated by the two preceding analyses, market reform will not occur without government support. The third step in the reform process is to develop a working consensus between key political figures, policy analysts and donor representatives on the initial problems to be addressed within the agricultural sector and a priority ranking of their importance.

If markets are seen as one of the major sectoral problems, agreement should be reached on the nature of current market constraints; the extent to which they are a major source of disincentives to domestic production and consumption, and in international trade relationships; and the proper role for government in market reform. A further prioritization of specific market problems should then be made which accurately reflects the economic and political concerns of government officials and the donor community. Without this initial consensus on issues and priorities at the pre-reform stage, there is little point in initiating the reform process. Much of the difficulty experienced by previous market reform initiatives is attributable to inadequate recognition of the importance of this third step and failure to pursue it actively.

D. Rapid Appraisal of Markets

Where there is consensus on economic and political concerns, and several markets have been identified for priority consideration, the fourth step taken should be a series of focused market appraisals to confirm working hypotheses about each market and further order priorities between markets. Once again, these appraisals should consider

both the economic and political consequences of market reform. The consequent prioritization of market problems to be addressed should consider: the concerns of producers and consumers, consequences in both rural and urban environments, and an assessment of the magnitude of responses to be expected from specific reforms.

At this stage in the reform process we see great value in use of the rapid market appraisal techniques developed by the AID-sponsored AMIS Project. (AMIS Project, 1988; Holtzman, 1986).

E. Selection of the Priority Market for Reform

Rapid appraisal of several key markets leads to the next step in the reform process -- identification of the priority market. Appraisals will give the participants an informed basis for comparing the relative severity of problems identified across several markets. They will also provide detailed conclusions as to critical information gaps to be addressed by subsequent collaborative data collection and analysis.

F. Collaborative Establishment of the Reform Agenda and Phasing of Actions to be Taken

Having completed the preliminary steps and selected the priority market for reform, several activities must proceed simultaneously. They are:

- Specification and phasing of the agenda for market reforms to be undertaken;
- Installation or strengthening of data collection and processing systems to track these reforms over time and space -- i.e. to identify both benefits and losses, in all sectors, during the reform process and to identify "second-generation" problems in implementation as they arise;
- Development of local working capacity through training in both analysis of market problems, formulation and evaluation of alternative policies; and management of reform policy actions; and
- Providing formal mechanisms for senior government and donor officials to periodically review and modify the working hypotheses underlying reforms and to resolve problems in their implementation.

G. Implementation of the Reform Agenda

The seven step process outlined above is different in concept and phasing from that used in many market reforms in Africa. It presents a coherent flow of activities in market reform. The process puts great stress on the need to inform -- and be informed by -- local decision-makers at every step. It emphasizes building a collaborative working consensus around each policy action to be undertaken. And, implicitly, it points out the likely costs and time involved in the "pre-reform" stage of the process.

It does not stress linkages between policy reforms and donor funding levels or access to programs like PL-480, because we believe that market reforms in Africa can only be affected and **maintained** where local policymakers and the affected market participants are convinced of their merit. This consensus, if it is to last, must be a function of participant education about and experience with policy reforms over time. Coercion by donors is a poor substitute for patience and modesty in bilateral and multilateral relationships. Conversely, the willingness of host governments to seek this consensus

must be critically appraised. For as African governments bear the ultimate responsibility for implementing these reforms, they must also bear the consequences for not implementing them.

VII. SUGGESTIONS ON HOW AID CAN ASSIST THE MARKET REFORM PROCESS

An economically efficient market is one where market conditions approximate those of the "perfect competition" model. Impersonal, "arms-length" transactions are the norm, particularly where market expansion leads to a larger number of transactions. Under these conditions a smoothly functioning marketing system depends on the simultaneous availability and interaction of:

- Adequate and efficient infrastructure for communications, transportation and storage;
- Common grades and standards to facilitate trading at a distance;
- Legal codes to enforce contracts between market agents;
- Working capital for private entrepreneurs for: financing commodity purchases; transport; short-run inventory storage; and processing operations; and
- Market information systems to keep all market participants, from farmers to consumers, fairly and accurately informed about market trends.

Donor agencies can play a significant support role in making markets in Africa more efficient and better able to satisfy the needs of market participants. This can be accomplished through actions which influence **policy setting** and, subsequently, **policy implementation**. We have listed below our principal suggestions for AID involvement in market reforms.

A. Policy Setting

1. Maintaining Pressures for Macroeconomic Reforms to Provide the Context for Market Reforms

Maintaining the macroeconomic and sectoral structural adjustment programs which have been put in place in many African countries is absolutely essential to prospects for specific market reforms. These programs set the context within which any market reform process will operate. Any departure from efforts to maintain properly adjusted rates of foreign exchange, control government expenditures, set limits on fiscal and monetary policies, and reduce inflation will only reverse the progress that has been made in the 1980s and diminish the impacts of market reform programs.

2. Assisting Governments in Determining Their Proper Role in Markets

In initiating policy reform efforts in Africa, the hardest (and most time-consuming) task for analysts is listening to policymakers' real concerns and understanding their reasons for intervening in particular markets. Only after such concerns and reasons are understood can analysts and policymakers reach mutual agreement about the proper role for government in a particular market. As Timmer et al explain:

> "For all of its efficiency in allocating economic resources, a competitive market economy cannot accomplish some important social goals without careful govern-

> ment intervention. Some of these broader goals also relate to economic efficiency; others concern the distribution of income, nutritional well-being, and the security of the society ....."

Even competitive markets with efficient price formation fail to provide a socially efficient allocation of resources if externalities exist within the economic system -- i.e. pesticide use for private gain at public expense; soil mining and erosion; irrigation and spread of diseases. The existence of such externalities and the failure of market-determined outcomes to provide efficient solutions provide wholly legitimate justification for government interventions in agricultural markets. This is an area where good analysis is essential as input into public policy making because, as Timmer et al again point out:

> "The tension between intervening in markets and letting markets work is very strong in most countries. Intervention is frequently predicated on the existence of market externalities. In the context of a careful empirical understanding of the quantitative impact of such externalities, their existence does call for specific government intervention. Typically, however, such interventions call for a scalpel, rather than a sword." (1983, p.155).

3. Determining Priorities in the Provision of Public Goods

As we have seen above, private market economies often fail to provide adequate levels of "public goods" -- i.e. agricultural research, roads, education, market information. These "public goods" all yield benefits to the population at large that cannot be priced and directly charged to the users by the private suppliers. A legitimate role for government is to use general tax revenues to provide such public goods in socially optimal amounts.

Since external donor agencies in Africa play such a large role in financing public investments we believe they have a concomitant responsibility to assist governments in developing more objective criteria for determining which public goods should be provided. With respect to improving agricultural markets, two types of public goods are essential: those which lead directly to increased allocative efficiency in markets; and those which support development and adoption of improved technology.

Our review of the existing literature leads us to believe that governments and supporting donor agencies wishing to improve agricultural markets should put primary emphasis on agricultural research, roads, communications networks, and education -- both broad rural education programs and more specific instructional efforts.

More productive agricultural research is our first priority because it provides the only real way out of the **price dilemma**, through growth in productivity. Increased output will lead to lower food prices and so reduce the discrepancy between the needs of farmers (higher incomes) and consumers (lower food prices). However, it must be recognized that this is a long-term investment; the returns from which are difficult to measure effectively even in the medium-term because of the necessary lags between initial experimentation and broad farmer adoption of viable innovations.

Improved road networks and better dissemination of market information are our second priority. The former provide better links between markets -- i.e. they reduce the present high degree of market segmentation; increase flows of goods and services; and lower transactions costs. However, investment decisions on new roads must be based upon rigorous economic evaluation, and all road investments must make adequate

provision for recurrent maintenance expenditures. Any commitment to improved road networks must also include a concomitant commitment to liberalize the importation of vehicles and spare parts by the private sector.

The dissemination of market information ensures that all market agents have access to the information required to make well-informed marketing decisions.

4. Strengthening Legal Mechanisms for Enforcement of Contracts

Lack of effective legal mechanisms for enforcement of contracts is a strong disincentive for private sector agents in many African markets. The need to conduct all market interactions on a face-to-face basis and under conditions of personal trust inevitably reduces the number of active market participants. More competitive and complex markets must have mechanisms which allow participants to deal with each other impersonally and over space, and to have resort to impartial legal mechanisms to resolve disputes among participants. This is a sine qua non for agro-industrial enterprises and/or joint ventures involving external foreign investors; but it is equally the case where market reforms are changing fundamental relationships between public and private sectors.

5. Improving Management of Foreign Assistance Resources

Just as with governments, external donor agencies often influence and distort the conditions of agricultural markets. For example, donors -- in their anxiety to "get things moving" -- often create project facilities to provide agricultural inputs, supply "targeted" credit, or market project outputs. These facilities often ignore private marketing systems already in place or substitute public institutions for private ones. Most such facilities are, by their nature, temporary -- i.e. they collapse as soon as project funding is withdrawn. In the meanwhile, they tend to compete unfairly with private entrepreneurs and falsely raise producer expectations.

Concessional food imports can also distort local markets where imports are based primarily on commodity availability in the donor country and are not tailored to actual requirements of targeted recipients in the receiving country. The European Community, for example, has regularly "dumped" powdered milk, dairy beef, and other commodities in African countries to the detriment of local producers. A more recent problem for markets is the donor tendency to import food commodities and agricultural inputs as a mechanism to develop local currency resources.

B. Policy Implementation

1. Assisting in Analysis of Specific Markets

Effective participation in any market reform process means, in the first instance, providing the resources for competent economic and socio-political analyses of the market(s) in question. AID has already been effective in providing this type of assistance through the AMIS project and in the context of other programs. Assistance at this level, in our minds, forms the basis for any subsequent market reforms.

2. Removing Specific Impediments to Competition and Decentralizing the Markets for Commodities, Inputs and Financial Services

Policy analyses should lead directly to the identification of specific impediments to competition in agricultural markets. Removal of an impediment might be a relatively

low cost proposition -- e.g. lifting a monopoly by changes in existing legislation -- or as complex and long-term as dismantling and abolishing a parastatal or building a new road network.

The key to assistance here is correctly identifying the impediments to competition. If such impediments are at the government level, AID has sound institutional mechanisms for transferring assistance resources to Africa. However, when impediments call for moving beyond AID's traditional government-to-government relationship and dealing directly with private entrepreneurs -- such as, for example, in the provision of working capital through private financial institutions, we believe there is still considerable scope for AID to develop more flexible working relationships directly with the private sector.

3. Increasing Flows of Market Information

Timmer et al sum this type of assistance up as follows:

> "... market knowledge is market power. One of the most important steps governments can take to improve the fairness of market price formation so that it discriminates less against small farmers at one end and the consumer at the other is to provide these individuals with timely and accurate information about actual market conditions. Such information enables them to bargain more equally with purchasing agents or retailers who are naturally intent on widening their margins whenever possible. More equal balance of knowledge provides a more equal distribution of the gains from efficient market price formation." (1983, p.154).

In this regard, the problem is not that information is not available, or that it does not flow between market participants. It is simply that such information is held asymmetrically. Small farmers and low income households are too often at a disadvantage in market transactions.

Inadequate market information can no longer be attributed only to a lack of physical infrastructure. While few African countries have the extensive telecommunication facilities found in more developed countries, and television and newspapers are available mostly to higher income urban dwellers, almost all countries now have comprehensive radio networks available to urban and rural inhabitants alike. What remains is to link national and regional radio networks to high quality and impartial agricultural information services. For instance, daily or weekly radio broadcasts of prevailing conditions in key regional markets, where real prices were reported and products were identified in terms buyers and sellers actually use, would be a simple and cost-effective means of disseminating market information to all market participants. Where there is intraregional trade, as in the case of the cattle trade between the Sahelian and coastal countries in West Africa, periodic reports of price/quantity conditions for cattle in terminal markets, like Abidjan, Accra or Lagos, would assist producers -- and well as market intermediaries -- to make marketing decisions and adjust production strategies.

4. Training for Participants in Market Reform

The need for training participants as a component in the market reform process appears to us almost self-evident. In our opinion, the funding of participant training programs at all levels is one of the most intelligent and most successful things American foreign assistance monies have accomplished in Africa. If anything, these programs should be expanded specifically to include more participants whose primary

orientation is toward private sector entrepreneurship and/or employment; but we see needs for training at several different levels.

- Education of government officials as to the role of competitive markets in their economies.
- Training in market data collection methods; data processing and economic analysis; and, most importantly, in policy formulation and analysis of alternative policy options.
- Managerial and financial training for executives and staffs in public entities charged with market responsibilities.
- Training in business and financial management for new market entrants from the private sector.
- Training in export promotion and commodity marketing for both government and private sector agents.

5. Improving Market Participants' Access to Working Capital

One of the principal objectives of market reform in Africa is the increased participation of agents from the private sector. One of the major "second-generation" constraints in the reform process is that both potential new market entrants and existing market agents wishing to expand their operations lack access to the short-term working capital needed to: procure commodities and stocks, expand client services, increase warehouse space, and improve transport.

On the one hand, expansion of private sector participation simply cannot occur, in our opinion, unless adequate sources of working capital are found for new market entrants and entrepreneurs wishing to expand their operations. While the so-called "informal" credit markets in African countries might bear some of the burden for this expansion, it is facile to assume that they can finance it all.

On the other hand, AID -- and virtually all other donors -- have had a truly miserable track record mounting and sustaining viable credit programs through public entities in Africa. Lack of viable private -- or, at least, independent -- financial institutions in most African countries continues to be a major stumbling block in provision of large flows of necessary capital to the private sector at competitive and market-determined interest rates.

We see AID assistance in increasing both the flows of and the access to working capital for small businesses as critical to realization of the full benefits from market reforms.

6. Assisting in Transfer of Technology

Market reforms create new situations for market participants and so provide new incentives for innovation. Innovation means new ways of managing market relationships and also new technologies for the transportation, processing, storage and sales of agricultural inputs and outputs. New technologies for the processing and transformation of food products may also be appropriate. Where new incentives result from market reforms, entrepreneurs begin searching more diligently for a whole gamut of new technologies and AID can materially assist these innovators by supporting such transfers.

7. Role of Women in Agricultural Marketing

There is a growing body of evidence that the marketing activities of women make a significant contribution to household welfare, particularly in terms of child nutrition. These activities can be encouraged by helping to remove those barriers to market entry which particularly affect women -- namely lack of working capital and transport.

8. Encouraging Foreign Investment in Joint Ventures and Other Collaborative Market Activities

Effective market reforms significantly improve the potential for mutually advantageous business relationships with foreign investors. AID can promote these relationships by establishing information networks for foreign investors interested in a particular industry or country. Similarly, more attention should be given to promoting and establishing linkages between African exporters and importers from the developed nations. An important factor in promoting such endeavors is government removal of restrictions on imports and exports by the private sector. In this regard, governments need to encourage trade incentives which function automatically and are non-discriminating in application. They also must be much more alert to the problems posed by bureaucratic barriers to expand trade.

Where markets are better integrated over space and time and competitive market forces are predominant, local entrepreneurs are forced to search for new ways to lower costs -- not because they want to but because they have to. Where governments are successful in fostering such market conditions and where they support a new and active partnership with the business community, AID's programs in private enterprise will be successful.

Annex A
Tools For Evaluating The Performance Of Agricultural Markets

Techniques for evaluating market performance are usually based on measures of market efficiency. These techniques differ in the type of efficiency measured, and in their requirements for data. A summary of these tools is presented below, according to the type of efficiency being measured. Where appropriate, the data requirements of comparable techniques are compared to provide better insight into their usefulness.

I. MEASURES OF PRICE EFFICIENCY

Time and Form Relationships allow measures of pricing efficiency for commodities which require storage or processing. The basic measure assumes that the storage or processing margin is related to the costs of the service by the following formula:

$$P(\text{sale}) - P(\text{harvest}) = \text{Profit}$$

$$\text{Cost of Service}/\text{Profit} = 1$$

Inefficiency is indicated by a ratio which deviates from 1 by a large margin.

A variant of this approach compares the spatial distribution of prices with relevant transport and handling costs. Prices 200 kilometers from a central marketplace should be roughly equal if there are no impediments to transportation. This approach is intuitively appealing in that the expected results are clear and satisfy a feeling for equity. However the perfect competition model on which this methodology is based mandates no excess profits in the long run. Hence the results are only meaningful on average. In the short term (less than a year), seasonal price variations will invariably result in excess profits during one or more seasons. For these reasons these measures should be interpreted with considerable caution.

Estimates of the **Value of the Marketing Margin (VMM)** are a further variant of Time and Form relationships. The price differential between two stages in the marketing channel (e.g. retail prices (P_r) versus wholesale prices (P_w)) is used to determine the return to the resources which are used to effect this market function.

$$VMM = (P_r - P_w) * Qty$$

Comparisons of the VMM with the real cost of performing these services provides a measure of the extent to which these services add value to a given product. Comparisons across commodities add a useful perspective to the evaluation.

Price Transmission analysis examines the rate at which a price change at one market level (say wholesale) is transmitted to the next (retail) level. In a well-functioning market, most if not all of the price change will be transmitted in the current week. Delays in price transmission beyond this interval can be interpreted as market imperfections.

To this end price data are analyzed using a statistical approach known as distributed lags, as follows:

$$RP_{W0} = WP_{W0} + WP_{W-1} + WP_{W-2} + WP_{W-3} \ldots WP_{W-n}$$

where RP_{WO} is the retail price in the current week and WP_{W-1} is the wholesale price in the preceding week.

The statistical results are easy to interpret since the coefficient on each term is the percent of transmission which occurs during the transmission period. Specification of an appropriate transmission period relies on the analyst's expertise and knowledge of the market. Often additional variables are added to the right hand side to adjust for changes such as wage increases (see e.g. Hall, et al.)

Profit Margins indicate whether profits are excessive under given market conditions. The Lerner Index, which is a measure of deviations from allocative efficiency, is the conventional tool used for this type of analysis.

$$M = (\text{Price} - \text{Marginal Cost})/\text{Price}$$

Perfect competition is associated with an index value of M=0. Large deviations from zero indicate allocative inefficiency.

Of the data needed to implement these price efficiency analyses, prices are most readily acquired and/or available. However reliable time-series data may be difficult to obtain in sub-Saharan Africa. Cost data on processing and storage are difficult to obtain under any circumstances, especially if they must incorporate the risk faced by market agents. Given these factors measures such as the VMM and price transmission, which can be generated solely from price data are likely to be the most appropriate. Where cost data can be obtained, time and form relationships and profit margins can be readily derived.

II. MEASURES OF TECHNICAL EFFICIENCY

Firm level measures of technical efficiency provide insight into the productivity of a firm relative to some technical optimum (**output/output ratios**), or measures of the physical efficiency with which resources are used to produce output (**input/output ratios**). Engineering estimates of these technical relationships are often used as the benchmark for comparisons.

A more appropriate benchmark is the **Minimum Operating Size (MOS)** of the firm, obtained by determining the long-run average cost curve (LRAC) for the industry. It is a measure of the least cost operating conditions for a given industry or market. This measure also provides important information into the potential for economies of scale, and the extent to which they are being obtained.

The difficulty of obtaining reliable cost and return data limits the application of these techniques. As the markets are often characterized by a small number of firms it is even more difficult to derive a LRAC curve which effectively depicts the industry norm. Analysis of this nature may necessitate a broader regional basis, covering several Sub-Saharan countries.

III. MEASURES OF ECONOMIC EFFICIENCY

The most comprehensive economic tool for evaluating the benefits and costs resulting from adjustments in the marketing system is **Partial Equilibrium** analysis. Deviations from the competitive equilibrium point can be measured in terms of producer and consumer surplus, and the dead weight loss to society of different pricing and marketing policies.

Simpler measures of economic efficiency can be derived by using border prices. For instance **The Domestic Resource Cost (DRC)** is obtained by computing the value of domestic resources used to earn or save a unit of foreign exchange. When both the value of domestic resources used and the value of product being produced are expressed in border prices, then the **Net Economic Benefit (NEB)** is obtained. The main determinants of the DRC and the NEB are the relative crop yields and border prices. Consequently where the land and labor requirements of different crops are similar, these underlying measures may be adequate for determining comparative advantage (Scandizzo and Bruce).

Several tools are used to measure the incentive/disincentive effects of price regulation, taxes and subsidies on the marketing system (Scandizzo and Bruce, pp vii). The **Nominal Protection Coefficient (NPC)** is the ratio of the domestic farmgate price to the border price. A similar measure, **Effective Protection Coefficient (EPC)**, takes into account the effects of protection on both traded outputs and inputs. A coefficient less than one indicates disincentives to agricultural production. Where purchased inputs are a small proportion of the value of output, then NPCs can be used instead of EPCs. (Scandizzo and Bruce, pp. viii).

Of these measures the DRC and NPC ratios are the easiest to derive. Partial equilibrium analysis has extensive data requirements and requires considerable technical skill.

IV. MEASURES OF PERFORMANCE CRITERIA FOR THE MARKETING SYSTEM

Concentration Ratios (CR) describe the extent to which a small number of firms dominate a particular market or industry. The rationale is that industries with high concentration ratios will tend to make joint output and pricing decisions, even in the absence of expressed collusion. As a result, prices and profits tend to be higher than in competitive industries.

Concentration begins to impact profits when the top four firms control 40-50% of the market. (For literature review see Marion). Market dominance of this magnitude or greater may be taken as a basis for hypothesizing excessive prices, although factors such as the size of the market and economies of scale must also be considered.

Regression analysis may be used to verify the extent to which concentration ratios versus other factors impact prices and profits. Models tested with regression analysis are of the form:

Profit = f(Concentration, Size Economies, Advertizing)
or
Prices = f(Concentration, etc.)

A positive and statistically significant sign on the concentration term is regarded as confirmation of the hypothesis that market inefficiencies exist as a result of high concentration ratios.

CR's can also be used as a benchmark to evaluate the degree of progressiveness in the industry. Studies have shown that firms in highly concentrated industries tend to be less progressive and slower to develop and/or adopt more efficient technologies (see e.g. Mueller, Culbertson and Peckman). This results in higher costs and ultimately higher consumer prices. Because of the spatial distribution of markets in sub-Saharan Africa, concentration ratios assessed on a regional basis may be more appropriate for certain commodities.

Concentration ratios are conceptually simple and appropriate measures, but they have extensive data requirements. In particular data on firm profits and market share are very difficult to collect without elaborate survey procedures.

V. MEASURES OF INSTITUTIONAL AND POLICY ATTRIBUTES

The institutional and policy conditions required for market efficiency can be ascertained by sector assessments. A useful measure of the performance of these policy initiatives is to compare actual performance against government objectives over a period of time (Holtzman et al.,pp 49). These policy objectives can be found in government planning documents such as Five Year Plans, or in agricultural sector policy statements.

VI. SUMMARY

It is apparent from the preceding outline that no single analytical tool meets the need for a comprehensive, unambiguous measure, which is suited to the limited available data. Effective analysis will rely on the use of a number of these techniques, which taken together should provide an acceptable evaluation of market efficiency.

Wherever possible these evaluations should initiate the collection of primary data. This should extend beyond the basic inputs such as prices, costs and profits to consumer surveys in order to evaluate the extent to which the market is responding to new trends in demand.

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