

AGRICULTURAL PARASTATALS

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A report in four sections:

- Section A: Agricultural Parastatals in Sub-Saharan Africa
- Section B: Egyptian Agriculture and Food Subsidy Policy
- Section C: Sociopolitical and Economic Dynamics of Public Policy in Food Deficit LDCs.
- Section D: Improving Production and Distribution of Foodstuffs in LDCs.

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OVERVIEW

Agricultural parastatals (or marketing boards) are pervasive throughout Sub-Saharan Africa. If measured against the criteria of economics alone, they should be abolished or changed drastically to reduce the gross inefficiencies they cause. If viewed from the political perspective they often serve the useful purpose of providing the means to govern effectively and should be retained. This report examines these conflicting viewpoints.

In West Africa agricultural parastatals were created by marketing cartels to gain control of the acquisition and distribution of agricultural (primarily export) products at the expense of the producers. In East Africa, the producers instigated their establishment to improve their economic position at the expense of marketing interests and consumers. In the Sahelian countries they were created under the auspices of United Nations agencies as regulatory and market organizing entities to operate in parallel but not in competition with the nascent private sector.

Since independence the governments of most Sub-Saharan African nations have used the parastatals to implement directly their policies. Section A shows that the parastatals impede the development process by creating disincentives to production by small farmers. The governments' policies require the parastatals to tax these farmers through artificially low product prices. They discriminate against the farmers through control of production inputs. They use their regulatory powers to reward political support and to punish opposition, thereby rendering the small farmers not only economically disadvantaged, but also politically impotent.

The parastatals' pricing policies, accompanied by manipulation of currency exchange rates create price distortions in

factor and product markets which lead to misallocation of resources and economic inefficiencies.

Their regulatory powers provide opportunities for the seeking of special benefits and favors by the politically influential. In most countries the special interest groups are members of the informal development coalitions that formed after independence. The membership includes the urban poor, politically potent because they are prone to riot over shortages or increases in the price of cereal staples and beer. Governments therefore buy their favor, or more accurately their lack of opposition, with low-priced food. Other coalition members are the state; the industrialists; the large, export oriented farmers and the tenants on government development projects. The politically impotent small farmers, the key to effective development in countries so heavily dependent on agriculture, are not coalition members.

In return for their political support or for withholding opposition, governments pay off the special interests through favors. The industrial interests get low-cost agricultural products as raw materials for agro-industries protected by tariffs and exchange rate inflation. Employers in industry and government get low-cost labor, because food is a wage good. Governments get tax receipts extracted from farmers in the form of low prices, to transfer to development projects benefitting urban interests. Corrupt bureaucrats and politicians obtain wealth from bribery to dispense privilege and by siphoning "rents" from transactions. The peasant farmers get to hold the bag.

The small farmer's reaction, described in Section D is to practice risk-aversion. In extreme cases he retreats to subsistence and barter. This reaction is the result of technical uncertainty caused by acts of nature over which he has no control, compounded by institutional uncertainty created by others. In large part, the 'others' are the parastatals, with their frequently changing and unevenly enforced regulatory powers. Such farmer

reactions of course result in economic inefficiencies, as do the payoffs to the members of the development coalition.

Therefore, from a purely economic viewpoint, the parastatals are harmful.

However, because they contribute to maintaining governments in power, the parastatals serve the useful purpose of contributing to stability in an inherently unstable area. They are therefore politically effective and have been and are likely to be retained by governments acting in their own self-interest, regardless of their economic inefficiency.

AID and other donors are therefore faced with the question of how to improve the effectiveness of development assistance in the face of the parastatals' continued existence. The problem becomes one of improving the economic efficiency of the recipient governments' policies while recognizing that these policies will continue to be implemented through agricultural parastatals.

Therefore it is recommended that AID cooperate with other bilateral and multilateral donors in efforts such as that ongoing in Mali, requested by Senegal and proposed for Kenya, to move the parastatals back to a role as market organizers, buyers and sellers of last resort and catalysts for development of private sector markets.

Section B involves an examination of the use of sophisticated mathematical models to estimate the quantitative effects of governmental policy on the Egyptian agricultural sector as a case study applicable to other LDCs. The study shows that the quality of the data available is too poor to support the use of econometric and linear programming models for policy analyses in such environments.

It is recommended therefore that qualitative simulation models, less data-demanding and less expensive be used by AID and that assistance be provided to LDCs, including Egypt, to improve the data bases.

In Section C, the socio-political and economic dynamics of public policy in food deficit LDCs are explored. This section explores the many ramifications of the formal (organizational) and informal (social and cultural) institutions of LDCs with respect to development. The basic point that emerges is that prescriptions for change must be rooted in and attuned to the institutional framework of each individual country. Because parastatals are an essential part of the politico-administrative structure in Sub-Saharan African LDCs, they cannot be ignored or bypassed by donor agencies.

The content of Section D examines the ways in which small farmers in LDCs make decisions and relates their risk-aversion and cautious optimizing behavior to the existence of technical and institutional uncertainties. It is concluded that economic development in the LDCs of Sub-Saharan Africa depends on the reduction of these uncertainties to the point where farmers will take the risks necessary to move from traditional agriculture to the adoption of improved practices and technologies.

To induce this change, it is recommended that AID target more of its technical support to research on improved technologies specific to the region in question and to the development of non-traditional crops for export and intra-regional trade. Hand-in-hand must go assistance for effective extension to market the technologies. While thus addressing the technical uncertainty problem AID should also address the institutional uncertainties by using opportunities such as offered in the case of Mali, not only to improve parastatals' economic efficiency and to reduce their market interventions, but also to increase the predictability of their actions. This, of course, means improving the predictability of the underlying governmental policies.

b

SECTION A

AGRICULTURAL PARASTATALS IN SUB-SAHARAN AFRICA

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CHAPTER A-I

INTRODUCTION

This section of the report comprises a policy oriented study of the political and economic aspects of agricultural parastatals with particular focus on government interventions in Sub-Saharan African cereal markets.

This analysis is undertaken in the context of the hypothesis that:

Any economic inefficiencies and associated costs which typically characterize government attempts to regulate the food system (especially food marketing) in food deficit developing countries can be explained and justified by the perceived political imperative by these governments that they are responsible for assuring a stable food supply to the population and that government regulation of the food system is the only (admittedly inefficient) way by which this can be achieved.

This study and the associated Sections B, C and D bring to bear a fresh perspective by applying a 'public choice' frame of reference to agricultural parastatals in general, and to specific questions concerning them.

Public Choice

The discipline of "Public Choice" involves the application of techniques and theories of economic analysis to political and organizational behavior. The theories and techniques of public choice are based on the recognition that people are driven by similar benefit-seeking motives whether in a profit-making environment or in the public/political arena. Observing that

politicians and public employees often seem motivated more by their self-interest than by the concept of the "public interest", public choice analysts seek ways: to make these interests more nearly coincide; to determine whether private sector or government action is more appropriate; and to reduce the societal costs of governmental intervention when it is needed or unavoidable.

The development of the theory of public choice is described in the Appendix to this section. This material is also integral to the discussion of factors affecting the efficiency of production and distribution of foodstuffs in food-deficit LDCs in Section D of the report. The salient points only are presented here.

Mueller, in his book, Public Choice, states that the subject

... can be defined as the economic study of nonmarket decision-making, or simply the application of economics to political science. The subject matter of public choice is the same as that of political science: the theory of the state, voting rules, voter behavior, party politics, the bureaucracy, and so on. The methodology of public choice is that of economics, however. The basic behavioral postulate of public choice, as for economics, is that man is an egoistic, rational utility maximizer (1,p.1).

The theoretical underpinnings of utility theory were postulated by Walras, formalized by Pareto and developed by generations of later economists into modern welfare economics, of which public choice is a derivative.

Because public choice deals in the analysis of individual preferences and attempts to aggregate them into social welfare functions in the same vein as Pareto, the same difficulties are encountered. In particular, the theory of public choice encounters the problems of multiple "optima", the impossibility of assigning meaningful cardinal values to subjective utilities, and the attendant difficulties of defining "efficiency". Mueller

addresses these issues at length in his discussion of real valued social welfare functions (1, pp.173-183). His discussion concludes that social welfare functions "must be defined over cardinal, interpersonally comparable individual utility indexes or their equivalent, if a single, socially preferred allocation [of goods and services] is to be determined" (1, p.181). In other words, we must be able to measure, in quantitative terms, the subjective values individuals place on the choices available to them. Such an allocation would be the most "efficient," in the usual sense, in that it would be the "best", resulting from the equivalence of "marginal social cost" and "marginal social utility". However, these cannot be now be measured. Furthermore, the questions even of how to measure them and what form the social welfare function should take have received scant attention in the literature except for the common recognition that the measurement and comparison of utilities must somehow incorporate the ethical beliefs of the community.

Public Choice Sufficiency

Since we cannot measure utilities, and are left only with ordinal comparisons of the results of alternative actions in the public arena, can we define "efficiency" in public choice terms? Mueller provides a clue in his discussion of axiomatic social welfare functions where he says:

One [avenue] is to ... abandon the search for a best alternative, the social preference. In its place could then be substituted the requirement that the social choice process be fair or democratic or accord with some other generally held value.

While this approach precludes using "efficiency" as a criterion, it does suggest other ways of evaluating the quality of outcomes. We propose that given the difficulties of measurement and of finding a unique optimum, a satisfactory way to compare the outcomes of actions in the socio-political arena is to not try to apply the rules of "efficiency" to the non-measurable, but rather to use as a benchmark "sufficiency", which we define as:

Public Choice Sufficiency is the condition attained when a transaction in the public arena does not result in any loss of net societal benefit.

Under this definition sufficiency is attained even in situations where there is a loss of benefit to some participants in the transaction, provided its magnitude is equal to or exceeded by the gain in others'. Since this definition does not constrain the ranges of the possible gains and losses of participants in the transaction, these could theoretically be very large. In practice they are likely to be constrained by government policies based in concepts of equity and molded by considerations of political survival. While conditions for optimality cannot be defined under this definition, it is obvious that the greater the net gain to society, the more public choice sufficient the transaction. Although actual measurement of the social welfare function is not possible, ordinal changes can be determined by evaluating the extent to which transactions result in attainment of announced, adopted, public policy goals.

Announced, adopted, public policy goals are used as the benchmark on the presumption that they represent the amalgam of the desires of those involved in the policy process, arrived at through formal or informal ways of making those desires known. Formal mechanisms constitute voting in any of its forms. Informal procedures include direct expression of approval, as in overt political support; or the absence of opposition, in passive or active forms. The ultimate expression of active opposition occurs when interested parties are galvanized into violent actions such as the food riots that occur from time to time in African and other LDCs. This is the "bread and beer" syndrome, discussed later, that underlies the economically inefficient controls of cereal grain markets by many African rulers so necessary to their political and often, physical survival.

For example, actions that lead to increases in farmers' incomes where this is a policy goal will be regarded as public choice sufficient, as will the achievement of social tranquility by "buying-off" interest groups by rewarding their special demands. It must be noted that the attainment of public choice sufficiency does not necessarily result in economic efficiency, nor is the converse true. In fact, since most public economic policy is grounded in concepts of equity and distribution of wealth, it is unlikely to be economically efficient in the sense that its marginal cost would equal its marginal benefit, if these could be measured.

Central to public choice analysis is the concept of rent seeking, the behavior of individuals or groups attempting to satisfy their special interests and to achieve gains exceeding those that would be obtained in competitive markets.

In economic terms, rent is a payment to a factor in excess of what it could command in a purely competitive market. For example, if an individual with certain skills is able to get a job at a wage higher than his next available alternative requiring the same skills, the difference between the wages is his rent. If he knows beforehand that the possibility of such an outcome exists, he will devise some strategy to pursue that outcome because achieving it will increase his personal utility. His pursuit of the favorable outcome is rent-seeking behavior, on which he will have expended resources.

Classical economics would have regarded the result of such actions as neutral, causing in no change in economic efficiency or in society's utility because the man's gain would have been some other person's exactly equal loss - a zero sum outcome. However, as McKenzie and Tullock point out (2, p.242), this orthodox theory was incorrect and underestimated the effects of restrictions on free trade brought about by rent-seeking activities. These effects are losses in economic efficiency and

societal utility arising from the expenditure of resources which could have been used more productively from society's viewpoint.

Since public choice deals with the political environment, it is easy to see why rent-seeking behavior is important. In all systems of government politics is the playground for the rent-seeking activities of interest groups seeking excess gains by tilting governmental actions, restrictions or regulations in their favor. In short, rent-seeking can be thought of here as "stacking the deck" of public action for private gain.

McKenzie and Tullock put it thus:

...one of the major ways of making money is to get the government to give you some kind of privilege. This social privilege may be hiring you as a civil servant at more than you can make elsewhere, restricting foreign imports of competing products, or prohibiting domestic competition, direct government grants, and so forth. The list is endless (2, p.257).

While rent-seeking behavior often creates economic inefficiency, it also often results in outcomes that are public choice sufficient. For example, successful lobbying by U.S. farmers and their allies in pursuit of cereal grain price supports regularly results in producer price levels that are higher than would have been obtained in the absence of governmental intervention, at least in the short term. This outcome is economically inefficient because: the above-market-clearing prices attract production inputs that would have gone to other uses under different conditions; the support prices are capitalized into land prices, constituting excess rent to landowners; and the subsidies are paid out of the Treasury, and are thus a tax on the general populace in the form of a transfer payment to farmers. Furthermore, the expenditures on the rent-seeking behavior that achieves the rural interests' desired ends are a use of resources that could have been put to some "better" use.

From the public choice perspective, these outcomes are justified and sufficient, since they meet the desires of the American people, expressed through their elected representatives, that:

- ° farmers receive reasonable prices and adequate incomes;
- ° consumers have access to adequate supplies of cereals at affordable prices; and
- ° an exportable surplus be produced.

This is not to say that these objectives could not be met in a more economically efficient way, thereby meeting the additional desire of the populace to achieve these socially and politically desirable goals at less money cost. To identify ways to do so is one of the aims of public choice analysis.

Because U.S. farmers are politically potent, they are able to successfully seek rents through government intervention in the market. Note also that in rewarding the rent-seeking behavior of a politically powerful interest group, the government is also engaging in a form of rent-seeking where the rent accrues in the form of political support (or the absence of opposition). Although not directly quantifiable, it is nonetheless real.

As is noted later the political environments of the food-deficit nations of Sub-Saharan Africa provide analogous opportunities for rent-seeking behavior by interest groups and by governments. The most significant difference between the U.S. environment and that of most nations of Sub-Saharan Africa is that, whereas U.S. farmers are successful rent-seekers, with few exceptions those in Africa are not. The potent political voices in Africa are the urban consumers and other interests who successfully seek rents in the form of low priced cereal grains at the expense of the politically impotent peasant farmers. Governments of these nations seek and obtain political rents, just as do U.S. governments, but from the urban rather than the rural interests involved in the food system.

Overview of Sub-Saharan Africa

Shamsher Singh describes Sub-Saharan Africa in the following way:

There are 47 countries in sub-Saharan Africa. Most of them are sparsely populated with a rather narrow skill base. Agriculture dominates their economies and for a large number of them accounts for 30 to 60 percent of their Gross Domestic Product (GDP). In 1980, three-quarters of the total labor force in the low-income countries and two-thirds of it in the middle-income countries worked in agriculture. Women constitute an integral part of the labor force.

Except where metals and minerals constitute a country's main export, 1/ agricultural commodities account for two-thirds or more of their export earnings. In some cases (Burundi, Chad, Mali, Rwanda, Somalia, Sudan, Uganda, and the Ivory Coast), agricultural products are virtually the only merchandise export.

Agricultural output is the single most important determinant of overall economic growth. The economic problems of sub-Saharan Africa are thus embedded in the agricultural sector and its performance in the face of internal and external constraints faced by it. (3, p.1)

Inappropriate domestic price and incentive policies lie at the heart of the agricultural problem. Agriculture is in most cases the main source of government revenue. Governments therefore have proceeded to tax agriculture to finance investments. This has proven to be self-defeating. Heavy taxes on exports, inappropriate exchange rates, and lack of price incentives have tended to choke the growth of production and exports. This applies to cereals for domestic consumption as well as to export crops - for example cocoa in Ghana. If, on the other hand, governments were to provide production incentives, the increased output and exports will provide an expanding rather than a contracting taxbase (op cit, p.10).

1/ Niger (uranium), Sierra Leone (diamonds), Togo (phosphates), Zaire (copper), Angola (petroleum), Congo, P.R. (petroleum), Liberia (iron ore), Gabon (petroleum), Mauritania (iron ore), Nigeria (petroleum), and Zambia (copper).

In most Sub-Saharan African nations, as noted by Berg et al (4), Bates (5,6), Cowan (7) and many others writing on the subject, food production and distribution systems are strongly influenced and often directly controlled by state-sponsored public and quasi-public bodies known as "Agricultural Marketing Boards" and synonymously as "Agricultural Parastatals." The latter title is used throughout the discussion that follows with respect to government interventions in domestically-produced or imported food staples, principally cereals. Neither cash nor non-food staple crops will be addressed here, although they are also subject to substantial parastatal influence. The principles of governmental interventions remain the same.

CHAPTER A - II

THE NATURE OF AGRICULTURAL PARASTATALS

Parastatal organizations exist throughout Sub-Saharan Africa, playing a pervasive role in all sectors of these LDC economies. Our concern here is only with those involved in the marketing of food staples, mainly cereal grains, domestically produced or imported.

Overview

Abbott and Creupelandt, writing for the Food and Agricultural Organization of the United Nations (FAO), describe agricultural parastatals as:

...public bodies set up by government action and delegated legal powers of compulsion over producers and handlers of primary or processed agricultural products. They include advisory and promotional boards whose only compulsory feature may be a levy on sales to meet their expenses, boards which are empowered to regulate individual producers' and traders' marketing operations and provide facilities for their use, and boards empowered to stabilize prices by various administrative methods. They also include boards which levy and sell on their own account, either with a monopoly or in competition with other trading enterprises (8, p.1).

Theoretically, parastatals can be distinguished from direct government services by virtue of their considerable autonomy with respect to management and procedure. They differ from cooperatives through official delegation to them of operational responsibility and powers of compulsion (8, p.2).

In Sub-Saharan African nations, the difference from direct government services is largely cosmetic. The agricultural parastatals have become direct tools for implementation of government policies, often to reward rent-seeking by power elites; to

tax, explicitly or implicitly, agricultural production for the benefit of urban and industrial interests; and, most basic of all, to create and reward political support and to handicap and punish political opposition.

As described by a senior United Nations official, the most basic political reality in Sub-Saharan Africa is "bread and beer," since shortages of or high prices for either have or will cause unrest (private conversation, Rome, July 1984). Therefore, since independence, African rulers have sought to protect themselves by controlling and manipulating the production and marketing of cereal grains, the source of both bread and beer, and therefore important to the retention of political power.

Some economists argue that agricultural parastatals are unwarranted governmental intrusions in the markets for inputs and products, and should therefore be dismantled forthwith to make way for a laissez-faire market economy. Others, noting the volatile nature of production, the inadequate distribution and marketing systems, arbitrary and rapidly changing policies, and the political instability of many of these nations, argue that because the risks to entrepreneurs are so great, private interests will not organize effective markets, so parastatals are necessary to fill the void. They contend that parastatals per se are not the problem, rather, the ways in which they are (mis)managed and the uses to which they are put, especially to reward rent-seeking.

The latter viewpoint is supported in part by McKenzie and Tullock:

Note, however, that laissez-faire type government is not absolutely essential to eliminate rent-seeking. A government which controls the entire economy or large sectors of it but refrains from responding to rent-seeking activities, i.e., does not give special privileges to politically influential groups, would also have no rent-seeking waste. It might be inefficient

for other reasons, but rent-seeking would not be important (2, p.256).

In practice, though, a government having control of large parts of its economy will always succumb to the temptation to intervene in ways that improve its political position. Therefore, rent-seeking behavior will be rewarded. The key policy issue is to find ways to reduce the attendant economic inefficiencies.

In the sections that follow, the various types of parastatals, their uses and their impacts are described. Since their characteristics are in part historically determined, their genesis and evolution are traced. Descriptions are given of production and market interventions in the U.S. and Sub-Saharan African cereal grain sectors. Lastly, the benefits (costs) of dismantling parastatals or improving their efficiency by modifying their structure and operations are examined.

Types and Intended Purposes of Agricultural Parastatals

Governments in all countries share the common problems of achieving food security for their people and in most cases of maintaining a viable export agriculture to balance trade and to earn foreign exchange. Governments therefore seek ways to guarantee "adequate" food supplies at "affordable" prices for consumers, while attempting to ensure "reasonable" returns to producers.

All governments, democratic or totalitarian, in developed countries or LDCs, seek these ends through a variety of approaches, including interventions in production and markets.

In the LDCs of Sub-Saharan Africa, the dimensions of the problem extend beyond domestic food security to the nations' need for foreign exchange earnings from agricultural exports. Those governments also respond to the perceived need for low-cost

agricultural products as raw materials for infant, domestic agro-industries protected by tariffs and artificially high currency exchange rates - the import substitution phenomenon.

Most governmental interventions in agricultural production and markets take the form of one or a combination of the six basic types of agricultural parastatals described by Abbott and Creupelandt and summarized below (8, pp.4 et. seq.). Note that, while the names of the entities involved differ from country to country, as do the degrees of coercion applied, the methods of operation are similar within types. The differences between the effects of parastatal operations lie in the extent to which they permit and reward rent-seeking behavior resulting in a net loss of societal utility. In actual operation, parastatals mostly combine the functions of several of the types described. Their operations also change significantly from time to time. Actual examples are therefore specific to individual countries at specific times. Table 2 (p. A-21,22) provides a summary of the cereals parastatals existing in West Africa and the Sahel in 1983.

Type 1: Advisory and promotional boards:

- ° carry out market research and sales promotion for specific commodities; advise on all aspects of marketing;
- ° operate under free-market conditions, do not engage in trade or maintain direct controls over sales volumes or prices; only compulsory power is usually a levy on sales to finance operations.
- ° offer little potential for effective rent-seeking behavior, since there are no regulations to be bent or broken.

Type 2: Regulatory boards:

- ° develop and apply uniform quality standards to export produce competing in world markets;
- ° enforce standards and regulate exports through licensing;
- ° offer some potential for rent-seeking by seeking of favors through the licensing process.

Type 3: Price stabilization, non-trading boards:

- ° price stabilization by quantity (production) regulation and/or by purely financial methods such as fixed price and deficiency payment schemes, schemes backed by stabilization funds, pooling schemes and regulation of quantities sold in various markets;
- ° export and import controls by strict licensing;
- ° act as price negotiators for large numbers of small producers, sometimes with price guarantees for given volume of output, leaving the remainder to the market-clearing process;
- ° considerable potential for successful rent-seeking by manipulation of the various regulatory functions.

Type 4: Boards maintaining buffer stocks and trading in competitive domestic markets:

- ° buy and sell in competition with private-sector traders to dampen price swings and even-out supplies in the market;
- ° might have monopoly over imports/exports to help implement the domestic stabilization program;
- ° rent-seeking opportunities minimized by operations in the competitive domestic market.

Type 5: Export monopoly boards:

- ° sole buyer and seller of products mainly for export, including those destined for domestic processing prior to export;
- ° private sector traders relegated to role of domestic buying and/or overseas selling agents for the board;
- ° price stabilization based on fixed producer prices backed by stabilization funds;
- ° have comprehensive powers of compulsion over producers;
- ° great potential for successful rent-seeking, especially by the bureaucracy. Rent-seeking often shows up in the form of bribery.

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Type 6: Domestic trading monopoly boards:

- ° given a monopoly over markets and processing for commodity in the nation, region, or within certain market channels;
- ° discretion to set producer and consumer prices without reference to market forces and similarly to allocate products to market sectors;
- ° operations backed by national treasury, often without effective fiscal controls;
- ° very great opportunities for successful rent-seeking activities, especially on the part of corrupt officials and bureaucrats.

History and Evolution of Agricultural Parastatals

The first formal agricultural marketing schemes backed by statutory powers of compulsion are reported to have evolved in the 1920s from unsuccessful attempts by agricultural cooperatives in Canada and Australia to increase their bargaining power in the face of falling fruit prices (8, pp.2-3).

During the world depression of the early 1930s price breakdowns under the weight of excess supplies of agricultural products led governments in Australia, New Zealand, Canada, the United Kingdom, the United States of America and South Africa to establish compulsory marketing schemes for many agricultural products. Statutory marketing agencies were granted powers to compel producer participation in domestic price support schemes based on subsidies, regulation of quantities sold and pooling of returns from internal and external markets.

The failure of agricultural product prices to recover to the same extent as those of industrial products, and the continued sharp fluctuations of world market prices led governments to make permanent these "temporary" market interventions.

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During the Second World War, to ensure the reliability of supplies of agricultural products needed by colonial powers, especially the United Kingdom, marketing boards were set up in developing countries. In particular, the U.K. government established the West African Produce Control Board to be responsible for purchase and sale of traditional (non-cereal) export crops from British West African territories. The success of these statutory monopoly marketing organizations in exporting products to world markets led to their proliferation in West Africa after the war (8, pp. 3-4). According to Bates, the impetus for the export marketing boards in West Africa, notably Ghana, came from cartels of purchasers and shippers of their products. These parastatals were thus discriminatory against producers and toward the marketers (5, p. 71).

In East Africa, the impetus for marketing boards came from the settler-producers of cereal grains, and began through the efforts of the Kenya Farmers' Association in 1912-13 to promote the marketing of their products. Their successes resulted in government policies which raised the domestic price of grains; sheltered those prices behind import duties; and used public funds to dispose of surplus production in export markets. Product leakage into the unregulated markets from non-member subsistence farmers was restricted during the Great Depression by passage of legislation (the Marketing of Native Produce Act) requiring permits and licenses. Association members were compelled during the Depression (and thereafter) to market only through the Association. Subsequently, all farmers were required to do so (5, pp. 71-73).

Maize producers achieved comparable mechanisms and protection through creation during World War II of the Maize Control Board, its first head and most staff being drawn from the Kenya Farmers' Association. Later, the Association was designated the monopoly buyer of maize at legally binding, government-set prices (5, pp. 72-73).

Thus, producers of wheat and maize, through long-term rent-seeking behavior, succeeded in extracting non-competitive rents from the market for commercial agricultural products. By the end of the colonial era, in every market of interest to the agricultural producers (products, land, transportation, inputs) there existed in Kenya a parastatal through which the producers accessed and influenced government policy (5, p. 88).

Although only Ghana and Kenya have been mentioned here, in other countries throughout Sub-Saharan Africa similar situations focused primarily on export products, pertained.

With the advent of independence in the early sixties, leaders of the new governments faced the problem of solving "the commitments of the government in terms of securing adequate basic food supplies at cheap prices to the low income consumer masses, this for social, economic and political stability reasons" (9, p. 1). Furthermore, they had to strive to maintain the agricultural export base which was their greatest and in some cases only foreign exchange earner. Since agriculture was the principal economic sector, it became the logical "milch cow" from which could be obtained financial and raw material resources to satisfy the new leaders' perceived needs for an industrial base to create urban employment, for economic diversification and for import substitution.

Therefore, where the export-related parastatals existed as part of the colonial legacy, they were retained. In attempts to control the domestic food supply, leaders in these countries created new parastatals dealing with basic food grains, often ignoring the differences in problem areas, operational conditions and financial implications involved in dealing with export products and domestic food staples. The former constituted a potential source of finance whereas the latter represented a potential drain on the Treasury, having to be provided to consumers at the lowest price possible (9, p. 1). Table 1 illustrates the degree to which some export crops have been taxed.

Table 1. Nominal Protection Coefficients of Selected Export Crops. (4, p.56)*

Crop	1971-1975	1976-1980
Cocoa		
Cameroon	.37	.45
Ghana	.47	.40
Ivory Coast	.56	.38
Togo	.50	.25
Coffee		
Cameroon (Arabica)	.72	.60
Cameroon (Robusta)	--	.36
Ivory Coast	.68	.36
Kenya	.94	--
Tanzania	.80	.59
Togo	.42	.23
Cotton		
Cameroon	--	.79
Ivory Coast	.79	1.05
Kenya	1.07	--
Malawi	.68	.75
Mali	.55	.44
Senegal	.65	--
Sudan	.78	.60
Togo	.62	.79
Upper Volta	--	.79

*"Nominal Protection Coefficient" is the price paid to the producer divided by the amount he would have received had he sold his crops at the "world" price minus transport, marketing and processing costs. A value greater than one indicates a subsidy, less than one, a tax.

In contrast, a number of countries in West Africa and the Sahel reached independence with no significant export structure and lacking an effective food distribution and marketing system. Initially, these governments attempted to deal with the "basic food grain deficits and the resulting supply difficulties and price speculation... by the mere fixing of official prices to be paid to producers and ceiling prices to consumers and some vague control measures" (9, p. 4). More effective means to adjust disparities between supply and demand and to increase market competition had to be devised. In the early sixties, the Food and Agriculture Organization of the United Nations (FAO) began to assist the Sahelian countries in establishing Grain Price Stabilization Schemes. These were designed as regulatory and market organizing entities which would operate in parallel but not in competition with the nascent private sector.

Despite FAO and other donor good intentions, these recipient governments soon realized, as had others, the potential of these grain marketing schemes as vehicles for their political and social objectives. Therefore, rent-seeking became pervasive and the familiar market distortions arose. The pervasiveness of governmental interventions in cereals markets in these countries is illustrated by the list, in Table 2, of the situation existing in 1983.

Table 2. OFFICIAL GRAIN MARKETING AGENCIES IN SAHELIAN AND WEST AFRICAN COUNTRIES (Source, 9)

<u>Sahelian Countries</u>	<u>Name of the Board</u>	<u>Commodity Coverage 1/</u>
Cape Verde	Empresa Publica de Abastecimiento	All cereals, mainly imports
Gambia	Gambia Produce Marketing Board (GPMB)	Rice plus major export crops
Mali	Office des Produits Agricoles du Mali (OPAM)	Local cereals plus related imports
Mauritania	Office Mauritanien des Céréales (OMC)	Local cereals and imports
Niger	Office des Produits Vivriers du Niger (OPVN)	Millet, sorghum, rice
Senegal	ONCAD until June 1981	Local cereals and ground nuts
Tchad	Office National des Céréales (ONC)	Local cereals
Upper Volta	Office National des Céréales	Local cereals
<u>Other West African Countries</u>		
Benin	Office National de Commercialisation Agricole du Dahomey <u>2/</u>	Local cereals and export crops
Cameroon	Office Céréales (OC) Northern Province	
Congo (P.P.)	Office des Cultures Vivrières (OCV) <u>3/</u>	In principle all local cereals and major food staples
Ghana	Grain Development Board (GDB) Food Distribution Corp. (FDC)	Local cereals, mainly maize
Guinea	Société d'Enterprises Regionales de Commercialisation	Local cereals
Liberia	Liberian Produce Marketing Corp. (LPMC)	Rice and major export crops
Nigeria	Nigerian Grains Board	All cereals
Togo	Togo Grain	Local cereals and their import
Zaire	Office National des Céréales (ONACER) Office National de Promotion des Produits Vivriers (ONPV) <u>4/</u>	Local cereals and other basic food crops

1/, 2/, 3/ and 4/ - See following page

OFFICIAL GRAIN MARKETING AGENCIES
IN SAHELIAN AND WEST AFRICAN COUNTRIES (Source, 9)

- 1/ Wheat, consisting mainly, if not exclusively, of imports, is normally controlled by stabilization food and milling companies.
- 2/ ONCAD was abolished and the marketing of maize and rice entrusted to development corporations and cooperatives.
- 3/ The OCV up till now was mainly concerned with the development of staple food production. Previously, the ONCPA (Office National de Commercialisation des Produits Agricoles) dealt with cereals and export crops, but was abolished years ago. Officially, the OCV stands for the monopoly procurement of paddy, maize, ground nuts and beans.
- 4/ The ONPV replaced in 1978 the defunct Office National des Céréales. However, the ONPV never became operative. Presently, the "Direction de Commercialisation" of the Minagri is re-launching the marketing of staple foods with the assistance of an FAO project in collaboration with selected private operators.

CHAPTER A - IIIU.S. INTERVENTIONS IN CROP MARKETS

Empowered by the Agricultural Adjustment Act of 1933 and subsequent legislation the U.S. government intervenes in domestic markets for farm products, especially cereal grains. Today, the farm programs emphasize voluntary participation; the policy objectives are still to:

- ° raise farm incomes;
- ° stabilize producer prices and incomes;
- ° stabilize and maintain "reasonable" prices for consumers;
- ° expand agricultural exports; and
- ° do it all with relatively low Federal outlays.

The fiscal magnitude of the U.S. interventions in agriculture is shown in Table 3. The success of the programs in meeting domestic objectives, discussed briefly below, ironically handicaps efforts to expand exports by placing a floor under world market prices. This occurs because the U.S., by far the leading exporter of cereal grains, holding a 1984 market share of approximately 38% for wheat and wheat flour and 61% for coarse grains (10, p. 3), exports its subsidized prices, opening the door for lower-priced competition from other producers. Furthermore, much of the export surpluses created by the domestic price support programs find their way into foreign assistance programs at concessional prices, thereby contributing on the one hand to alleviation of hunger in recipient LDCs, but on the other, reducing incentives for those LDC governments to take steps to stimulate domestic production.

Table 3. INDICATORS OF GOVERNMENT INTERVENTION IN AGRICULTURE,
FISCAL YEARS 1956-1983 (10, p.23)

Year	Commodity Loans and Inventory (In billions of 1983 dollars) <u>a/</u>	Price Support Outlays (In billions of 1983 dollars) <u>b/</u>	Acreage Idled Under Govern- ment Programs (In millions) <u>c/</u>
1956-1960 Average	24.7	5.7	24
1961-1965 Average	22.4	7.2	52
1966-1970 Average	11.9	8.0	54
1971	11.3	6.9	38
1972	7.4	9.5	62
1973	7.6	8.0	20
1974	3.2	2.0	3
1975	1.1	1.1	2
1976	1.2	1.8	2
1977	1.8	6.2	1
1978	6.1	8.6	18
1979	7.3	4.9	13
1980	6.1	3.3	--
1981	8.7	4.8	--
1982	9.2	12.0	11.1
1983	16.9	18.8	77

SOURCE: U.S. Department of Agriculture and the Congressional Budget Office

- a. Total value of outstanding commodity price support loans and government-owned inventories at start of the fiscal year.
- b. Commodity Credit Corporation price support and related expenditures by fiscal year.
- c. Acreage idled in calendar year in which fiscal year ends.

The U.S. Programs

The U.S. programs carried out by the Commodity Credit Corporation under mandates renewed regularly by the U.S. Congress have two major objectives - to increase and to stabilize farm prices and incomes.

The Congressional Budget Office (CBO) describes the major domestic policy goals as income enhancement and income stabilization. The former seeks to raise prices, and therefore farm incomes, above the level expected through the interaction of market forces. The latter attempts to reduce the year-to-year fluctuations in prices and incomes, implying acceptance of the role of the market in price-setting (11, p. xiii). To the extent that these goals embody different views of the role of the market, they create the prospect for policy conflicts. Because they involve government intervention, they create major opportunities for rent-seeking activities.

Similarly, the objectives of maintaining "reasonable" prices for consumers and of producer-price enhancement are potentially conflicting, as are the export promotion and domestic policy goals.

The resolution of these conflicting objectives requires balancing the competing interests of urban consumers, large commercial farmers, small farmers, processors and exporters. The CBO points out that the current farm programs have been progressively less effective in meeting their objectives and have shown, over time:

- ° A diminished capability to increase farm income because of the decreased effectiveness of supply management activities and the greater influence of economic, trade, and foreign policies, here and abroad, on farm income.

- ° A diminished capability to stabilize farm prices and incomes because of shifting international events and conditions that cause unanticipated changes in U.S. agricultural exports and in farm prices.
- ° An increased potential to undercut agricultural exports by raising prices in international markets, thus discouraging overseas consumption of U.S. farm products and stimulating crop production in other exporting nations.
- ° A diminished effect on food prices because of lessened influence on farm prices and because of the greater importance of non-farm prices in determining consumers' food costs.
- ° An increased cost to taxpayers - major crop program outlays in 1983 being a record \$12.5 billion, and total price support outlays being \$18.8 billion (11, xii-xiii).

Stabilization Methods

Current U.S. programs use two approaches to attempt to stabilize grain prices:

1. Non-recourse loans to farmers at a specified loan rate (price support per unit of production), secured by crops stored and pledged as full collateral by the producers. The government attempts to set the price supports below expected market-clearing prices. These supports create a floor below which market prices seldom fall.

2. The farmer-owned grain reserve under which growers contract with the government to store grain for three years in return for a non-recourse loan and an annual storage payment by the government. The reserve is designed to buffer price swings to within the range of a floor price set by the reserve loan rate

and a ceiling price set by the government's trigger release price below which grain in the reserve cannot be sold without financial penalty to the grower.

Income Enhancement Methods

Two approaches are used to raise farmer incomes:

1. Deficiency payments are used to support the incomes of grain farmers when national average market prices remain below government-set target prices for a specified time period. The deficiency payment per unit of production is the amount by which the non-recourse loan rate falls short of the target.

2. Reductions in planted acreage are often required for farmers to be eligible for the non-recourse loans, the farmer-owned reserve and deficiency payments. In some years additional inducements to further reduce the acreage planted, such as diversion payments in cash or payments in kind, are made available.

It is important to note here that the U.S. government programs managed by the Commodity Credit Corporation, a parastatal-type organization, rely on voluntary participation by growers induced by market-related financial incentives. Since free-market conditions are not met, economic inefficiencies result. These are not discussed here, as it is not the purpose of this report. Rather, the objective is to set the stage for discussion of similar interventions in LDCs, in the context of public choice. Of particular interest are the reasons why U.S. interventions produce surpluses but those by LDCs do not.

Public Choice Sufficiency of U.S. Programs

The goals of the crop price-support programs, enunciated during the 1930s have changed little since.

Periodically, the Congress legislates multiyear programs giving broad discretionary powers to the Secretary of Agriculture to implement these programs within guidelines as to minimum price and income support levels. Because of the legislative involvement and these discretionary powers, the opportunities for rent-seeking behavior by interest groups are significant. The degree to which such efforts are made and the extent of their success in influencing programmatic decisions is uncertain since they are rarely overt. However, some inferences can be drawn as to the degree of public choice sufficiency attained.

As discussed above and in the Appendix on "Utility, Efficiency and Public Choice", our evaluation must be ordinal because cardinal values cannot be assigned to the utilities of individuals or the society. That is, neither "marginal private cost" nor "marginal social cost" can be quantified (12, p. 70-71). We must therefore look to the above policy goals enacted by the legislative body of our society for the benchmark against which to measure the public choice sufficiency of the programs as implemented. These policy goals, arrived at through a voting process and subject to periodic review, constitute the consensus views of the society as to the set of conditions which, if fulfilled, would result in a net benefit to society, or at least in no reduction in its utility.

Taking the stated goals of the price-support programs as the benchmark and considering the effects of the programs on the target populations, as described by the CBO (see 11, pp. 24-32 for detailed descriptions of the programs' effects), the following conclusions can be drawn.

Farm Income Levels

The stated goal of enhancing farmer incomes has generally been met, but the distribution of those benefits has been skewed to large, commercial farms to the detriment of small farms

(11, p.24). The cause, the support system based on production volume, could well be derived from effective rent-seeking by these large, commercial interests. Therefore, while the program is public choice sufficient, it could be made more so by a more equitable process.

Food Prices

The continued decline in the proportion of consumer food prices attributable to farm-gate prices has reduced the influence of the present farm programs in holding down and stabilizing consumer prices. While the real, deflated price of food has remained fairly steady through time, it is likely that increases in feed grain prices caused by farm program implementation have been passed through to consumers of animal products (11, p.27).

Since there is no clear indication whether the net effect of the farm programs on consumer prices has been positive or negative, it cannot be determined whether public choice sufficiency has been achieved with respect to prices. There is no question that the companion goal of adequate and stable supplies has been met, however.

Exports

U.S. price-support programs place an effective floor under international prices, because the U.S. is the world's largest grain exporter. If price supports are raised, export prices increase, encouraging competing nations to increase their production, thus cutting into the U.S. market share. Furthermore, other nations know that U.S. farmers will produce for the nonrecourse loan program and for the farmer-owned reserve when support prices are high relative to market prices. Therefore, there is a tendency to let the U.S. carry the burden and cost of maintaining stocks to help support trade during crop shortfalls. This contributes not only to higher U.S. costs but also removes the incen-

tive for buffer stock creation in LDCs and therefore for greater responsibility on the part of their governments and their grain parastatals.

While the programs are no doubt public choice sufficient, having resulted in an exportable surplus, the level of sufficiency in this context could be improved by adopting policies which encourage exports as well as production. Note that there is an incipient conflict between these goals, since achieving the former could require lowering price support levels and, possibly, farmer incomes.

Costs to the Taxpayers

The annual costs of the programs vary, as shown by Table 3. When the costs are regarded as unacceptable in a given year, the implementing programs can be and often are modified by the Congress or the Administration. To the extent that such modifications reflect taxpayer discontent, the programs can be regarded as public choice sufficient, in an ex post sense.

Conclusion

Although the levels of public choice sufficiency and of economic efficiency measured in terms of the costs of the U.S. farm programs could undoubtedly be improved, the programs do achieve their stated objectives of assuring food security with exportable surpluses at reasonable costs to consumers while providing reasonable (if uneven in distribution) returns to farmers.

In contrast, Sub-Saharan nations, while expressing essentially the same agricultural policy objectives, are unable to achieve them. While there are many possible reasons for this difference, one of the most basic is the environment in which farmers operate.

U.S. farmers (and those in most other developed countries) are politically potent. They are therefore able to secure, through successful rent-seeking, conditions of reasonable certainty about the economic and institutional environment which they face.* This enables them to take the risks involved in using the most advanced technologies to achieve the outputs desired by society. In short, they have positive incentives to produce.

As will be seen in the next chapter dealing with agricultural parastatals in Sub-Saharan nations, most LDC farmers are politically impotent, and are exploited by governments rewarding the rent-seeking of urban interests. They therefore have little incentive to produce above a subsistence/barter economy level.

* See Section D for a discussion of the importance of uncertainty in farmer decision-making.

CHAPTER A - IVSUB-SAHARAN AFRICAN AGRICULTURAL PARASTATALS

While generalizations are risky, it is safe to say that the uniform response of Sub-Saharan African political leaders upon independence was to seek control of the "bread and beer" sector, the cereal grain markets, by retaining and expanding existing agricultural parastatals and by creating new ones where there was none. The motivations for extending parastatal operations to the distribution and marketing of domestically-grown or imported cereal staples in East and West Africa, where export parastatals already existed, and of introducing them to the Sahel were similar. The new governments recognized that control of the marketing channels and the imposition of official prices gave them control of the (often limited) supply of staples. In situations where shortages or price increases can lead to political unrest, control of the staples is often perceived by those in power as extremely important.

Bates, in his Essays on the Political Economy of Rural Africa provides a comprehensive review and analysis of the development of agricultural policies in post-independence Africa. He examines three possible explanations for the interventionist policies adopted by the new governments.

The first emphasized the role of the state as an agency for fulfilling social purposes. Agricultural policies were interpreted as choices made in efforts to secure public objectives. The taxation of export crops to obtain financing for industrial developments and other projects of benefit to primarily urban dwellers falls within this interpretation (5, p. 131). The early 1960s creation, under FAO auspices, of Grain Price Stabilization

Schemes in West Africa and the Sahelian countries, providing for official procurement at harvest and the release of stocks later in the season or year is another example. This was an approach designed to 'protect' producers from low prices offered by exploitive middlemen (often of different ethnic origin) at harvest time and to 'protect' consumers from price-gouging by the same middlemen later in the year (9, p. 4). Bates notes that this approach fails to explain the selection of negative pricing policies (payment of artificially low prices) in food production, or the pervasive economic inefficiencies of agricultural programs.

The second approach stressed "the role of the state in aggregating private demands and interpreted agricultural policies as choices made in response to organized interests" (5, p. 131). Bates concludes that this approach, particularly in the area of food policy (the provision of cheap food to urban masses and payment of low prices to producers), explains much about the characteristic features of agricultural programs. It fails to explain the retention of political power by governments apparently hostile to the interests of the overwhelmingly agricultural populace.

The third approach examined by Bates focused on the features of agricultural policies which allowed governments to use them to build organized political support and to disorganize political opposition. "Market intervention may create inefficiency, this approach emphasizes, but economic inefficiency may also generate the resources by which to govern" (5, p. 131). Bates points out that the end result of government policies exploiting the competition among interest groups (their rent-seeking behavior), by rationing favors, giving privileged access, and individual exemptions to general rules, is the political neutralization of the majority of the African citizenry, the farmers.

The political impotence of African farmers was confirmed by a highly placed official of the FAO office of Special Relief Oper-

ations in a recent conversation (Rome, July 1984). He made the point that this political condition is of benefit to governments because since the peasant farmers are subject to the vagaries of government policy changes they pose no effective opposition to them.

Bates explains that in the typical post-independence African nation, there was formed a development coalition comprising the state, the urban workers, the industrialists and their rural allies, the large farmers and the tenants on government development projects (5, p. 133).

He concludes: "In the name of development, this coalition combined against the mass of the rural interests, and... the peasantry became politically isolated and oppressed. By the same token, it also became politically demobilized."

The mechanisms through which these outcomes were achieved were in most cases the parastatals, differing in structure and operations among countries and among sectors within countries, but remarkably similar in their objectives and their results (conversation with FAO economist with 30 years African experience; Rome, July 1984). This expert stressed that in most Sub-Saharan countries "parastatal" is a misnomer since these organizations function as direct extensions of the state, used to implement their rulers' policies. He further emphasized that while the perceived failings of the parastatals - inefficiency, use as labor sinks, high operating costs and the cause of market distortions - are real, they are the direct results of conscious government policy, not just the outcomes of lack of training or poor management. Therefore, he said, attempts to influence or change the operations of the parastatals or to seek their abolition without addressing the underlying government policies will fail because the answer lies in these policies, not in the parastatals themselves. This FAO official concluded with the recommendation that foreign assistance should aim at changing recipient governments'

policies so that the marketing boards, presently needed in many LDCs because there is no other way to get food and other assistance to the needy, will revert to their conceptual role as non-intrusive market organizing and structuring organizations not in competition with the private sector where it exists.

The Importance of Management

Creupelandt, in a paper given at the Seminar on Marketing Boards in Tropical Africa (Leiden, Holland, 19-23 September 1983) states:

In concrete terms, grain boards often face the problem of having to implement the "wrong thing" (in terms of an inappropriate policy on prices or price levels), with "poor means" (...lack of facilities, financial means) and many manage to do this indeed in a "poor way" which obviously adds to the overall inefficiency, lack of impact and high costs (9, p. 5)

His point is that poor management is not by itself the source of the shortcomings of agricultural parastatal operations. Rather, the problems lie in the political, social and economic environments in which they must operate. They are related to the nature of producers, the types of consumers, the types of private sector operators in the market, and the characteristics of the industrial sector. Of paramount importance is the degree to which the special interests of each are reflected in government policies to the detriment of others; in other words, the degree to which rent-seeking is effective, and to which it reduces society's utility.

Timmer et al share the view that management alone is not the problem. They note that managers are continually put into conflicting working situations by their political masters seeking to implement their conscious and often conflicting policies. The resulting management problems are compounded by macroeconomic policies that result in inflation, overvalued exchange rates and selective import restrictions that raise the prices of targeted domestic and imported manufactured products and lead to distortions in relative prices (13, Ch. 5).

However, as Creupelandt notes, the poor quality of management is often itself the result of government policy in that boards of directors largely or exclusively represent government interests; and managers of the organizations "are often political appointees with little margin for corrective intervention" (9, p.7).

Two officials of the World Food Council described the management situation most succinctly. During a discussion of the possibilities of improving parastatal performance by improving managers' skills through donor-supported, private-sector oriented training programs, these authorities pointed out that:

- ° most Sub-Saharan countries already have management institutes.
- ° there exist also regional training institutes, notably: the Eastern and Southern African Management Institute created by Kenya, Tanzania and Uganda; and the Institute for the Sahel, serving a number of Sahelian nations.
- ° improving the skills of parastatal managers as is occurring already, will simply result in better managers implementing the same misguided policies more efficiently.
- ° to improve the performance of parastatals and to create a climate where the protections and incentives of a civil service employee system could be used to induce effective and skilled management, the underlying policies must be changed (private conversation, Rome, July 1984)*

*It must be noted here that these two World Food Council officials shared with numerous officials of the U.N. World Food Program and the U.N. Food and Agricultural Organization interviewed in Rome, as well as officers of the U.N. Development Program in New York, the almost universal viewpoints that:

- ° parastatals are detrimental to the development process;
- ° for the foreseeable future, the prospects for abolishing them are limited; and therefore,
- ° ways must be found to reduce their harmful effects.

The Importance of Pricing Policy

One of the most-mentioned criticisms of agricultural parastatals by U.N. officials interviewed in New York and Rome and by those writing on the subject is their 'inappropriate' price policy. Typical are the comments of Shamsheer Singh quoted on page A - 8.

There is much empirical evidence for such opinions. The World Bank's Sixth Annual Review of Project Performance Audits, September 1980, reviewed 27 agricultural projects undertaken by the Bank. This review demonstrated the great importance of producer prices in stimulating production by revealing that: "seven out of nine projects implemented under favorable prices achieved or surpassed their production objectives; 13 of the 18 under unfavorable prices failed to do so" (4, p. 55). Berg et al note that despite these demonstrations of "the importance of good prices, export crop producers in Sub-Saharan Africa have been heavily taxed, and prices of food crops have been systematically set at below-market levels for most of the past decade" (4, p. 55).

Pricing policies are shaped by the interacting forces and interests that determine the political, social and economic environments of each society. They therefore differ markedly between countries, depending on these factors. Often they are related to the historical origins of the marketing parastatals and the nature of the afore-mentioned development coalition that formed. For example, the post-independence governments of Ghana and Zambia, whose power bases are urban "have adopted pricing policies which have been remarkably adverse to the interests of farmers". Governments in countries such as Kenya and the Ivory Coast, where rural interests are important, have adopted policies which are, by comparison, highly favorable to farmers (5, p. 113). The caveat, "by comparison" is important, because even the 'better' policies still tax export crops and attempt to acquire

cheap food for domestic markets through artificially low prices and/or other interventions.

In general, the level of taxation in the agricultural sector and determinations as to the beneficiaries are the result of interacting rent-seeking behavior by the participants in the development coalition.

Governments engage in and respond to rent-seeking behavior. In the political reality of much of Africa, while power is often gained at the point of a gun, it is retained by neutralizing potential opposition and rewarding political loyalty.

The greatest potential for effective opposition is among the poor urban masses, who, in many countries, face the constant specter of hunger. Governments in Africa are very nervous about unrest arising from shortages of cereals and beer, and thus, of cereal grains. A history of food riots and coups in many countries justifies this concern. Therefore, governments seek access to cheap sources of staples for urban consumers. There are but two sources of supply: domestic production, which in most countries is by small-holders; and international markets.

In attempts to ensure supplies of staples at low prices governments resort to a variety of measures, usually through parastatals:

- ° establishment of monopsonistic marketing channels by making the parastatals the sole legal buyers of domestic staples at low official prices. This is the case in Kenya, Tanzania, Zambia and was so throughout the Sahelian countries prior to recent reforms in some.
- ° control of urban consumer markets by setting prices of domestic staples above the parastatal's acquisition price. The price differential constitutes the rent extracted by the State.

- ° subsidizing the parastatal's operating deficit, incurred through failure to reflect per unit operating costs in the consumer price, from the Treasury, often without any accounting.
- ° acquiring, on concessional terms, cereal grains from external sources and selling them into domestic markets in the same way as above, again extracting a rent, often enhanced by artificially high currency exchange rates which lower real import costs.

The political pressure exerted by the urban poor constitutes a form of rent-seeking, the reward for which is the amount by which their price is below that of the world market. In return, they reward the government with a non-quantifiable rent payable in terms of the absence of unrest and their political (and sometimes physical) survival.

The need to create jobs for the urban poor places additional pressures on governments. They react to this by seeking to industrialize and by building infrastructure to facilitate industrial development. Furthermore, many governments seek the goal of import-substitution to assert their post-colonial independence and to attempt to conserve scarce foreign exchange reserves.

The creation of jobs for the urban unemployed is similar to the provision of cheap food in that employed, cheaply-fed people are less likely to rebel. It is a form of crowd control. The same rent-seeking elements are thus present in this transaction as in the case of food staples.

Industrialization policies create new opportunities for rent-seeking behavior by entrepreneurs. If they can gain government assistance in lowering the costs of production and in raising the price of products, they will have extracted an economic rent. The price they pay, of course, meets the government's rent-seeking goals of political security through crowd control. Governments

satisfy the rent-seeking behavior of entrepreneurs in several ways:

- ° Since the urban poor spend a large proportion of their wages on food staples, lower food prices allow lower industrial wages to be paid. By using their parastatals' monopolistic powers, governments seek to keep food prices artificially low, satisfying not only the urban poor, but also their employers, by driving down labor costs.
- ° Where the raw materials for developing industries are derived from domestic crop production, the artificially low producer prices imposed through parastatals' monopsony powers bestow a rent on the industrial users.
- ° When industries use imported production inputs, such as equipment and raw materials, entrepreneurs seek and governments grant rents in the form of cost subsidies created by artificially high exchange rates. Rents from monopoly pricing of products of these industries are also derived from tariff protection and import restrictions imposed by governments.
- ° Provision of industrial infrastructure is a form of governmental subsidy which in itself is better regarded as a development incentive than as a reward for active rent-seeking by entrepreneurs. However, the governments are engaged in rent-seeking when they finance these developments by diverting resources from agriculture by taxing exports either directly or through exchange-rate manipulations.

The Parastatals and Peasant Farmers

If the parastatals were successful in regulating a large proportion of the domestic staples through the above methods, the

entire production/consumption system would be highly inefficient in economic terms, due to the well-known price distortions and resource misallocations resulting. On the other hand, in terms of meeting the requirements for political survival of governments and of rewarding rent-seeking by the other constituents of the development coalitions, the parastatals would have succeeded in creating public choice sufficiency. That is, they would have succeeded in increasing the utility of those segments of the society that have a primary voice in its operation.

This would mean, of course, that the interests of the peasant farmers, the producers of most of the staples, would have to be ignored. As noted earlier, this is indeed a reality throughout the region, the peasants having no effective political voice. Because of this, they are expected by governments to pay the largest price for the rent-seeking of the development coalitions:

- ° they are offered product prices far below world prices;
- ° they face world* (or higher) prices for many of their imported production inputs;
- ° they face inflated prices for consumer goods produced by heavily protected domestic industries, subsidized by the low producer prices paid by the parastatals.

In the face of these conditions of unfavorable producer prices coupled with unfavorable terms of trade, many peasant farmers have passively resisted. They have switched production to less-regulated crops. They have delivered their products to illegally-operating but effective private traders. They have smuggled their products across leaky international borders. In some cases such as in Tanzania, they have retreated to subsistence farming and to a barter economy (conversation with FAO Food Security Information Service senior economist, Rome 1984).

* Although the "world" price is used here and throughout the literature, it probably does not exist. "Border" price is probably more descriptive of the external price regime.

Bates states that the marketing of food crops is difficult to control, because:

- ° they can be processed by almost anyone;
- ° they can be transported along almost any road or path;
- ° they are grown by many widely scattered small farmers;
- ° they place no particular demands on consumers because they can be used in many forms.

Bates reports that in some countries with food-crop monopsonies, as much as 90 percent of the crop moves outside officially regulated government channels (5, p. 112).

As Creupelandt notes, "the food grain situation in most West African countries evolved from a relative self-sufficiency in traditional grains a few decades ago to an increasing deficit in the production of local cereals" (9, p. 3). Stagnant production accompanied by rapid population growth, particularly in urban areas, has led to increased dependency on imported food grains. Imports of non-traditional grains (wheat, rice) have increased, not only to make up for greater demand but to make up for the lack of availability in outside markets of traditional grains in short supply. Hard yellow corn and red sorghum were not acceptable substitutes for soft white maize and white sorghum (9, p. 3). Wheat and rice, initially acceptable, have become preferred in many food deficit LDCs, thus increasing these nations' dependency on external sources on whatever basis they can get supplies (commercial, concessional, and emergency food aid).

Conclusion

A combination of factors, not the least of which are the reactions of peasant farmers to the operations of parastatals, have led to food dependency in many nations*. Parastatal opera-

* The conditions leading to such reactions are the result of institutional uncertainties facing farmers. These are discussed in detail in Section D, below.

tions have led to large deficits and to pressures on national treasuries. The need to spend scarce foreign exchange for imported staples has led to severe balance of payments problems.

In some cases, these difficulties have led governments to rethink their priorities creating a climate for change in some countries - a climate of which multilateral and bilateral donors can and should take advantage.

CHAPTER A - VOPPORTUNITIES FOR CHANGE

The realization by some Sub-Saharan governments that state involvement in the production and marketing of food staples is ruinous to their prospects for development has led to the beginnings of change. While some, for ideological reasons, continue to cling to the belief that an effective private sector exploits the populace and that only a socialist government can "protect" them, there is a groundswell of change among others. Given the magnitude of governmental interventions in food crop markets in Sub-Saharan Africa, as shown in Table 4, and the slow rate of

Table 4. PATTERNS OF MARKET INTERVENTION FOR FOOD CROPS

Crop	Countries in Which Crop Is Grown	Countries With			
		Producer Price Controls		Legal Monopoly Over Crop	
		No.	%	No.	%
Rice	26	25	96	11	42
Wheat	12	8	67	4	33
Millet and Sorghum	38	9	24	7	18
Maize	35	24	69	9	26
Roots and Tubers	33	6	18	1	3

Source: U.S. Department of Agriculture, Food Problems and Prospects in Sub-Saharan Africa (Washington, D.C.: USDA, 1980), p. 173. Reprinted in Bates (15, p. 24).

change reported by the World Bank as recently as March, 1984 (14, throughout), this groundswell will take some time to become a flood. The prognosis for rapid change is not aided by the fact that even in countries where the added distortions caused by artificially high currency exchange rates are recognized, they still persist. Table 5 shows this for Kenya, Mauritius, Somalia and Madagascar. These countries, according to the World Bank, have been actively pursuing a more realistic exchange rate policy than formerly, including large depreciations in nominal effective exchange rates. The table shows that despite these actions real effective exchange rates remain high in Madagascar and Somalia, while Kenya and Mauritius have realistic rates.

Table 5. NOMINAL AND REAL EFFECTIVE EXCHANGE RATE CHANGES

	<u>Nominal</u>				<u>Real</u>			
	<u>Effective Exchange Rate</u>				<u>Effective Exchange Rate</u>			
	<u>1977</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1977</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Kenya	100	98	91	84	100	108	100	100
Mauritius	100	76	73	70	100	100	97	95
Madagascar	100	104	97	78	100	113	122	133
Somalia	100	90	75	58	100	142	153	124

Source: (14, p. 9)

Examples of the extremes of governmental interventions and of some progress toward governmental disengagement are summarized below. The quality of these summaries varies because all information was gleaned from secondary published sources and by personal contact with knowledgeable persons. The sketchiness of some descriptions illustrates the paucity of the secondary data bases. This points to the need for information derived directly from field observation and evaluation on which to base AID policies. In addition, it suggests that the pooling of scarce information by the multinational donors and bilaterals such as AID could be helpful to the development process. This is addressed in Chapter A-VI.

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Highly Interventionist Governments

Among the most interventionist governments are those of Tanzania and Ethiopia where the pre-eminent policy has been to eliminate the private sector. So successful have these governments been that parastatals (reportedly several hundred in each country), now control the economies.

The situation in Tanzania was described by a U.N. employee, until recently stationed there, as follows (interview, Rome, July 1984). In Tanzania, the government set out to eliminate the private sector and did so. In the staple food sector, the National Milling Corporation (NMC) was established as the sole buyer and seller of cereal grains. This corporation followed the usual discriminatory and income redistributive pricing policies discussed above. By the late 1970s, aided of course by the other parastatals, the NMC had succeeded in incurring annual interest costs exceeding its annual income. The operations of the NMC are so inefficient that:

- ° there exist grain surpluses in some rural areas and deficits in urban areas;
- ° there are few working lorries to transport grain, and even if there were, there is no fuel to operate them;
- ° neither the NMC nor the treasury have money with which to pay the farmers at even the very low official producer rate;
- ° even if they could be paid, the utility of cash to the peasant farmers would be close to zero since there are no consumer goods available.
- ° the farmers are therefore reverting to a subsistence/barter economy.

Recently, the Tanzanian government has begun to re-establish co-operatives. In the view of the expert interviewed, despite the extreme inefficiency of the government, these co-ops might

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result in pockets of relative efficiency. He concluded with the gloomy assessment that under the present government there is no prospect for change in the use of parastatals for social policy.

Despite the lessons of the Tanzanian experience, there are widespread reports that the Ethiopian government is speeding down the same path. Hunger is rampant, partly due to drought, partly due to the continuing Eritrean conflict and partly due to the inefficiencies of the parastatals. The governmental policies are so misdirected that international donors including USAID are reluctant to deal with the nation without ironclad guarantees that the aid will reach the needy through more appropriate market channels. Recently, the emergency assistance agency of FAO, the Office of Special Relief Operations (OSRO), which makes a practice of not dealing with parastatals whenever possible, informed Ethiopia that assistance was not forthcoming due to the lack of acceptable guarantees that it would be used in the way required by FAO (meeting with senior official of OSRO, Rome, July 1984).

Signs of Progress

Numerous examples of changing African governmental attitudes to the role of agricultural parastatals in their societies exist. The examples below illustrate the ways in which some Sub-Saharan nations have begun to address their problems.

Kenya

Kenya experienced fifteen years of steady growth following independence in 1963. While agricultural parastatals were in existence, as discussed earlier, their operations were much more in tune with farmer interests than in other countries. However, the government policy of making available cheap food to the urban masses resulted in low producer prices to small farmers, as elsewhere. This has been accomplished through the operations of parastatals, notably the National Cereals and Produce Board (NCPB).

Since the 1979 world oil crisis and subsequent recession accompanied by the coffee price collapse, Kenya has had problems. According to a recent Washington Post report (August 9, 1984), unemployment rose to 30 percent and food lines formed in Nairobi. Facing this classic prescription for urban unrest, the government borrowed heavily to support parastatal efforts to reduce food prices and generate employment. This triggered IMF austerity measures forcing the government to reduce imports, increase food prices and devalue its currency. Kenya also agreed on a program to cut back on its parastatals, although a recent World Bank internal memorandum reported progress in this area was slower than had been anticipated. The present (1984) severe drought has proved a major setback to progress.

However, in the opinion of the FAO Food Security Information Service official cited earlier, the current troubles could be of help by increasing the pressure for change. He described a U.N. proposal now before the Kenyan Government seeking to change the role of the NCPB to make it the buyer and seller of last resort, operating in parallel with a re-invigorated private sector. The specifics provided by this official are as follow:

- ° NCPB would be split into two autonomous departments: the "Commercial Department" which would buy and sell grains on the domestic markets on a purely commercial basis; and the "Reserve and Stabilization Department" to handle a grain reserve and to implement price stabilization policies.

Functionally, the approach would operate thus:

1. The government would establish minimum producer prices for grains, to be announced prior to the planting season.
2. The government would set maximum retail prices for the main cereal grains.

3. The Reserve and Stabilization Department would be responsible for defending these minimum and maximum prices by acting as the buyer and seller of last resort.
4. The price band will be set initially between the producer price and consumer prices expected in a free market, and will take account of regional differences in transportation and processing. (Such a price band, if expanded to appropriate levels, results in a free market).
5. All restrictions on private domestic trade in grain would be abolished, except for health and safety regulations.
6. All external trade in grains would continue to be handled by the Commercial Department of NCPB.

Mali

According to 1982 World Food Program documentation on a WFP/FAO food security project aimed at stabilizing prices and restructuring the markets for cereals in Mali,

The government has given a high priority to agriculture in these [development] plans, but it has accentuated the production of export crops such as cotton and groundnuts, the exception being represented by the Office of the Niger, which has concentrated essentially on rice production since the colonial era and which enjoys a special status (16, pp.2-3: original in French).

This approach, resulting in the commercialization of cereals in Mali being concentrated in the hands of OPAM (Office national des produits agricoles du Mali), which had for a long time a monopoly over purchase and sales of cereals at prices fixed by the government, led to serious shortfalls in domestic production, increased dependence on foreign assistance.

Convinced of the serious nature of these problems, in response to a 1980 proposal by a group of donor countries and agencies, the government of Mali accepted an innovative approach to the problem of food production and distribution. (Réunion du

28/11/80 des donateurs de céréales dans le cadre du projet: "Restructuration du marché céréalier du Mali".)

The donors pledged food aid on highly concessional terms for domestic resale by the government. The counterpart funds thus generated are specifically committed to subsidizing, over six years, the procurement and distribution of local food grains. Although starting from an incentive producer price, the objective is the gradual reduction in subsidy requirements as a result of substantial savings in marketing costs and progressive upwards adjustment in the consumer price to equal the overall costs.

The pricing plan agreed to by the Malian Government in return for guaranteed concessionary food aid is shown in Table 6, below.

Table 6. MILLET/MAIZE/SORGHUM (in Malian Francs per kilogram)

Project Year	Production Price	Level of Intervention	Effective Cost for OPAM	Consumer Price	Consumer Subsidy
1	95	60	155	85	70
2	95	80	175	120	55
3	110	80	190	150	40
4	126	80	206	180	26
5	145	80	225	210	15
6	165	80	245	245	0
<u>RICE</u> (in Malian Francs per kilogram)					
1	110	125	235	200	35
2	126	130	256	230	26
3	145	130	275	270	5
4	167	130	297	300	0
5	192	130	322	330	0
6	220	130	350	350	0

Source: (16, p. 7)

In return for the donors' pledge, the government has (1981) abandoned the grain marketing monopoly of its parastatal (OPAM) and changed its purpose to one of market coordination and stabilization including a role as buyer and seller of last resort. Through a pricing scheme similar to that proposed for Kenya, producer prices will be adjusted upward gradually to those prevailing in neighboring countries.

Reportedly, this program is successful in meeting the initial objectives. The nascent private sector is growing and the role of the parastatal has devolved to one of coordination rather than intervention (conversations with U.N. officials, Rome and New York, July 1984).

Senegal

The government of Senegal has recently requested that FAO arrange a donors' group to assist the nation in adopting a plan similar to that in neighboring Mali (World Food Program official, Rome, July 1984). This new direction arose from events leading to the 1981 abolition of the groundnut and cereals marketing board, ONCAD, which had become a serious drain on the Treasury. Mismanagement, involving a too-high price and market outlet guarantee, coupled with an effective input distribution/credit and extension program grafted onto the existing groundnut cooperative network provoked an unexpected production response. ONCAD had to purchase large amounts of sorghum and millet at higher than market clearing prices. The price was so high that financial donors approached by the FAO Office of Special Relief Operations for assistance in buying the grains for distribution to neighboring countries refused to pay it. Because ONCAD was forced to incur a large loss it was dismantled by the government, which reverted to a passive and ineffective role of administrative price fixation (interviews with U.N. officials, Rome, July 1984). Since this Senegalese request was under policy consideration when this

information was obtained, no further details were available. The hope was expressed however by the officials that USAID would participate in the prospective donors' group, as it has reportedly done in Mali.

The few examples presented here suggest ways in which the gross economic inefficiencies of the parastatals' interventions might be reduced within the very real political requirements of African governments to maintain control over staple food markets. The next chapter looks at ways in which AID policies might be directed to the continued achievement of public choice sufficiency in these countries at lower cost in economic efficiencies. Since some governments want to change their ways, and multilateral donors want AID help, the opportunities seem to be there.

CHAPTER A - VICONCLUSIONS AND POLICY OPTIONS FOR USAID

The basic conclusion that must be reached from the discussions in the foregoing chapters is that if economic efficiency is the sole criterion by which the market interventions by agricultural parastatals are judged, they are deleterious to the development process in that:

- ° their regulatory actions are inimical to the interests of the small farmers who comprise most of Sub-Saharan Africa's population, taxing them, discriminating against them and rendering them politically and economically impotent;
- ° their pricing policies, coupled with the official manipulation of currency exchange rates create price distortions in factor and product markets, leading to misallocations of resources and resultant economic inefficiencies;
- ° the existence of their regulatory powers, interpretation and application of which are often changed, provides many opportunities for rent-seeking by special interests among whom the power-elites of the government are often paramount. Effective rent-seeking creates economic inefficiencies rewarding the seekers, depriving others and imposing the hidden costs incurred in the rent-seeking process by the expenditure of resources that could be invested more efficiently.

Therefore, on the basis of economic efficiency, agricultural parastatals should be abolished wherever they exist.

On the other hand, if looked at from the criterion of public choice sufficiency, agricultural parastatals serve the political purposes for which they were created or retained by newly independent African power elites. They serve these rulers' interests by:

- ° acting as the means by which governmental policies are implemented;
- ° providing the means by which governments reward the rent-seeking behavior of their important constituencies and thereby retain political power;
- ° discouraging and sometimes punishing political opposition by dispensing or withholding favors.

Thus, to the extent that the policy objectives of governments are expressive of the utilities of those constituencies which keep them in power, attainment of those objectives means that the actions undertaken and the results achieved are public choice sufficient. They are almost certainly neither economically efficient nor as public choice sufficient as they could be, thereby leaving room for improvement in both. Since the parastatals are direct implementers of government policies, this implies that policy changes can increase both economic efficiency and public choice sufficiency.

Empirical evidence shows that while there is general agreement among those familiar with the region that these nations would be better off without the parastatals in the long run, there is also general agreement that, for reasons related to real and perceived needs of the societies and their governments, the parastatals would be extremely difficult to abolish in the short term. As Cowan states in the conclusion of his recent paper prepared for USAID, "...cereals marketing boards or agencies having exclusive control over the importation, marketing and

pricing of essential food grains will not be prime candidates for divestment because they are politically too sensitive" (7, pp.99-100).

The "bread and beer" syndrome discussed earlier is an obvious source of such sensitivity. So, in some cases, is tribalism. As a senior FAO agricultural economist pointed out, while tribal favoritism is not a generally predominant factor in the staffing and activities of parastatals, it definitely exists. In cases where tribal dominance exists, such as with the Peuls in Mali, Niger and Senegal, favoritism certainly occurs and is important to the fabric of society. This official was of the opinion that denationalization of parastatals could destabilize societies where tribal perquisites are important (meeting, Rome, July 1984).

The key, then, is for USAID to find ways to take advantage of recipient government initiatives such as those in Mali, Senegal and Kenya. If the operations of the parastatals can be modified to increase their economic efficiency while not reducing their public choice sufficiency, much will have been achieved. Bringing them closer to the objectives of the Mali design as non-intrusive buyers and sellers of last resort could achieve these dual purposes. Over time, with the assistance of donors, especially in the form of concessional food assistance designed to generate counterpart funds and as a cushion for food security while reforms occur, it might be possible to reduce the food dependency of these nations and to improve their economic condition.

Of great importance to the prospects for success will be cooperation among donors. The apparent success of the Mali program is the result of such cooperation among the donor group, including AID. However, according to a number of U.N. officials, AID's participation in that program is the exception rather than the rule. More often, they reported, USAID wants to 'do its own

thing', the result being less effective programs than might have been attainable.

Policy Options

AID's available policy options for dealing with the realities of agricultural parastatals in Sub-Saharan African nations are narrowly constrained.

1. AID could simply refuse to have any dealings with the parastatals, as the FAO Office of Special Relief Operations (OSRO) attempts to do. Such a posture would result in serious curtailment of U.S. foreign assistance programs and would in not a few cases impose severe hardships on the needy in recipient countries. In some cases, it would impact U.S. strategic interests, Egypt, a major recipient of AID assistance and a country awash in parastatals, being an example. This is, however, a possible option which bears close examination.
2. AID assistance could be made conditional as to its use by recipient countries in ways that would induce policy changes resulting in reductions in the economic inefficiencies of the parastatals. This approach is used by OSRO in cases when it cannot avoid parastatal involvement. It would have to be used with great delicacy because it could lead to accusations of U.S. meddling in the internal affairs of other nations. The approach bears closer examination in the context of specific countries, however.
3. Accepting the reality that there is little likelihood of nations abolishing parastatals outright, and recognizing the perils of "meddling", AID could opt for the "soft path" taken in the case of Mali. Cooperation with a multilateral donors' group would soften any appearance of U.S. imperialism, while the provision of technical and food assistance would provide recipient governments with the incentive to do as Mali is doing, and the sense of security to proceed.

4. The final option, which is not very appealing, is to continue with business as usual, providing ad hoc project operations and ignoring the deleterious effects of the parastatals on their domestic economies and on the prospects for successful development.

Recommendations

1. From among the above options, the third, the "soft path" of inducements for change and cooperation with other donors, bilateral and multilateral in coordinated approaches, should be chosen.
2. Since Senegal is reportedly anxious to emulate Mali, and since the U.N. agencies are reportedly desirous of U.S.AID assistance in this matter, this immediate opportunity should be explored.
3. Other latent opportunities for similar initiatives should be identified by first-hand evaluations of possibilities for and approaches to change in individual countries.

APPENDIX A - I

UTILITY, EFFICIENCY AND PUBLIC CHOICE

Walras and Pareto

Dobb, in his book, Welfare economics and the economics of socialism, discusses the evolution of the concept of utility maximizing arising from free competition, a concept which ultimately led to related theories of economic efficiency and individual/social utility. Dobb's comprehensive treatment is summarized here.

In 1874, after setting out the general equilibrium-conditions for exchange, Walras put forward the proposition that given two commodities in a market, each holder attains maximum satisfaction of wants, or maximum effective utility, when the ratio of the intensities of the last wants satisfied [by each of these goods], or the ratio of their raretés, is equal to the price" (17, p.9).

This was followed, after setting out the equilibrium conditions for production in a set of production equations, by the conclusion that when

production in a market ruled by competition [takes place], the consequences of free competition... may be summed up as the attainment, within certain limits, of maximum utility. Hence free competition becomes a principle or a rule of practical significance, so that it only remains to extend the detailed application of this rule to agriculture, industry and trade" (17, p.9).

Walras was quick to qualify the proposition as it related to production with the statement that

this principle of free competition, which is applicable to the production of things for private demand, is not applicable to the production of things where public interest is involved.

and by pointing out that "the question of the [original] distribution of services (wealth) remains open, however... an observation

of fundamental importance" (17, p.10). Walras' qualification, as Dobb points out, was not emphasized at the time and was mostly forgotten by those who quoted and used his proposition. This omission by later economists is probably the genesis of the difficulties faced by those who attempt to apply welfare economics to analysis of the real world.

Pareto developed Walras' idea that free exchange results in a maximum of satisfaction to those involved by using the familiar Edgeworth indifference curves and the notion of tangency of these curves as the condition for equilibrium in exchange. Pareto's maximum utility was attained when no additional exchange could further benefit both parties, or if only one, then without any loss of benefit to the other. His view was that until this optimum was reached, benefits could continue to accrue to both parties to the trade. Therefore, stopping short of this point, he reasoned, would result in a loss of utility to both (17, pp.10-11).

Expressed in familiar terms, the Pareto-optimum is the point at which the marginal utilities of the goods are equal to the rates of interchange of these goods, or to the ratios of their prices, if they can be assigned. However, The Pareto-criterion does not permit the case where, while further mutual gain is excluded, it is quite possible for one party to gain more than another loses. Thus, the Pareto-criterion stops short of providing answers in a region of decision-making where, in the real-world, the most difficult decisions are made. That is, it does not admit the possibility of 'second-best' decisions and 'satisficing' behavior leading to equilibrium conditions.

The Walras-Pareto position as subsequently applied has been criticized also because the maximum in question is not unique (and therefore optimal) but relative to a range of nearby posi-

tions and to the initial distribution of goods between the individuals. As noted above, Walras recognized the significance of the initial distribution, but his qualification was ignored.

With respect to the applicability of the Walras-Pareto position to production and exchange of goods involving the public sector, Wicksell, in his 1934 criticism of Pareto's maximum, says that while

it is self-evident that this so-called maximum obtains under free competition... this is not to say that the result of production and exchange under free competition will be satisfactory from a social point of view or will, even approximately, produce the greatest possible social advantage" (17, p.12).

Wicksell's conclusion is that "Pareto's doctrine contributes nothing" to the determination of greatest social benefit (utility).

Since Pareto, following immediately in Walras' footsteps, missed or chose to ignore the latter's qualification cited above, it is not surprising that others did so subsequently, relying as they did (and continue to do) on Pareto's analysis.* As Dobb says, "... one can still hear inflated claims being made, or at least implied, for the Pareto-optimum as hallmark and criterion of economic efficiency and rationality" (17, p.13).

Although there are significant drawbacks associated with application of the Pareto-principle for analyzing the problem of distribution, arising mainly from dependence on the prior distribution of goods and from the multiplicity of equilibrium positions, the principle can be and has been applied to the problem

*The reader should note that while it subsequently became fashionable in applied economics and political science to attempt to discuss utility in cardinal terms, Pareto's conception of utility was strictly ordinal, no numerical values being assigned to his contour lines, later expressed by Edgeworth as "indifference curves" (17, p.14).

of production. The well-known rules of 'economic efficiency' in production (marginal cost equal to marginal revenue, and its variants) were derived from Pareto's analysis. Dobb attributes the adaptability of the principle for use in optimizing production to the relative ease of separating the question of methods of production (the allocation of inputs with known costs and predictable effects on output) from that of the relative output of different products. This is evidently easier than its distribution analogue, separating the swapping of commodities between individual consumers from the question of the comparative amounts of those commodities which the individuals possess initially or will possess at the end of the reallocation process. On the production side, the problem is to maximize an objective quantity, the output, at least cost. The distribution problem deals with the subjective utility of individuals, increases in which can be attributed only to the totality of goods which the individual consumes, not to individual goods. With respect to the former, cardinal magnitudes can be derived, with the latter, only ordinal changes can be deduced.

Public Choice

From these beginnings, the modern theories of, inter alia, production and resource economics, and welfare economics were developed by generations of economists. One of the more recent derivatives of welfare economics is the body of theory comprising the applied field known as "Public Choice", which

... can be defined as the economic study of nonmarket decision-making, or simply the application of economics to political science. The subject matter of public choice is the same as that of political science: the theory of the state, voting rules, voter behavior, party politics, the bureaucracy, and so on. The methodology of public choice is that of economics, however. The basic behavioral postulate of public choice, as for economics, is that man is an egoistic, rational utility maximizer (1, p.1).

Mueller notes that public choice has developed as a separate field largely since the 1950's, in response to issues and needs arising elsewhere in economics. The first stimulant was the growth of interest in the properties of social welfare or social choice functions. This work focused on the problems of aggregating individual preferences to maximize a social welfare function or to provide guidance as to which social state should be chosen given the aggregated preferences of individual voters.

The second stimulant came from work on market failures published in the 1940's and 1950's which centered on the establishment of conditions for efficient allocation in the presence of public goods, externalities and economies of scale and led to the study of non-market procedures for revealing individual preferences in these situations. The public choice approach to non-market decision-making: (1) uses the general economics assumptions of man as rational and utilitarian; (2) often depicts the preference revelation process as analogous to the market, in that voters engage in exchange; and (3) asks the same questions as traditional theory. (Do equilibria exist? Are they stable? Pareto efficient? How are they obtained? How are the economic functions of society obtained?) (1, pp.2-3).

Because public choice deals in the analysis of individual preferences and attempts to aggregate them into a social welfare function in the same vein as Pareto, the same difficulties are encountered. In particular, the theory of public choice encounters the problems of multiple "optima", the impossibility of assigning meaningful cardinal values to subjective utilities, and the attendant difficulties of defining "efficiency". Mueller addresses these issues at length in his discussion of real valued social welfare functions (1, pp.173-183). His discussion concludes that social welfare functions "must be defined over cardinal, interpersonally comparable individual utility indexes or

their equivalent, if a single, socially preferred allocation is to be determined" (1, p.181). Such an allocation would be the most "efficient," in the usual sense of the word, in that it would be the "best", resulting from the equivalence of "marginal social cost" and "marginal social utility". However, as Mueller points out, the questions of how to measure cardinal utilities and what form the social welfare function should take have received scant attention in the literature except for the common recognition that the measurement and comparison of utilities must somehow incorporate the ethical beliefs of the community. He concludes that

Perhaps, this is because the economist's well-developed aversion to cardinal utilities and interpersonal comparisons discourages him from proceeding further once he discovers that these are required to specify fully the social welfare function (1, p.181).

Public Choice Sufficiency

Since we cannot measure utilities, and are left only with ordinal comparisons of the results of alternative actions in the public arena, can we define "efficiency" in public choice terms? Mueller provides a clue in his discussion of axiomatic social welfare functions where he says:

One [avenue] is to ... abandon the search for a best alternative, the social preference. In its place could then be substituted the requirement that the social choice process be fair or democratic or accord with some other generally held value.

While this approach precludes using "efficiency" as a criterion, it does suggest other ways of evaluating the quality of outcomes. We propose that given the difficulties of measurement and of finding a unique optimum, a satisfactory way to compare the outcomes of actions in the socio-political arena is to not try to apply the rules of "efficiency" to the non-measurable, but rather to use as a benchmark "sufficiency", which we define as:

Public Choice Sufficiency is the condition attained when a transaction in the public arena does not result in any loss of net societal benefit.

Under this definition sufficiency is attained even in situations where there is a loss of benefit to some participants in the transaction, provided its magnitude is equal to or exceeded by the gain in others'. Since this definition does not constrain the ranges of the possible gains and losses of participants in the transaction, these could theoretically be very large. In practice they are likely to be constrained by government policies based in concepts of equity and molded by considerations of political survival. While conditions for optimality cannot be defined under this definition, it is obvious that the greater the net gain to society, the more public choice sufficient the transaction. Although actual measurement of the social welfare function is not possible, ordinal changes can be determined by evaluating the extent to which transactions result in attainment of announced, adopted, public policy goals.

Announced, adopted, public policy goals are used as the benchmark on the presumption that they represent the amalgam of the desires of those involved in the policy process, arrived at through formal or informal ways of making those desires known. Formal mechanisms constitute voting in any of its forms. Informal procedures include direct expression of approval, as in overt political support; or the absence of opposition, in passive or active forms. The ultimate expression of active opposition occurs when interested parties are galvanized into violent actions such as the food riots that occur from time to time in African and other LDCs. This is the "bread and beer" syndrome, discussed later, that underlies the economically inefficient controls of cereal grain markets by many African rulers so necessary to their political and often, physical survival.

For example, actions that lead to increases in farmers' incomes where this is a policy goal will be regarded as public choice sufficient, as will the achievement of social tranquility by "buying-off" interest groups by rewarding their special demands. It must be noted that the attainment of public choice sufficiency does not necessarily result in economic efficiency, nor is the converse true. In fact, since most public economic policy is grounded in concepts of equity and distribution of wealth, it is unlikely to be economically efficient in the sense that its marginal cost would equal its marginal benefit, if these could be measured.

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SECTION B

EGYPTIAN AGRICULTURE AND FOOD SUBSIDY POLICY

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SECTION B - EGYPTIAN AGRICULTURE AND FOOD SUBSIDY POLICY

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SUMMARY OF CONCLUSIONS

Examination of the studies discussed in Section 4 shows that the use of econometric and linear programming models for analysis of production and marketing decisions in Egypt, the case-study country, is conceptually feasible, but of little practical utility for policy-making. Even in Egypt, a moderately well-off developing country, the data bases are so poor that it is not possible to calculate reliable response elasticities. Therefore, dependable price projections in response to policy changes cannot be made. Thus, while one can deduce the direction of ordinal changes, quantitative effects cannot be identified adequately.

The ordinal changes can be deduced from the use of economic theories without expensive modeling. Therefore, further efforts to quantitatively model the food sector of the Egyptian economy should not be pursued until the better data bases whose development is now being supported by AID are available. In the LDCs of Sub-Saharan Africa, worse conditions exist, so the same conclusions apply.

As suggested in the conclusion of Chapter B-IV, a satisfactory alternative to dependence of policy-makers on mathematical models whose sophistication is not supported by the available data bases could be the development and use of microcomputer-based, interactive simulation models. These models need not be nearly as data-demanding as the mathematical models, and can be used at least to do ordinal comparisons of alternative policies.

CHAPTER B-IINTRODUCTION

The following analyzes and summarizes the results of some recent studies of Egyptian agriculture and food policy, especially those using econometric and linear programming methodologies. The objective is not to review the wealth of Egypt-related literature, but rather to examine the validity and usefulness for AID policy purposes of conclusions based on the application of these mathematical techniques to analysis of LDC food and agricultural policies, using Egypt as a case study.

The policies on which the discussion concentrates are the consumer wheat subsidy (Table 1) and the overvalued foreign exchange rate (Figure 1). The studies chosen for analysis reflect the most recent thinking on the subject. Each is discussed in terms of its objectives, methodologies used, data base, results and conclusions. For the latter, discussion is in terms of their validity and their applicability to policy formulation and reform. Finally, an "ideal" food policy strategy for Egypt is outlined, taking into account the political and social realities of the society.

The studies examined are:

1. Cuddihy's Agricultural Price Management in Egypt;
2. von Braun and de Haen's, The Effects of Food Price and Subsidy Policies on Egyptian Agriculture;
3. Scobie's Government Policy and Food Imports: The Case of Wheat in Egypt;
4. Scobie's Food Subsidies in Egypt: Their Impact on Foreign Exchange and Trade;
5. Blond's (ed.), The Accomplishments of A California-Egypt Research Collaboration: The Agricultural Development Systems - Egypt Project 1979-1983.

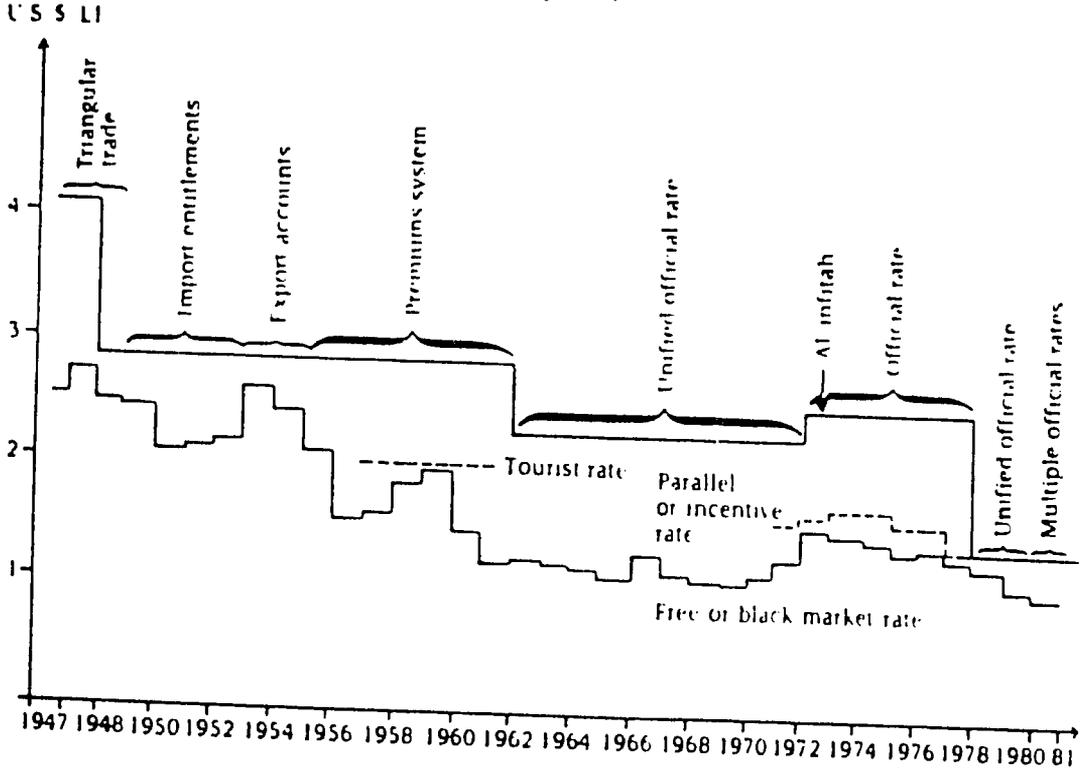
TABLE 1 - RELATIONSHIP OF WHEAT PRICES TO INTERNATIONAL AND OPEN MARKET PRICES,
1965-80 (2, p.51)

Year	Share of International Price			Share of Open Market Price	
	Procurement Price	Open Market Producer Price	Fixed Consumer Price	Procurement Price	Fixed Consumer Price
	(percent of border price)			(percent of open market price)	
1965	36.9	49.4	42.6	74.9	86.3
1966	43.4	61.5	43.7	70.6	71.1
1967	44.4	75.6	45.8	58.8	60.6
1968	50.4	92.0	58.1	54.8	63.1
1969	48.1	66.6	53.5	72.3	80.4
1970	50.1	65.2	48.3	76.8	74.0
1971	57.2	70.0	56.1	81.7	80.2
1972	58.3	69.1	56.7	84.3	82.1
1973	29.6	41.5	30.0	71.3	72.2
1974	29.0	38.5	29.6	75.2	76.8
1975	35.3	43.8	31.9	80.6	72.9
1976	39.4	45.7	36.7	86.2	80.4
1977	53.2	66.6	47.1	79.9	70.7
1978	49.8	77.2	44.4	64.4	57.5
1979	45.5	48.6	32.4	93.6	66.7
1980	41.5	45.7	28.4	90.7	62.2

Sources: These figures were computed from data provided in 1982 by the Egyptian Ministry of Agriculture, the Central Agency for Public Mobilization and Statistics, and the Ministry of Supply.

Note: The border price is calculated from values of imports, with marketing costs added and corrections made to account for the overvaluation of the currency.

Figure 1 — Exchange rates, 1947-81 (4, p.53)



CHAPTER B-II

EGYPTIAN POLICY GOALS AND IMPLEMENTATION

Egypt's policy objectives for development have been basically twofold.

1. The first set comprised an industry-led policy of economic development based on the theory that since productivity is generally higher in manufacturing than in agriculture, priority should be given to industry, with other sectors benefiting from the trickle-down effects. This led to:

- ° taxation of agriculture to provide industrial development funds;
- ° protection for infant manufacturing industries;
- ° maintenance of relatively low industrial costs through cheap food and low wages; and
- ° a full-employment policy which, in the absence of other opportunities, guaranteed government jobs to all university graduates.

The results were that the agricultural surplus was tapped, industries were protected, and the prices of basic foods, particularly bread, were kept low, despite inflation (1, p. ii). Although the government regularly assures workers that it will not impose major changes, it recognizes the need for adjustment to price changes and inflation in the private sector and attempts to protect government workers from these changes by increasing wages and pensions. Food prices are a means by which wage rates can be influenced. Subsidies are a way to achieve such influence by moderating pressure for public-sector wage increases, so the government uses them for that purpose and to promote social equity and price stabilization. The subsidy system is related also to the goal of food security (5, p. 15). The belief that keeping prices stable is of paramount importance was reinforced

by riots in 1977 resulting from a government decision to increase them by reducing subsidies.

2. The second set of policies is distributional in nature and is rooted in the revolutionary reaction to the serfdom and pervasive poverty in rural areas prior to the Free Officers revolution in 1952. As a result of land reform, physical controls on production, access to subsidized inputs, state ownership and state production (especially of fertilizer, seeds, pesticides and flour mills), serfdom was abolished, but the poverty remains. In response to pressures and changing situations, from time to time, additions and changes were made which have resulted in a patchwork of uncoordinated market interventions (1, p. iii).

Overall implementation of development has been attempted within the context of Five-Year Plans, beginning in 1960. Sophisticated econometric and linear programming models have been used to derive plans intended to reach target growth rates by allocating resources among sectors. In the First Five-Year Plan, agriculture was relegated to a secondary role, since its relative importance was expected to decline as it transferred resources to industry and provided markets for emerging enterprises. Rural incomes and productive capacity were to be maintained with the sector meeting goals such as: a proposed 30% increase in output to achieve basic objectives of food self-sufficiency; input production sufficient to meet the needs of industries, such as cotton textiles; or to provide foreign exchange for imported inputs (1, p. 11).

Cuddihy concludes in his 1980 report that "After twenty years of policy implementation the characteristics of Egypt's economy remain the same, being, rural poverty, technological inefficiency, an agrarian dominated economy and reliance on foreign support" (1, p. 13). This situation is still true in 1984. Lack of coordination between market interventions which are usually undertaken on an ad hoc political and fiscal basis and the long

run development goals of direct resource allocation is partly to blame. The planning exercise underpinning the development goals is also blameworthy, since it "...seems to have been based on inadequate (model) specification and data..." (1, p. 13).

Thus, the lack of success of almost a quarter century of development planning based in part on the use of sophisticated mathematical planning models calls into question their usefulness for the purposes intended.

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CHAPTER B-IIIECONOMETRIC AND LINEAR PROGRAMMING MODELS
AND PUBLIC POLICY

A discussion of the well-known theories of the fields of econometrics and linear programming is beyond the scope of this paper. The literature is replete with such theoretical discussions and accounts of applications of the wide range of analytical techniques and model types. Here, the discussion is on the general characteristics of the techniques, their uses for certain purposes, their data requirements and their potential limitations with respect to public policy.

Econometric Models

Econometric models range in sophistication from simple linear regression equations which seek to determine the relationships among a few variables to very sophisticated multisector models with many variables seeking to portray relationships throughout the economy. Models can be linear or nonlinear or can contain mixes of the two types of equations. They can be static, in effect taking a snapshot of a single time period or they can be dynamic, reflecting shifting relationships through time. They can be time-series, using historical data to examine how variables have behaved in relation to each other over time or predictive, using past behavior, usually with many assumptions, to project into the future. They can be empirical, reflecting conditions as they are or normative, portraying things as they "should" be. They can be almost any combination of the above, their design limited only by the imagination of the modeler.

Regardless of the type of model, there are two principal constraints to their usefulness: the degree to which the model as

specified conforms to and reflects the conditions surrounding the relationships being investigated; and the validity of the data used in the model's implementation - the "garbage in, garbage out" rule.

When the relationships between variables can be defined clearly and precisely, as in controlled experiments, the model's structure can be created to reflect those relationships exactly. Under such conditions, the specification problem is overcome, as is the data problem provided they have been obtained in a statistically valid way.

Under less-controlled conditions, probabilistic values can be assigned to relationships which have been established according to certain statistical criteria and tests of confidence. These conditions are encountered in cases such as the prediction of crop yields in response to levels of inputs, where those relationships have been derived under carefully monitored conditions. If meeting the confidence tests, these data can be used to predict the yield response from a set of production conditions - a production function model can be created. An analogous approach is applicable to the prediction of the ways producers and consumers operate to maximize their utility under free market conditions. Using "elasticities", indices of historical responses of sample groups to changes in economic determinants, (such as price) derived preferably through time series analyses, the probable future responses of members of the group to these stimuli can be predicted. Such indices as the "price elasticity of demand" (the percentage change in demand in response to a one percent change in price of a good) and the "price elasticity of supply" are at the heart of much of the microeconomic analysis which underlies macroeconomic policy. To chart correctly a policy course which will drive economic change in a desired direction, it is necessary to have a very good idea of how those being driven will react to the policy stimulus imposed. That is, policy-makers need to have available good estimates of response elasticities.

The application of econometric models to public policy becomes fraught with difficulty when non-quantifiable factors such as rent-seeking behavior of the types discussed in Section A are indulged in by the government and by others in the economy. Under these conditions it might not be possible to derive valid elasticities, and even if one could, the vagaries of ad hoc policies might render them useless for predictive purposes. This point is made vividly by Scobie, who, in one of the studies discussed below, notes that with respect to his regression analysis of the Egyptian cotton industry:

The import capacity variable in the equations for crop area is intended as a proxy for the net impact of the many policy instruments (other than real producer prices) that stimulate or discourage wheat and cotton production. These include credit rationing, input prices and availability, compulsory quotas, floors and ceilings on area sown, the structure of fines for failing to comply and the vigor of enforcement of regulation. To measure their separate effects would be an impossible task (emphasis added) (3, p. 52).

In other words, it was not possible in this econometric model to account for the effects of the government's rent-seeking behavior. Conversely, one must conclude that neither was it possible to predict with any confidence the response of others to these government policies, thus limiting the usefulness of this predictive model to evaluate policy options.

Linear Programming Models

As with econometric models, linear programming (L.P.) models vary widely in complexity from simple formulations with a few variables and constraints to extremely complex models with many variables and multiple constraint equations. They can be static, looking at a single time period in the "snapshot" mode, or dynamic, examining the outcome of alternative choices through successive time-periods. They can be used to minimize an objective function (least-cost) or maximize it (most-profit). In common

with econometric models, they can use time series data, be predictive, empirical or normative.

Their principal uses in agriculture are to plan the allocation of productive resources at the farm or sectoral level to maximize profits within the constraints of physical, financial, natural and man-made factors or to achieve a given level of output at minimum cost of inputs.

Like econometric models, their limitations lie in their design and the degree to which it mirrors reality and in the validity of the data. The data requirements are the same. The greater the uncertainty in the system being modeled, the greater the unreliability of the data and therefore of the "optimal" solution. This is especially so when a linear programming model is designed to allocate productive agricultural resources to arrive at a maximum profit solution in the face of product price and input cost uncertainties. For an individual farm model price expectations can be based on exogenous factors such as government subsidies and procurement prices, forward contracts, or knowledge of the market. It is assumed that the individual's actions will not affect the price under whatever market conditions exist. To apply the L.P. technique to a portion of or the whole agricultural sector in order to evaluate policy options, the modeler must have knowledge of the underlying relationships between quantities and prices. He must know the price elasticity of demand for inputs, and on the part of consumers, for the product, the price elasticity of supply, the cross-elasticities between inputs, between products and the relationships between components of the agricultural sector and other economic sectors. These data are the product of econometric modeling studies, but as noted above, it has not been possible in the Egyptian context to measure the impacts of various policy components or economic behavior.

The data requirements are stressed by Kutcher and Norton, as follows:

The efforts required to produce a realistic sector [L.P.] model should not be underestimated, nor should the output they produce be taken at face value. Such models are notorious data demanders, and the old adage of 'garbage-in, garbage-out' holds equally true here as for models of other operations research problems. Agricultural models cannot substitute for good data; they require it,... (4, p.343).

Even if these problems were overcome, a further drawback exists.

As Cuddihy states:

A full evaluation of the effects of administered farm taxes and subsidies must assess the effects of policy instruments on productivity and income distribution, not only in respect of the sector being examined but on other sectors as well. This requires comprehensive, sophisticated, dynamic programming modeling. However, such models are not available.

Despite these econometric and L.P. problems, Cuddihy and others have made the attempts discussed below.

CHAPTER B-IV

RECENT STUDIES

1. Cuddihy: Agricultural Price Management in Egypt

The author sets out to provide an understanding of how the policies of the Egyptian Government have influenced the productivity of the agricultural sector. His approach is to use a simple econometric model using historical data to examine how farmers have behaved in response to price changes. This is followed by use of a static linear programming model to explore farm level decision-making.

His rationale for exploring price effects is based on a continuing dispute in the literature as to whether and how prices matter. Some (including Egyptian policy-makers) consider that prices are of minor significance in influencing output because of real resource constraints. Others say that prices are of major importance but that empirical validation is difficult because of modeling problems (1, p.28).

The Econometric Model

The model used is the well-known partial adjustment model of a normal form, "using ordinary least squares under the usual assumptions that the residuals are randomly distributed with mean zero and fixed variance - covariance matrix" (1, p.35).

Another assumption is that the 'coefficient of expectation' for prices is equal to 1, meaning that farmers would base their production plans on the absolute expectation that announced

government prices would come to pass. This term is key to the estimating equations.

Both of these are unreliable bases for the analysis for these reasons.

° The use of ordinary least squares for analysis of time series for agricultural products in a controlled environment is likely to result in statistical biases arising from serial correlations in the data. The usual precautions to detect such biases are the use of the Theil-Nagar test or, at the least, the Durbin-Watson test (6, p.43). Since neither was carried out, the statistical validity of any conclusions reached by the study would be questionable.

° The assumption of 100 percent reliability on the part of government commitments flies in the face of experience. Furthermore, the complex three year rotation cycle on most Egyptian farms precludes the use of a coefficient of price expectation of 1 since prices are determined at least annually, while cropping decisions are locked into the rotation.

Without mentioning the above shortcomings, the author concludes that: "the signs (of the coefficients) are in the right direction"; "there may be some negative correlation between wheat and rice/maize"; "close examination of the estimates reveal (sic) some problems such as symmetry of correlation between crops" (1, p.38). Finally, the conclusion is reached that "despite problems of interpretation of certain cross elasticity estimates the values clearly lead us to reject the null hypothesis that there has been no response to price changes in Egypt" (1, p.41). Following this questionable conclusion, "... it is stressed that these results are positive (descriptive) and do not depend directly on behavioral assumptions as to maximization of a profit or consumption objective."

In other words, the statistical evidence led to the same conclusion that mere observation would have, and has confirmed that farmers respond to price, but we do not know by how much. Therefore, a linear programming study was undertaken.

The Linear Programming Study

The aims of the L.P. study were:

- ° "to establish the extent to which the typical Egyptian agricultural unit ... might be expected to react to changing farm gate prices for its marketed output."
- ° "to explore the implications of certain policy measures for resource allocation and for pricing of both factors and products in the Egyptian agricultural sector."

The L.P. model used was one constructed for a "typical" 3-feddan (3.1 acres) farm. The objective function seeks to maximize the farmer's net profit. The model is static, therefore not allowing any consideration of lags in decision-making or feedback between years. No non-linearities are assumed to be present (1, pp.42 - 50).

Several criticisms of this formulation and its assumptions arise:

- ° the static model is a "snapshot," whereas agriculture is dynamic (c.f.1, p.42);
- ° in the face of government interventions as practised in Egypt, non-linearities are certain to be present (c.f.1, p.42);
- ° data on crop production coefficients from field observations and farm budgets in the U.S. are unreliable, more so in Egypt (c.f.1, p.44);

- ° the assumption that "no output is sold on the black market and that rationed inputs are not resold" flies in the face of reality (1, p.45).
- ° the assumption that the data collected from the Sohag Governate (1977) is "fairly representative of the sector" is questionable because "Major differences exist among the governates in terms of governmental intervention in the agricultural sector" (9, p.4).

Under these assumptions, there were nine parametric runs of the model, each representing the removal of a government control with the usual ceteris paribus assumptions (1, p.50). It is concluded that the basic model, representing the tightly-controlled actual conditions was valid, since its solution approximated actual resource allocations. This, as the author points out, was expected since the model was built to reflect those conditions (1, p.51).

The outcome of parametric run 7, in which all interventions were removed, including all price controls, production quotas, marketing restrictions, human and animal production constraints and input controls is instructive. The optimal solution for the 3-feddan "representative" farm was to move the land completely into production of vegetables in the winter and cotton in the summer. Thus, under the assumptions made, the average 3-feddan (the dominant size in Egypt) farm would cease to grow any cereals or livestock feed. That might be fine as long as the "representative" farm was not joined by all other "representative" farms in the country, in which case certain adverse price and socio-political results would be likely.

The author, however, draws positive inferences from the shift of the "representative" farm and its peers to high value export crops (vegetables) in the winter and foreign exchange earning cotton in the summer. He notes that this model which maximized private profit and foreign exchange earnings is also the

least cost in terms of administration requirements and transfer payments (1, p.53). Under the conditions imposed on the model, this is the logical outcome, but it occurred because "Both our econometric and the programming approaches are subject to certain limitations. For instance, demand elasticities have been ignored" (1, p.54, emphasis added).

The latter omission means that the market-shaping effects of the conversion of most of Egypt's farms away from domestic cereal and livestock fodder production, away from the 3-year rotation and toward total export production have been ignored. As Kutcher and Norman, discussing the usefulness of various types of L.P. models for policy analysis, say:

the . . . models, which assumed that demands were not responsive to price [as Cuddihy's does by ignoring demand elasticities] were normative. Normative models are useful for tracing out the potentially attainable frontier with respect to specified goals, but of course they do not indicate which policy instruments, if any, may lead to a position on the frontier (4, p.336).

This renders questionable the validity of the results of the econometric and linear programming models for policy purposes.

Study Conclusions and Recommendations

The author reaches conclusions and makes recommendations, the discussion of which makes no reference to the econometric and L.P. studies undertaken. He concludes that:

- ° "many of the agricultural strategies and policies adopted in Egypt have not succeeded in reaching their objectives; and
- ° the strategies and policies themselves may well be unworkable and in the need of restructuring" (1, p.119).

He recommends that:

- ° since "there is simply no way Egypt can become self-sufficient in food under any system of known technology" policy should be to concentrate on those products in which the country has a comparative advantage, specifically cotton and horticultural crops;
- ° to facilitate better project planning and management in general, an improved agricultural data base must be developed;
- ° because the data system will take time to be developed, to improve the short-term position, administered prices should be moved closer to international levels and where possible controls should be abolished (1, p.121).

2. von Braun and de Haen: The Effects of Food Price and Subsidy Policies on Egyptian Agriculture

These authors attempt to examine essentially the same questions as Cuddihy. They follow the same format, outlining the historical and present environments for Egyptian agriculture and attempting to solve econometric and linear programming models. Their approach is to look at the effects of price policies and government intervention on different parts of the food system. We will address here only the effects on agricultural production.

Econometric Model

An attempt to compute price elasticities of supply using an econometric model in the fashion of Cuddihy is described. However, the authors report that:

Econometric estimates of the supply response undertaken for this study were rejected because they were inconsistent on the aggregate sector level. Modeling the price

responsiveness of yields seems to be even more difficult than modeling area response (2, p. 29).

They conclude, on the basis of their research which failed to give plausible price elasticities for wheat, rice, maize and cotton for the period 1960-80, that Cuddihy's elasticity estimates are not valid either (2, p. 29). Because of major changes in the nature of inputs during the period:

... there is no simple way to assess acreage and yield response to price changes in Egypt in the short or medium run. The agricultural data available do not permit a satisfactory econometric analysis The effects a major change in the pricing system would have on allocation can hardly be derived from an econometric model that relies for information about the actual system on past data alone (p. 29).

Linear Programming Model

Having rejected the possibility of calculating valid response elasticities through econometric modeling, the authors proceed to develop a static, sectoral L.P. model the objective function of which is to allocate resources to maximize farm income across the agricultural sector.

The limitations of static models and the data requirements for sectoral models in terms of the response elasticities have been outlined above. Without them, price responses to production changes, demand responses and supply responses to altered prices cannot be predicted. Since the authors have already rejected their own and other estimates of price (and implicitly, other) elasticities, it is difficult to imagine from where the data would be derived to run a "model (that) analyzes the production effects of the different price regimes" (2, p.30). While detailed discussion of the effects of price policies and government intervention on parts of the food system other than agricultural production is not undertaken by the authors, it is worth noting that:

° a computation of the effects of commodity price distortions on agriculture and societal welfare required terms defined as "supply and demand multipliers measured as the relative change of quantities of a commodity in response to changes of its own price..." (2, p.45). These are but elasticities, whose validity had already been rejected by the authors.

° With respect to price distortions in the wheat market caused by government actions "the model calculations roughly follow the ups and downs of the official series, but differences between 1977 and 1979 are large" (2, p.52). These discrepancies are not adequately explained, suggesting problems with the estimates.

Study Conclusions and Recommendations

Having gone through the exercises of formulating and calculating models, the authors reach general conclusions which bear no significant relation to the analyses and which probably could have been reached without them.

They state that "a removal of price distortions might be needed if agriculture is to grow more rapidly (but) price policy should not be viewed as a panacea for Egypt's rural development and national food problems." They do not make other recommendations.

Use of the Study by USAID

In light of the shortcomings of the analytical procedures investigated and used by von Braun and de Haen, it was interesting to find that econometric models and static linear programming models of the types described by them are cited by USAID as the basis for quantifying the effects of price reform and therefore, for AID policy, in the 1986 CDSS for Egypt (9, p.21).

3. Scobie: Government Policy and Food Imports: The Case of Wheat in Egypt

Scobie's objective is to develop a set of structural equations which describe how Egyptian wheat imports are determined. He pays particular attention to foreign exchange to examine the nature and importance of any foreign exchange constraint on food imports, a situation often thought to exist in LDC's.

The author cautions that his objectives are only to study the historical record and not to project or attempt to simulate alternative policies. He notes that "If the future brings circumstances and policies not included in the range of past experience, then whatever understanding is gleaned has limited value ... The study endeavors to establish that ... past experience is rich and varied ..." (3, pp.15-16). A further caveat concerns the sometimes questionable data, quoting another author:

'One cannot help express grave concern about the permanent damage done to the import data as officially reported by Egyptian authorities. A high percentage of the discrepancy is attributed to wheat imports' (3, p.16).

Surveying the works of other authors on the demand for U.S. wheat in LDC's, including Egypt, Scobie points out the difficulties in deriving meaningful price responses in cereals markets dominated by government trading monopolies (3, p.31). In other words, he points to the problem of obtaining response elasticities discussed previously.

The econometric model used by Scobie explicitly recognizes that:

- ° decisions about the level of wheat and other imports are part of the balance-of-payments adjustment mechanism;
- ° wheat imports reflect domestic pricing policies; and

- ° cotton pricing policy is an integral element because cotton both competes for domestic resources and is a source of foreign exchange.

The model comprises a series of linear equations organized into a balance-of-payments adjustment block, a wheat import block and a cotton export block. This model was estimated using data for 1949-79. To construct the necessary variables, "a consistent detailed breakdown of the balance of payments is required" (3, p.45). The author notes that these data were not available - the data he used were a mixture of net short-term government capital flows and exogenous receipts (3, p.45). Therefore, his model does not now reflect the balance of payments, instead using data based on a different set of numbers.

Solving the wheat import block of equations, the author arrives at purported income elasticities for wheat and wheat products. His conclusions are hedged: "The actual estimate of 1.58 may overstate the true value if the price of wheat has fallen relative to substitutes. Lack of data precluded their inclusion in the equation" (3, p.47). Further, in the context of official understatement of the actual rate of inflation, "To the extent this is true, the estimate of the demand elasticity will be overstated" (3, p.51).

With respect to the cotton export block, the author raises the further problem cited earlier, his inability to measure the separate effects of government policy instruments that stimulate or discourage wheat or cotton production (see p.8-11, above).

We have therefore a set of results which had they been derived for use in policy formulation, would have limited value, the data problems being too great. This does not mean the methodology is incorrect; rather, the data are not adequate for the analysis.

Policy Implications

Notwithstanding the shortcomings posed by the database, the author draws these conclusions having policy implications. He makes no recommendations.

- ° Wheat imports are highly unresponsive to changes in the level of foreign exchange earnings. This is consistent with past practice and current Egyptian policy of maintaining wheat and wheat product availability stable.
- ° To maintain domestic wheat prices at an average of 47 percent of the world price during 1949-79 and producer price at an average of 67 percent, imports were increased, thus diverting an average of \$150 million per year from other imports.
- ° "Had Egyptian consumers and producers faced the average world price, commercial wheat imports would not have been needed [assuming aid shipments were unchanged]" (3, p.56).

The validity of this conclusion is questionable, relying as it does on knowledge of the price elasticities of demand and supply, estimates of which we know to be unreliable at best.

- ° The additional commercial imports required to maintain domestic prices below world prices creates an excess demand for foreign exchange. Therefore, the foreign currency price of Egyptian pounds (the exchange rate) must rise through administrative allocation in the foreign exchange budget.
- ° "A closer alignment of producer and consumer prices with the cost of imported wheat would relieve the budgetary pressure of the subsidy scheme and lessen its destabilizing impact on the importation of other goods. Directing

wheat subsidies to the poorest Egyptians would alleviate the social and economic effects of a wheat policy more aligned to the true costs of consuming additional wheat."

This conclusion is valid and has been reached by others, including the Egyptian Government. But implementation is very slow.

4. Scobie: Food Subsidies in Egypt: Their Impact on Foreign Exchange and Trade

The purpose of this study is to examine the hypothesis that because Egypt relies on food imports to maintain domestic prices below "world" prices, a rise in the "world" prices or a fall in export earnings could lead to a reduction in imports.* If food prices are maintained, this instability could be transmitted to the imports of industrial raw materials and capital goods. This would have a destabilizing effect on both the rate of utilization and the rate of growth of the capital stock (5, p.9).

The author constructs a model of the monetary aspects of the Egyptian economy, introduces terms representing internationally traded and untraded goods, inflation and balance-of-payments components. The resulting model "consists of four structural equations to which are added stochastic error terms. These four equations represent the domestic inflation rate, the balance of payments, the black market exchange rate, and the demand for real money balances. Using annual data, 1947-81, these equations are estimated using two-stage least squares, yielding "income elasticities" for real money balances in the same range as estimated by others (5, p.25). However, fitting of data from the balance-of-payments model to yet another standard monetary model of exchange

* Although "world" price is frequently used throughout the literature, it probably does not exist. "Border" price is more descriptive of reality.

markets yielded confusing results in that the model, based on free movements of goods and capital, performed better (coefficients close to expected values and high R^2 values) when restricted to a period of extensive state interventions (5, p.27). Since the models were designed to show that interventions restrict performance, but showed the reverse, these anomalous results throw doubt on the validity of the models, the data and the usefulness of the results for policy formulation.

The author's next step was to use a "complete systems approach" to import demand. This required, inter alia, price indices for categories of imports (food, machinery and manufactured products). Since these were not available, international (U.N.) indices not specific to Egypt were used on the assumption that they would be highly colinear with prices paid by Egypt (5, p.37). Estimation of own-price elasticity of demand for imported food gave values much above those expected. Scobie concludes that "the United Nations price indexes may not be as appropriate a proxy for the prices actually paid by Egypt as had been hoped" (5, p.39). He then constructed a direct food price index for Egypt and estimated an own-price elasticity not significantly different from zero, concluding thereupon that "This is consistent with the expectation that the subsidy scheme would lead to an inelastic demand for food" (5, p.42). The validity of this claim cannot be tested since there is no justification given by the author for the selection of the components of the price index.

Splitting the food group into wheat (and wheat flour) and re-estimating produced an own-price elasticity for wheat not significantly different from zero and for the other food imports of -2.13. This result is consistent with the highly subsidized nature of the wheat market (5, p.43).

Subsequent analysis of the effect of imported food prices on the importation of other commodities and on industrial output

yielded indications that the dependence of the food subsidy scheme on imports results in the allocation of scarce foreign exchange in the order: 1. food; 2. raw materials; 3. capital goods (5, p.45). However, the analyses leading to this conclusion are in part dependent on estimates of cross-elasticities, "the signs and significance of which were erratic" (5, p.45). Therefore, while the author's conclusion, "it is likely that the food subsidy scheme has imposed real costs on all non-farm sectors in Egypt" is intuitively and probably empirically correct, the analyses presented provide no reliable means of measuring these costs or of quantifying policy options.

Conclusions and Implications for Policy

- ° Food subsidies make the demand for various foodstuffs much less responsive to prices than it would be without them. Changing the level of subsidy per unit and thus the consumer price will have little effect on total consumption. Since this effect is most marked for wheat any desired reduction in wheat imports would be pursued more effectively by limiting access to the subsidized commodity rather than by increasing the consumer price (5, p.47).
- ° The full cost of food subsidies has been met by:
 - (i) central government allocations to the General Authority for Supply Commodities (GASC) which is responsible for the purchase and delivery of imported foodstuffs;
 - (ii) artificially overvalued exchange rate, against the U.S. dollar, for food purchases. This rate has often been below that for other commodity transactions and always below the own (free) exchange rate. Therefore the full social opportunity cost of the foreign exchange used in acquiring imported foods has not been reflected in the reported costs of the subsidy (5, p.47).

- Instability in the foreign exchange sector (price increases for food imports or decreases in foreign exchange) is transmitted by the food subsidy scheme to other imports. The effective decline in foreign exchange is met first by postponing imports of capital goods, then by reductions in raw materials and finally by small decreases in imported foods. Thus, food consumption is maintained at the expense of output and non-farm employment and of capital formation. Neither the existence nor size of the cost have received much attention.

5. Blond (ed.): The Accomplishments of a California-Egypt Research Collaboration: The Agricultural Development Systems - Egypt Project 1979-1983.

This publication reports on a large number of studies undertaken under the aegis of a U.S.AID-funded joint project of the University of California at Davis and the Egyptian Ministry of Agriculture. The ambitious overall objective of the project was improvement of the agricultural sector's performance. During the course of the project working papers on food and pricing policy were produced. These papers, representing interim stages of the planned whole, are summarized in the report examined. The "whole" was not completed due to the termination of the project by AID. What follows here is based on the report's summaries of relevant study areas. Evaluation of the individual papers was precluded by their unavailability.

Food Security and Agricultural Price Policy

Sixteen working papers are referenced under this title. Their reported conclusions are as follows.

- ° A linear programming model using static data from the East Delta subset of the 1976 Farm Management Survey and comparing these with the 1982 Updating Survey of two villages in the region investigated farmer responses to removal of government interventions at the most general levels, [which presumably had occurred between the surveys] (6, p.124). While the responses reported shed some light on the subject, the data were so localized as to make the analysis of minimal use for national policy-making; nor was that the intention.
- ° A log-log regression model relating changes in output of various crops to product prices in a number of regions showed that production is price-responsive. Such log-log models produce estimates of elasticities, but in this case the model also showed that these responses vary regionally, not only in magnitude but in direction in response to climatic and cultural conditions unrelated to price (6, p.125). This suggests that the estimation of response elasticities on a nationwide basis, as attempted in other studies discussed above might lead to erroneous results due to masking of these regional differences. Such response elasticities would be misleading if applied to national policy. Furthermore, as noted on page B-24, above, these estimates are highly unreliable.
- ° A linear programming model of the agricultural sector examined the optimal production response of farmers in Lower, Middle and Upper Egypt in the face of fixed and assured domestic food supplies. The reported results resemble recommendations made by Cuddihy (1) and others that, if policy-makers are willing to accept foreign-exchange instability, the best course for Egypt is to concentrate on cash crops such as cotton, vegetables, citrus for export and berseem for domestic livestock production. On the other hand, if foreign-exchange risk-aversion is preferred, the model shows that Egypt's best course is the opposite one of abandoning these cash crops and concentrating on basic food crops. Further, the model shows

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that self-sufficiency in basic grains for Egypt is technically and physically infeasible and that this goal should be abandoned, a recommendation also made by Cuddihy. These conflicting outcomes suggest that the usefulness of the results for policy purposes is limited.

While the shift to cash crops for foreign exchange to pay for imports including cereal grains would make sense, the validity of the model is called into question by the devised risk-aversion strategy of shifting entirely away from cash crops to food crops. Given that Egypt cannot become food self-sufficient in any case and that abandonment of cash crops would drastically reduce foreign exchange earnings, the "solution" makes little sense. This implies poor model specification or bad data or both.

Price Policy and Food Subsidies

This study, comprising 10 working papers, had the major objective of analyzing and evaluating the efficiency and equity effects of existing price and distribution policies for some major subsidized and rationed food commodities. Three main research tasks were undertaken:

1. to analyze the effects of subsidy policy on the welfare of producers and consumers;
2. to determine the effect of existing policies on consumption and distribution;
3. to examine the economics of law enforcement as related to food policy (6, p.146)

Considered were: a) subsidized and strictly rationed commodities such as sugar, food oil, tea and rice; b) subsidized and semi-rationed commodities such as beans, lentils, frozen meat, poultry and flour; and c) subsidized and unrationed commodities - bread. The welfare costs of wheat and wheat products, based on 1979 figures, but calculated for 1980-81 were as shown in Table 1.

Unfortunately, these welfare losses are calculated on the basis of "assumed" price elasticities of demand and supply. Therefore, while they suggest the magnitudes of demand-side welfare losses (caused by pricing the commodity below its cost to the economy) and of supply-side welfare losses (from pricing domestic wheat production below import prices), they are not reliable data for policy purposes. However, they do tell us in an ordinal sense that the greater the price elasticities, the greater the welfare losses.

Table 2. Welfare Costs of Wheat and Wheat Products at Various Assumed Price Elasticities

Assumed Price Elasticities of Demand	Demand Side Welfare Loss (million LE)	Assumed Price Elasticities of Supply	Supply Side Welfare Loss (million LE)	Total Social Welfare Cost (million LE)
-0.50	177.740	0.66	59.456	237.196
-0.50	177.740	0.50	41.344	219.084
-0.35	133.153	0.25	18.344	151.497
-0.10	41.749	0.10	6.873	48.622

An attempt was made to determine the extent to which subsidized foods are used for "unintended" purposes such as livestock feed (6, p.148). Although the specific quantities diverted from direct human consumption could not be determined for the area sampled, the percentage diversions were:

wheat	7.18%
flour	5.10%
Balady Bread	6.10%
Fino Bread	3.06% (p. 149)

How these percentages were derived is not described by the editor.

While these data are not reliable for quantitative policy-making they do reveal that a not-insignificant amount of diversion occurs. These diversions are a rational response of

livestock producers to a situation where the subsidized prices of wheat and wheat products are below the prices of competing feed-grains. Since the opportunity costs to the nation can be expressed in terms of lost foreign exchange, the setting of prices at levels which would discourage diversion is an important policy consideration.

To investigate the degree to which rules requiring mandatory delivery quotas and obligatory land allotments to crops are violated, a survey of rice and cotton farmers was carried out. The results indicated that violation of the law and concomitant payment of fines was pervasive. Violators of rice delivery rules tended to be those closer to villages where opportunities for private sale exist. The same was true for violators of the cotton minimum area allotment rules, since proximity to markets makes growing other crops attractive (6, p.150).

In summary, the conclusions of the studies on price policy and food subsidies are that:

1. Subsidies have caused rapid increases in consumption of some commodities. To the extent that the resources used to supply these commodities could have been used to produce a preferred commodity, consumers are worse off.
2. The government's favoring consumers over producers has led to producer disincentives, lower domestic production and greatly increased import-dependence.
3. Price subsidies encourage diversion and waste of the commodity because it is so cheap.
4. Although food policy may be intended to benefit the poor, in fact, rich and poor alike, especially in urban areas, participate in the programs.

5. Enforcement of the policies is costly to the government, using resources that might have been put to better uses to improve society's welfare.
6. Subsidies of basic foods have created excess demand for them leading to chronic shortages, consumer queues, hoarding incentives and others costly phenomena.
7. While other sectors of the Egyptian economy are growing, agriculture is stagnating (6, p.150).

Conclusion

The author's conclusion with respect to the Egyptian situation serves not only effectively to summarize the findings of the University of California Egypt Project, but also the conclusions arising from evaluation of the other papers discussed above:

It is one matter to discuss the various dangers of the system, but it is quite another to provide quantitative measures of the magnitude of the welfare loss to society. Much needs to be done in this area... Better data and better estimates of the price elasticities of supply and demand for the particular commodities are needed to estimate more accurate measures of the welfare losses involved. It would then be possible to make even more definitive statements about whether the policy favoring equity is "worth it" in terms of efficiency losses to the economy (6, p. 150).

Thus, once again the limitations of the data have been stressed, especially the need for better response elasticities. Without better data, the use of sophisticated mathematical models for policy analysis is inadvisable as it cloaks highly questionable results in an undeserved aura of rigorous respectability. A more useful and less deceptive approach might be to abandon the search for precision and to seek instead to gain insights into qualitative and ordinal effects of policy options by the use of interactive simulation models.

Such models can be formulated to allow the decision-maker to interact with them through the keyboard of the microcomputer on which they run. The user provides most of the data input, in response to queries on the screen. This allows great flexibility in the choice of data values, a particularly useful attribute when poor data bases require the use of "guesstimates". This approach lets the user test a range of values chosen for their "reasonableness" or for some other subjective reason. The range of solutions derived can be compared in an ordinal way and the "best" can be chosen for closer examination. While not providing mathematically rigorous outcomes, this "quick and dirty" qualitative approach, which can provide guidance as to policy alternatives even in the absence of a good data base, bears closer examination by AID. Such interactive models would be useful to demonstrate to Egyptian policy-makers the likely outcomes of alternatives chosen by them, using their judgements as to "reasonable" data. Further, the "what if" comparisons could be made more quickly and more cheaply than the qualitative information derived from the foregoing econometric and L.P. models.*

The next chapter examines an "ideal" food policy for Egypt and looks at some of the constraints on its implementation. Current approaches and some innovative ideas of others are also discussed.

* For an example of the type of "what-if" simulation model that could be developed and applied to policy evaluations in the face of poor data bases, see Marceau, Water System Strategic Planning Model: Users' Manuel (8).

CHAPTER B-VFOOD POLICY STRATEGIES FOR EGYPT

Although limitations of model specification and the very poor database render unreliable their quantitative results, the foregoing studies produced qualitative information useful for deducing ordinal relationships between variables. These, summarized below, are of value in the choice of policy objectives and options for Egypt.

Qualitative Information and Ordinal Relationships

- ° The goal of food self-sufficiency is not attainable, therefore the goal should be food-security on the best terms possible.
- ° Egyptian farmers are price-responsive, but the precise extent of the responses is not known due to the impossibility of calculating reliable direct and cross price elasticities for products or inputs. These elasticities are, however, not zero.
- ° Egyptian consumers are also price-responsive, but nor can these responses be predicted precisely because direct and cross price and income elasticities of demand cannot be calculated accurately. These elasticities also are not zero.
- ° The commodity price distortions created administratively by setting producer prices below border prices can be calculated from available statistics (which in Egypt are unreliable). These distortions are considerable.
- ° The subsidized consumer prices of food commodities cause shifts in consumption and substitution between foods. They

also cause substitutions between food and non-food expenditures as well as diversion of some foods to unintended uses. Because the price and income direct and cross elasticities are not calculable the precise effects cannot be determined.

- ° The official, overvalued exchange rate for the Egyptian pound discriminates against exports by implicitly taxing them and encourages imports by subsidizing them.
- ° There are undoubtedly "ripples" of distortions created in the non-agricultural sectors of the economy through the primary distortions in the agricultural sector, but these cannot be quantified.
- ° Egypt has an apparent comparative advantage in the production and export of cotton and horticultural products. While this cannot be quantified precisely, the potential appears to be present for development of significant export industries.
- ° Production controls through acreage allotments, and mandatory procurement of products limit farmers' ability to respond to market opportunities, and exacerbate the distortions caused by price manipulations.

Options for Food Policy Strategy

The Egyptian Government is faced with the "bread and beer" syndrome endemic in the Sub-Saharan nations, discussed in Section A. Its response has been and is to ensure food security for its people and through that, political security for itself. The ways in which this has been done in the past have created economic distortions and inefficiencies which have incurred considerable costs to the Treasury. The challenge for Egypt is to devise strategies to reduce the economic inefficiencies while maintaining the quantity and cost of foods, especially bread, within a range which will not create effective political opposition or

trigger adverse actions such as riots. Furthermore, this must be done within the requirement for long-term food security.

A suggested "ideal" strategy for achieving these objectives is outlined below.

An "Ideal" Food Policy Strategy

A. With respect to producers, the government should:

- 1) gradually remove production disincentives by:
 - ° raising producer prices to border prices and then allowing them to settle at market-clearing levels*;
 - ° raising the prices of inputs to levels reflecting their costs of provision to the outlets through which they are distributed to farmers and allowing farmers to engage in free trade of these inputs;
 - ° abandoning production quotas, acreage allotments, forced procurement and restrictions on exports;
- 2) facilitate the export of commodities in which Egypt has a comparative advantage, such as cotton and horticultural products, by establishment of standardized grading, packaging and labelling and by active promotion of products in export markets. The government should act only to coordinate these programs, leaving management to producer organizations empowered to regulate in accord with the standards (A combination of Abbott and Creupelandt's advisory and promotional and regulatory marketing boards described in Chapter A-2 of this report).

*Critics of the agricultural policies of developing countries often recommend that parity with "world" prices is required. The "world" price is difficult to estimate, if it even exists, since it would be a composite of various spot, futures and concessional prices. In the case of Egypt, the "border" price is a more usable concept. This price is heavily influenced by the concessional prices offered through foreign assistance programs, particularly PL480 Title I. Therefore, the border price will be below a conceptual "world" price based on fully commercial prices.

The outcome of these actions would be an economic environment in which farmers would be free to react to market forces. Their price-responsiveness would move the allocation of productive resources to a more efficient combination than exists under the existing conditions.

B. With respect to consumers, the government should:

- 1) gradually reduce the direct wheat and wheat products subsidy by:
 - ° raising consumer prices to reflect border (and domestic producer) prices and then allowing them to settle at market-clearing levels, through the private sector;
 - ° replacing the direct price subsidy with a cash compensation system, using a combination of direct cash payments based on recipient income levels and on cash wage increases where the wheat subsidy is an identifiable component of the wage structure.
- 2) controlling price swings by:
 - ° establishing a flexible, managed margin between the border price and the domestic market price, which will vary in size inversely with border price movements. It could even become negative in the case of large border price increases.
 - ° maintaining a government buffer stock of wheat replenished by purchases or domestically-produced grain at floor prices based on the border price. Purchases would be made from domestic producers when the border price was below an administratively determined level. Sales would be made into domestic consumer markets when border prices went above a certain level. This would further dampen the effects of border price changes and would contribute to the food security of the nation by maintaining a domestic production capacity.

C. With respect to the treasury, the government should:

- 1) abolish the implicit tax on exports and the corresponding

subsidy on imports by abandoning the artificial "official" exchange rates depicted in Figure 1 (p. B-5), by allowing private exporters to trade at exchange rates and by transacting its government wheat imports at the same real rates;

- 2) make up the revenue lost by explicit taxes on high-value agricultural exports and apply the new revenues to the cash subsidies for wheat and wheat products;
- 3) reduce the cash subsidy requirements by implementing an effective means test for eligibility for the subsidy.

The Effects of the "Ideal" Strategy

Implementation of the strategy outlined would:

- ° shift Egypt from the infeasible goal of achieving food security through self-sufficiency to the achievable one of reliance on a mix of domestic production and imports;
- ° fulfill the government's politically necessary social contract to assure an inexpensive supply of wheat and wheat products by the greater use of market mechanisms than at present;
- ° reduce price and regulatory disincentives which encourage farmers to produce the "wrong" crops and to misallocate inputs;
- ° improve Egypt's external balance of payments through export of high value crops;
- ° redress the welfare imbalance between rural peasants and urban consumers by reducing the transfer of funds from the former to the latter resulting from the combination of low producer prices and the wheat subsidy;

- ° provide more market choices to consumers by providing a cash subsidy which could be spent on alternatives to wheat (and to all foods) rather than the price subsidy which forces (over) consumption of wheat and its diversion to unintended animal feed uses;
- ° reduce the drain on the treasury.

Recent Approaches

U.S. policy is to couple PL480 Title I assistance to annual self-help agreements negotiated between USAID and the government of Egypt (GOE). The agreement for 1984 contained a multi-year scenario for upward adjustments in farmgate prices toward "world" price levels. Self-help measures proposed by the U.S. for FY1986 are based on the 1984 proposals which are as follows:

- (i) increases in farmgate prices for the major government monopolized export crops and for wheat grain;
- (ii) reduction of subsidies on feedcorn and beef imported by the public sector;
- (iii) reduction of fertilizer subsidies;
- (iv) increased private-sector marketing of fertilizer and other agricultural chemicals;
- (v) studies of and modification to the system of ration cards for consumers in order to reduce total food subsidies*;

*Red ration cards were introduced in 1983 for higher income Egyptians restricting their access to subsidized commodities fully available to the holders of the existing green cards. The commodities included are sugar, tea, cooking oil, soap, detergents and rice. Wheat remains fully subsidized to all (9, p.11).

(vi) production campaigns for new crop technologies to increase the effectiveness of agricultural extension (9, pp. 89-90).

The objectives of the self-help approach, if achieved, would move the Egyptian food policy toward the "ideal" outlined above. However, while the directions in which policy changes can move the sector can be determined, the magnitude of the effects cannot now be quantified using existing data. This, despite the assertion by AID/Cairo that the use of "simultaneous econometric analysis of historical data" and "estimation of a static linear programming model of farming systems in Egypt ... provide a basis for quantifying the changes in land area to be re-allocated to each crop" (10, p.21). The reasons why the econometric models and the particular linear programming model referred to (that of von Braun and de Haen) cannot be used for useful predictive purposes have been discussed in Chapter B-IV.

Fortunately, despite the above, AID recognizes the need for better data collection and analysis in planning for the 1986 program, stating: "Data collection and economic analysis, provided by foreign and local technical assistance, would be integrated into the research/extension and farm-credit projects" (10, p.27).

With respect to reducing the wheat subsidy, in addition to the proposal described in the "ideal" strategy above, it has been suggested that a "generalized" coupon scheme be examined as an alternative to the existing means-tested ration coupons. The principle would be similar to the cash subsidy scheme proposed above in that the consumer would pay "world" price and be compensated for the excess over the "social contract" price with a coupon. Thus, the consumer price would be cash plus coupon, the value of the latter presumably to be reimbursed to the seller by the treasury (AID internal memo). While this idea merits further consideration, beyond the scope of this paper, it appears to suffer from these drawbacks:

- 1) If the seller is the government, through its stores, the only difference from the present price-subsidy system would be the additional handling costs for the coupons;
- 2) If the seller is a private retailer, the additional handling costs are incurred, the treasury reimburses the retailer for the coupons and the consumer still faces the same subsidized price as before.

Unless the coupons were made redeemable for cash, which would approach the "ideal" policy concept, this approach does not seem a significant advance, on the surface. Even if they were redeemable, psychologically, the consumer would still be facing the low subsidized price. On the other hand, the direct cash subsidy or cash wage increase proposed in the "ideal" policy would force the consumer to allocate his financial resources in the face of apparent full market prices for competing alternatives. This seems psychologically advantageous to the GOE.

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SECTION C

SOCIOPOLITICAL AND ECONOMIC DYNAMICS OF PUBLIC POLICY
IN FOOD DEFICIT LDCs

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SECTION C - SOCIOPOLITICAL AND ECONOMIC DYNAMICS OF PUBLIC
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CHAPTER C-I

INTRODUCTION

The range of political-social-economic interrelationships which constrain the food policy options available to most food deficit LDCs is examined below. The existence of such constraints has been a persistent problem facing developing nations and the various bilateral and multilateral agencies with which they work.

Conventional analysis to date has not been sufficient either for understanding the political, social and economic interrelationships influencing development policy options available to LDCs, or for taking more effective policy and program action steps. This is particularly true with respect to the roles in food production of the private and public sectors. If the sometimes conflicting goals of these nations are to be met, it is vital to look closely at ways they can satisfy their economic needs in politically and socially tenable ways.

The discussion that follows looks at the issues from a public choice perspective.* First, an overview of the social, cultural, political and economic characteristics of LDCs is undertaken. Then follows a more detailed examination of the ways in which non-food assistance to the agricultural sector influences the formal and informal institutions within which these charac-

* Public choice theory is discussed in Section A of this report. As defined there, public choice is the application of the principles of economics to the field of political science. It thus seeks to examine and explain the ways political decisions are made in the context of the utility-seeking motives of individuals and groups.

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teristics are shaped, that are in many ways the keys to successful development of LDCs. The primary emphasis is on Sub-Saharan Africa and in that context on the most pervasive formal institutions, the agricultural parastatals.

While the discussion is in terms of food deficit LDCs in general, it must be kept in mind that they are not a homogeneous group. Two-thirds of "serious hunger" in the world occurs in only nine countries - India, Bangladesh, Indonesia, Pakistan, the Philippines, Cambodia, Brazil, Zaire and Ethiopia (1, p.6). Yet even this short list shows that great differences exist. Brazil, an industrialized nation considered to have graduated from LDC status, has little in common with Bangladesh, except for millions of hungry people. In addition to this group of nations are the Sahelian African and many other Asian and Latin American countries suffering unacceptable rates of hunger. No one model for development can be applied to such a broad array of societies, cultures, economies and climates. The need for flexibility in policy and problem-solving techniques is obvious, as is the enormous scope of the problem.

CHAPTER C-IICHARACTERISTICS OF LDCsSociety and Culture

It is impossible to separate processes of development from socio-cultural values. Most LDCs are either what anthropologists call traditional or transitional societies. Traditional cultures are those which reflect a deep faith in age old values. They have neither been substantially exposed to nor have accepted modern ways. Transitional societies are those passing from traditional to modern value systems, representing a blend of new and old. The transitional stage of sociocultural development is not always easy or successful, at least in terms of social stability. However, modern values can and do frequently co-exist with traditional mores, in many instances reinforcing each other (2, 3).

Unfortunately the literature is scant with respect to social and cultural constraints on policy options in food deficit LDCs. Yet experience and allied studies point to some major considerations that are reviewed here.

a. Individuals and Diet

Diet is clearly a cultural attribute and one that is often hard to change. What people eat is not always conditioned by taste as much as by availability of foods and habit. Yet there are notable instances where basic foods consumed for centuries have been replaced in very short periods (4). The implication is that while tradition may be strong, rational economic choice will prevail. Rather than being wedded to custom, people who have had no choice available have continued to consume and produce the

same foods. (On the other hand, simple observation leads to the conclusion that in many instances traditional foods continue to be consumed, though not necessarily as dietary mainstays. Ethnic foods eaten in the U.S. are particularly compelling evidence of this pattern.)

Status is also associated with food. Individuals select certain foods, even though they may be more expensive, to convey an image of status (4). Such choice might not be economically rational, but it certainly has strong social pull. And as income elasticities increase, so does the range of choice and selection of prestige items (1, p.47 et. seq.).

Production of food is also cultural as well as economic. Tradition and religion have dictated that only certain foods be cultivated and consumed in many areas of the world, especially in food deficit LDCs. But so has climate, knowledge, technology and capital. What appears at first blush to be an anthropological phenomenon might, after deeper analysis, actually stem from economic reality.

b. Institutions

Just as individuals behave in certain ways, their cultural and social institutions collectively reflect history and values. Introducing "modern" methods into production systems might make technological sense, but it can meet resistance from cultural institutions and practices. Cooperatives in the Andean highlands furnish a classic example. Contemporary thinking suggested that if campesinos pooled their labor and land in cooperative fashion, they could achieve greater productivity and profit. What the model failed to take into account was the fierce independence of many campesinos and their deeply ingrained individualism which made it virtually impossible for them to work together as members of a cooperative (5).

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Similarly it is worth noting the existence of culturally appropriate technological practices which might shock the conventional development specialist. Oscar Lewis found that:

...the exclusively hand agriculture of the hoe produced more per unit of land area, but that the input of human energy was relatively greater. The issue is, therefore, not the amount of yield but the ratio of human activity to output. (5, p.77)

The lesson for developers is that before discarding out of hand traditional practices and institutions, it is best to see how they can be incorporated into the development process.

In addition to such cultural and social (informal) institutions, there exist, of course, formal institutions or organizations. Many of these are public institutions, the operations of which are often critical to the development process. Nowhere is this more evident than in Sub-Saharan Africa, whose colonial legacy established a strong institutional presence in the form of parastatal organizations controlling national economies. Robert Bates has written persuasively about the ubiquitous and primordial role these institutions have played in African development concluding that

They define, in short, the rules of the game which determine the values of outcomes which can be sought by alternative courses of action. (6, p.140).

Because of their importance, in Chapter C-III, we examine in detail the role of institutions in development and the effects of non-food development assistance on them.

c. Urbanization

Consideration of individuals and institutions within a society and culture naturally leads to a discussion of urbanization in today's world. While in Africa the demographic tide from rural areas to urban centers has not begun to approach the proportions reached in many parts of Latin America and Asia, the existence of an urban bias in development makes review of urbanization essential.

While there is some debate in the literature, it is reasonable to say that rural dwellers import with them into the cities relatively strong cultural practices and institutions. Food patterns are included in this process. While new urban residents begin to change their dietary habits, they also continue to eat many of the foods they consumed in their rural homeland. Part of this is conditioned by preference and part by availability of certain foods and by price, which at least for the marginal classes, is the prime factor in food selection.

Urban bias in food development policy is also responsible for greater food imports to meet a growing demand for food (1, p.272). This too means a shift away from traditional foods. In the countryside peasants either buy available traditional foods or cultivate them. The latter option is not so easily exercised in the city. The result is a change in dietary patterns and demand. In public choice terms, people are once again making essentially rational decisions, given consumption alternatives, leading many LDCs to increase food imports, which in turn has affected domestic food production.

Urban needs and demands are therefore a key issue in formulating food policy options. Agriculture is the economic base for many LDCs, especially those in Africa. Yet they are becoming increasingly urban societies with urban values and a concentration of urban political power. As the literature reflects so consistently, rural economies support the predilections of urban society, while leaders ignore or do not pay enough attention to the economic consequences of satisfying urban demands. Despite the need for change, the political realities of many LDCs, as discussed in detail in Section A of this report, make it impossible for leaders to shift abruptly from present social and political arrangements and survive.

Politics and Policies

Policy options available to most food-deficit LDCs are constrained primarily by political factors. There is relatively little direct social pressure restricting policy alternatives, apart from that related to the need for technologically "appropriate" development practices and to the effects of continuous and growing urbanization. However, despite the apparent lack of overt pressures, it is important to remember that societies in a transitional stage tend to be fragile as they move toward the stability of a broadly accepted set of new values.* Social pressures are often reflected in political pressures created and fed by changes occurring in the societies of the nations of Africa as a result of their recent independence from colonial Europe.

The truism, "governments do not grow food; only farmers grow food" (l. p.78) is not always fully appreciated by politicians and policymakers - nor can it be in many instances, for there is a host of competing constituencies within the food system.

a. Power Sharing

Although public choice theory advances the proposition that the greater the number of choices among alternative institutions the greater the social and political harmony, this lesson is not always understood or accepted in LDCs. In most LDCs the range of alternative institutions is necessarily limited, as is the spectrum of policy options for development. Power tends to be concentrated in the hands of a political and economic elite, although in some instances material resources and social services have

* It must be emphasized that many new African nations are more often than not artifices, being the result of old colonial demarcations and not reflecting traditional tribal geopolitical configurations. Hence it is not unusual to have within a nation historic sociocultural tensions between ethnic groups which from time to time flare into political conflicts, some of which can be violent, such as the tragic case of the Ibos in Nigeria.

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been distributed more or less equitably among the people. The impact of this political power configuration on individual decisions, specifically those which have to do with food production and consumption, is very important. Left to his own devices, a farmer will respond rationally to perceived market forces. Similarly, left to his own devices the consumer will make the most rational economic choice available. However, in the case of the former, government controls much of the access to, price and availability of inputs for production and the selling prices. With respect to the latter, LDC governments often control directly or indirectly the availability and price of foodstuffs, whether or not they are imported or domestic, and the amounts in which they are sold. This, however, is not unique to the Third World, but happens in many nations. The key issue is one of the degree and type of control.

It is not the purpose here to list the "virtues" of a free market and the "evils" of a controlled economy. The objective is to show how food deficit LDC governments intervene in the food market and what the consequences of such actions have been. Whatever the extent or nature of the intervention, the government is responding to a set of essentially political pressures. In some instances, such as in that of Tanzania's Ujamaa policy, political decisions governing the national economy have stemmed from an ideological commitment of the ruling party. In Kenya, on the other hand, such decisions tend to be influenced not by ideology but by straightforward power politics and economic vicissitudes. The motivation for such political decisions is, in a certain sense, immaterial because the end result is an impact on the individual, be he producer or consumer. The policymakers/politicians and bureaucrats are simply balancing political demands and attempting to protect their own self-interests.

While optimally they try to arrive at a variable-sum response to competing political pressures, more often than not there is a zero-sum result, or at least it is perceived as such by the

"losing" faction. Thus while a decision to permit the import of hard wheat for making French bread in Peru catered to popular demand for the product, it "impeded the participation of the Andean peasants in supplying the growing national demand for bread" (8, p.13). This constant need to balance the demands of conflicting political constituencies has had a substantial impact on developing policy options for food deficit LDCs.

Conflicting goals, also a reflection of this problem, constitute another obstacle to viable policy options for development. Not only are there goal conflicts with respect to different political groupings, all seeking a larger share of the political and economic pie, but governments themselves find it difficult to set consistent goals and establish effective priorities. One of the most obvious examples of this dilemma is the one which has confronted many African states: the push for urban industrial development at the expense of a productive agricultural sector.

Too many LDCs see industrial development as the key to growth. They fail to understand that the human and resource infrastructure necessary for successful industrialization is frequently not present. Compounding this initial misjudgement has been a corresponding "undeveloping" of the agricultural sector along with an ironic proliferation of government projects to boost food supplies. Politically what is happening is that a growing urban base is demanding more food at stable (i.e., low) prices. When the consumer benefits, the farmer loses and the government is caught in the middle. That is, public policies which depress prices favor one goal, urban calm, over another, rural development. The results are containment of potential urban unrest, a stagnating agricultural sector and the removal of a major incentive for food production. The political power of urban centers along with LDC proclivities to industrialize form a virtually irresistible pressure to place urban interests ahead of rural needs. Only crops for export figure prominently in most LDC priorities. As may be imagined, such crops are produced

either by large landholding rural elites or state-owned enterprises (7, p.60).

LDCs by their very definition have a broad spectrum of needs and few resources to meet them. In terms of food production and consumption, there are several simultaneous pressures which can be responded to in policy options. Unfortunately, opting for one or more policy priorities over others often takes a significant human and/or economic toll. LDCs have the unenviable task of selecting policies dealing with at least five major parameters of the food system: food security (or overcoming hunger); nutrition; food distribution, which is usually tantamount to income distribution; consumer protection or price affordability; and producer protection, or creating incentives for increased production. These goals lamentably conflict all too frequently with each other and indeed constitute an enormous set of constraints on the range of policy options available to LDC governments. This problem will be seen even more clearly in the following section. Basically, the twin horns of the dilemma are satisfying producer needs for critically needed development, on the one hand or horn, and providing for the quintessential basic need of food for a largely poor population on the other.

b. Policy Enforcement

Distribution of power is reflected in public policy. However, it is not always formal policy which measures the true locus of power. More often than not that is revealed in the enforcement of policies. That is, policy statements and even statutes express more of an ideal - what it is the state considers to be at least of symbolic value - than a reality - what actual power arrangements are. Thus the analyst needs to look beyond mere pronouncements and examine enforcement of policy to determine political realities. Although such an analysis is beyond the scope of this paper, it is important to note this

analytical verity in order to keep what is essentially here a "think piece" in perspective.

Many if not most LDCs gained comparatively recent independence from colonial Europe. Frequently this liberation was accompanied by formulation of policies designed to achieve a national equity and equality characteristically inimical to the interests of colonial rule. Hence statements are made, plans are written and laws are enacted which, on their surface, seek to rearrange the old power relationships of colonial times and guarantee the people social and economic justice. All too frequently, however, a foreign master is replaced by an indigenous one and the social, political and economic inequities of the past continue relatively unchanged. In other instances, there really is a radical change from the past. The point is that it is essential to review political output rather than input to arrive at valid assessments of political constraints on policy options in food deficit LDCs.

In many LDCs facts fly in the face of rhetoric. In Tanzania, for example, the official line is that the government will not use its power to ensure the economic fortunes of private investors. "... nonetheless it does seek the formation of local (private) manufacturing capabilities and, as part of its policy of socialist development, it seeks to promote state-backed industries. The result has been the adoption of a structure of commercial protection that shelters local (private) industries" (7, p.63). A variation of the theme can be found in Mexico. The ejidatario system of land reform prohibits accumulation of large parcels of land. Each peasant or ejidatario is supposed to have a limited amount of acreage which cannot be subdivided, rented or in any other way have its tenure altered. Yet all these regulations have been broken, basically in response to what could be labeled market demands or economic exigencies. While the system was conceived in such a way as legitimately to protect campesinos from unscrupulous persons, it ignored human reali-

ties. "If a system has unrealistic rules, the rules will constantly be broken" (9, p.180/1).

Speaking of Africa, Bates sums up succinctly part of the conflict between policy goals and actual enforcement.

... policy choices, made to serve a new vision of the public good, have created a network of self-interest which has proved more enduring than the faith which that vision initially inspired. (7, p.105)

This has come about in large part because in LDCs the central government is normally the single strongest socio-political institution. With some notable exceptions, particularly in former British colonies such as pre- and post-Manley Jamaica, the private sector has been weak and composed of little more than fledgling industries and politically and economically weak types of minifundia. The absence of strong countervailing political and social institutions has naturally allowed, if not virtually forced, the central government into a position to mount public enterprises and otherwise dominate economic activity (10, pp.5-6). This fact, of course, has led to an economy, including food production, which is constrained significantly by political considerations.

As governments and their policies are so controlled by urban interests and rural elites, it is no wonder that the range of policy options, certainly with respect to achieving improvements in the lives of rural marginal populations, is so limited and even contradictory. For example, food subsidies ostensibly used to maintain lower prices for urban consumers, and protect export crops (i.e., those of the agricultural elite), devastate the small farmer and retard development (1, p.207/8).

Despite numerous negative policy impacts on the poor in LDCs, it is interesting and encouraging to observe that the "capacity of African rural dwellers to exploit alternatives available to them in the marketplace is well established" (7, p.84). They migrate to urban areas to supplement incomes, alter crop mixes to

avoid onerous regulations and taxes and seek extralegal markets, among other things. If LDC governments are seeking greater development it is paradoxical to note that they violate the theory that political openness (i.e., competitiveness) is a necessary accompaniment to economic growth (11, p.74).

Finally, it is important to highlight a problem which tends to plague so many of the parastatals which are so prevalent in food deficit LDCs: mismanagement. While poor administration is by no means the exclusive domain of public enterprise, it does seem to flourish in that environment with special vigor. The corruption in and mismanagement of public enterprises constitute serious barriers to selection and enforcement of more effective policy responses to critical development problems in food deficit LDCs. The autonomy, political power and economic position of parastatals all combine to make them a separate and formidable politico-economic force. The ubiquity and success of their power may be explained in Bates' observation that "The politics of the pork barrel supplant the politics of class action" (7, p.118). Of course, the student of politics cannot help but be struck by a certain similarity between the present pork barrel and suppressed class antagonism in Africa and in the U.S., at least in its earlier history. But the price which is being paid for class calm needs to be scrutinized very carefully. While it is doubtful that parastatals will go away or be removed, as they are such an integral part of the political and economic skein of LDCs, ways need to be found to reform them, whether through competition, internal revision or both.

Economic Constraints

It should be evident by now that it is impossible to separate social from political from economic factors in any examination of constraints on policy options in food deficit LDCs. The economy of a nation does not operate in splendid isolation from political policies and rules and social values. On the contrary,

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it reflects those phenomena. But it also is a substantial force unto itself. Certainly in the area of food production and consumption the economy is primordial, at least in the sense that a nation above all else must feed itself. In LDCs, especially in highly rural places such as Africa, food and agricultural development go beyond mere subsistence, or should.

a. Food Production

Production of food depends on a variety of inputs. The availability and price of these inputs is determined in large measure by internal government policy, as well as by external factors. In food deficit LDCs most inputs, such as equipment, technology, credits and even fertilizers, are imported. The prices for these inputs depend on world markets, which are beyond the control of the importing country, and on import duties which are internal politico-economic decisions. Prices of inputs such as land and labor, which are indigenous, are also subject to internal policy decisions.* These prices influence what farmers grow, but they are not the sole determinant. Prices for outputs also condition farmer decisions regarding what to produce. And these prices are determined for the most part by government policy rather than market forces, at least in LDCs. Whatever the type of influence, the fact remains that the state in food deficit LDCs plays a leading role in setting prices and thus determines what is produced (1, Chapter 3).

This situation, which exists basically throughout the LDC world, has, of course, a major impact on production incentives. Government policies which in essence maintain low prices for food either deter production and create more urbanization, place the small farmer on the very edge of the economy, provide the means

*There is an unfortunate tendency in LDCs in Africa for governments to subsidize inputs to large and not small farmers (7, p.55).

for rural elites to consolidate their economic power or result in all or some of the above. On the positive side of the ledger, urban dwellers are able to achieve a certain degree of food security through lower prices.

Put in the most calculating terms, a hungry population does not provide a sufficient human resource base for development. But as so much hunger, at least in Africa, is confined to the rural areas, and as so many food deficit LDCs look toward industrialization (an urban interest) for economic relief, there does not yet seem to be enough incentive for changes in present food policies to promote more development in the countryside. Indeed, it is perhaps most ironic that the state often sets itself up as a rival to peasant farmers. Not only does it subsidize inputs for large private farmers, in many nations it also has set up government farms which compete against the small farmer (7, p.45/6). Many if not most of the crops produced on these large private and public farms are for export. The additional irony is that the peasant farmer ends up subsidizing industrial development and urbanization by supplying low cost food to the cities while the large estates accumulate capital and needed hard currency from the sale of export crops. Such development seems to be one-sided and working against the interests of the small farmers.

b. Food Marketing

The same kinds of incentives and disincentives exist in the marketing of food as in production. In most LDCs parastatals market or regulate the marketing of food. Their actions create price distortions and uncertainties. Lele describes the severity of the problem: because of

...the fragmented nature of the national market and extreme unpredictability with which national grain boards often export, import, and distribute grain, even the best marketing experts can do little more than resort to their astrological abilities in predicting prices and determining the project's price policy (12, p.107).

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As already noted, the world of parastatals abounds with mismanagement and inefficiency, exacerbated by insulation from the culling process of the marketplace. Here a convergence of political and economic constraints on policy options occurs, because, especially in Africa, parastatals are so deeply a part of the historical legacy that they are hard to change. The bureaucracy and its constituents have a strong hold on policymakers.

c. Food Consumption

A very clear and important dichotomy exists between rural and urban areas in LDCs because they have a large rural population and so much of their economies are agricultural-sector based: there are still hundreds of millions of peasants who survive on subsistence farming, whose "value of production is governed not so much by market forces as by demographic pressures and the compelling need of the...farm population to feed itself" (9, p.12/13). The rest of the population, both urban and rural, must be fed at prices they can afford. Governments perceive that only state intervention can achieve this. They intervene mostly on the side of the urban consumer by maintaining low producer payments and consumer prices. Not only is the small farmer discouraged from producing by virtue of the high cost of inputs, but equally by prices which make it unprofitable for him to sell in the legal market, and by the uncertainties inherent in frequently changed governmental policies.

Therefore, landless peasants lose employment opportunities as small farmers produce less and supplement their incomes outside the farm sector, or simply curtail production, as costs for inputs outstrip income. Timmer et al have been very thorough in their analysis of this issue. They have reached two important conclusions. First,

A strategy that pumps significant purchasing power into rural areas through incentive prices for agricultural produce can have a large, secondary impact on employ-

ment generation if other policies on prices and wages are favorable to labor-intensive production of goods and services (1, p.144).

Second and most important is the finding that

Countries that have emphasized broadly based programs for small farmers have been more successful in achieving both their production and their consumption goals. Bimodal rural systems with a few large, modern farms and many small farms have sometimes achieved agricultural growth, but most have perpetuated or even exacerbated widespread poverty in the countryside (1, p.145).

d. Financial Considerations

In many cases there has been slow growth in agriculture (8, p.33), along with an expansion in the demand for food as population growth rates in LDCs continue to soar. The gap between these two trends has been compensated in part by cheap food imports. Given the rise in the costs of credit, the severe debt crisis faced by LDCs and their need for hard currency, to many, food imports are no longer an attractive alternative. But, having created favorable expectations on the part of urban dwellers, rural elites and the industrial sector by consciously depressing food prices, LDC governments are likely to find themselves hard pressed to arrive at economically and politically viable alternatives. The traditional route of soft loans from bi- and multilateral assistance agencies is no longer easy, especially in light of conditions set for credit agreements. Thus, the policy noose is beginning to tighten for many food deficit LDCs.

Restrictions on imports to conserve foreign exchange result in even greater industrial protection. At least for the consumer, state use of "commercial policy to promote the formations of their nation's industrial and manufacturing capabilities" results not only in a restriction of foreign competition but also competition within the domestic market especially in Africa (7, pp.63, 66). Such policies are frequently implemented through parastatals. While inherently not necessarily unproductive, their

history has shown that in all too many instances they are inefficient and even highly corrupt, the example of Petroleos Mexicanos (PEMEX) being perhaps the most egregious of recent memory (13).

As noted earlier, the formal and informal institutions which shape and provide a framework for the LDC characteristics discussed above are in many ways the key to successful development. Their nature and roles and the effects of non-food agricultural assistance on them are discussed in the next chapter.

CHAPTER C-III

INSTITUTIONS AND NON-FOOD AGRICULTURAL ASSISTANCE

Institutions

Usually, the term 'institution' means formal organizations, both public and private, which play an integral part in the economic development, political direction and/or social value system of the nation. This definition includes government agencies, research organizations, universities, cooperatives and private corporations and companies.

But there are non-organizational institutions as well which require scrutiny if we are to understand the full range of institutional effects of assistance. For our purposes, these are defined as the rules, conventions and values by which a society and polity operate.

Non-Food Agricultural Assistance

Non-food agricultural assistance includes, inter alia, credits, technology transfer, research, extension services, equipment, infrastructure such as roads, irrigation systems and electricity, and training and technical assistance. Obviously, this non-food assistance is essential for effective development. Just as clear is the fact that this kind of aid is developed, housed in and disbursed by various formal institutions, from banks to universities to government agencies. Hence, if it is to be utilized with maximum efficiency and efficacy, these institutional capacities have to be reinforced.

AID has recognized the fact that "hardware" projects do not by themselves constitute development. It makes no sense to have dams if there are no trained personnel to operate them. More than anything else, development is predicated on institutional capacity. Without this basic human and organizational infrastructure, little permanent, effective development can take hold (16, p.4 et. seq.).

It is instructive to borrow from "Better Project Designs for Capacity Building", an unpublished United Nations Development Programme (UNDP) paper which discusses "three generations" of capacity or institutional building*.

The first generation was characterized by donor-dominated and operated development projects for LDCs, with little recipient input except to train counterpart staff at the end to take over in turnkey fashion. The notion of institutional building is inchoate at best.

The second generation approach represents a radical conceptual break from the past and places focus on recipient institutions, subordinating donor presence and inputs. Emphasis is placed on internal organizational environments and creation of self-sustaining operations.

The third generation is almost a natural iterative step. It concentrates on the external or market environment which helps to shape institutional focus and functions. It is very flexible and moves from technology adaptation to creation. The goal is also a self-sustaining system or institution, but one that is thoroughly tested to prove real capacity exists (UNDP, pp. 1-15).

*The paper cites an artificial distinction between capacity and institution building. In this report, the terms will be used interchangeably.

All three generations are at work in LDCs. AID reportedly is attempting to move toward the third generation. As a part of reaching that goal, it is critical to identify measures, at least conceptually, by which current projects can be evaluated in terms of institution building, new projects more accurately designed and tested, and guidelines for future development policies refined.

Measures of Impact

The range of institutional impacts as a consequence of non-food agricultural assistance is broad, as would be expected. They are, of course, internal and external to formal organizations. These effects, while not necessarily easy to measure, nevertheless can be reliably evaluated. Less manageable are measurements of impacts on social conventions and values. Most difficult is establishment of causality of donor aid on changes in social and political environments. This is not to say such analysis is impossible. But given the quality of data bases in LDCs, and the inherent methodological difficulties of measuring sociopolitical phenomena, expectations need to be kept realistic and findings interpreted accordingly. Still, much can be established and accomplished, certainly for purposes of policy.

1. Quality and Quantification

It is neither desirable nor useful here to engage in a discussion of the exotica of qualitative versus quantitative approaches to social and policy science research. It is desirable and useful to note in general terms the strengths and weaknesses of each.

The neatness and manageability of numerical analysis is both compelling and useful. In project evaluation it is particularly helpful, yet limited. The variables described below lend themselves to quantitative analysis in many instances. Indeed, in

part they have been suggested as indices because of that attribute. However, institutions exist in a qualitative world and impacts on them can be understood only by examining them in a political, social and cultural context. This requires a grasp of organizational and human dynamics, neither of which are suited to the precision of quantitative measurement. Therefore, qualitative analysis must be used, because without it any study of institutional impacts would be incomplete at best (15, pp.10-11).

2. Internal Impacts

Non-food agricultural assistance to LDCs obviously has some kind of impact on host country institutions, whether they be formal organizations or sociopolitical conventions. This subsection lists several indices for measuring impact internal to formal organizations. Impacts external to these institutions are treated next. Finally indices for studying linkages between the two sets of institutions are presented.

° Number and Types of Relevant Government Organizations

This is a relatively simple measure of impact. It suggests that where non-food agricultural assistance is substantial, it might affect the numbers and types of institutions dealing with such assistance, either through consolidation, elimination or modification. This in turn might condition how efficiently (and effectively) such aid is disbursed to meet goals.

° Resource Allocation - External

What types of resources, in what amounts, and to whom they go is an output measure indicating project effectiveness. Are allocation decisions public choice sufficient and are they economically efficient are important questions.* Bates has correctly

* As defined in Section A of this report: "Public choice sufficiency is the condition attained when a transaction in the public arena does not result in any loss of net societal benefit".

observed that "Institutional environments offer chooser values in addition to economic values: membership, office, prestige, etc." (6, p.140). What is the pattern of resource allocation, and what are the motives for such results, are the questions which need to be asked. Quantitative assessment of allocation tells us where resources go; qualitative analysis tells us why and how.

° Resource Allocation - Internal

Essentially the same questions and methods can be applied to allocation of resources within institutions: funds, personnel, facilities, equipment and symbols. The classic indicator is budget: who fares best within the budgetary process. Clearly funds are a critical measure of impact. Foreign assistance can add to or be used as a substitute for local revenues, thus distorting otherwise internally determined priorities and resource decisions. Shifts in program accounts can tell much about goals, priorities and impacts. So can distribution of non-cash resources as well as placement of non-cash foreign assistance such as technical assistance and training decisions. But just as is true of other indicators, much of the impact of non-food agricultural assistance must be measured by inputs as well as outputs. That is, if internal resources distribution is considered an output of decisions, then the analyst needs to examine the reasons (inputs) for decisions made. Using public choice theory, it is possible to broaden the conceptual approach so that analytical judgements are not confined to economic efficiency alone, but take into account real world political and social factors.

° Organizational Structures

This too is a variable which can be quantified and described in structural and even functional terms. To complete the examination it is also important to look at the historical evolution of institutions, taking into account political, cultural and social

factors conditioning their design and operation. As Annex I to the AID Egypt CDSS for FY1986 notes, it is more productive to shore up existing institutions than to create new ones, which generally fail (16). Thus, how the structure and functions of an institution work need to be evaluated in the local context. Failure to do so will lead to misunderstanding of institutional problems and consequently to design of unworkable solutions. Once again, it is important to assess rational choice and maximization of utility in other than sheer economic or organizational terms.

° Organizational Purposes

The purposes for which an organization is established can serve as a guide to impact, as can changes in institutional goals. Changes in policies and programs resulting from foreign assistance may be measured partly by associated modifications of stated institutional purposes. But there frequently is a slip between the cup and the lip. What an institution actually does is the true test of its purposes. Mere statement of intention is not enough. Where an institution allocates its resources and which constituencies it responds to are indicators of its real purposes. In other words, its public choice sufficiency is determined by results rather than by intentions.

° Organizational Attitude

Public choice analysis would assume that prevailing institutional attitudes are those geared toward self-preservation and self-advancement. The policy, public administration and organization literature support that contention. While institutional attitude and changes in it are a measure of impact, they are also keys to determining impact. That is, they are both cause and effect. Institutionalized attitudes in organizations determine in part operational and program efficiencies, but training and technical assistance, for example, can change attitudes.

Indeed, a reshaping of attitudes inimical to economic and political efficiencies is a cornerstone of institutional development, within the context of the local environment.

° Personnel

A major institutional debility in formal African organizations, especially the parastatals, is the lack of trained personnel (14, p.39). Evaluators need to know this in order to assess non-food agricultural impacts in terms relative to this reality. The other side of this coin is overmanning and sinecures. While in pure organizational and economic terms this makes no sense, to governing officials and bureaucrats who must face political realities, maintaining supernumeraries is a sine qua non for political survival. Parastatals constitute an escape valve from the pressures brought about by party cadres whose demands must be met. Politically, this is entirely rational behavior. For Africa especially, it has become routine. The donor agency has to face this fact, like it or not. In some instances, such as the Westinghouse Management for Development Project in Egypt, highly successful strategies and tactics have been created to deal with the problem.

° Management

Management, at least in the public sector, is a cause and an effect of institutional inefficiency. Managers are selected in part because it is thought they will carry out political policy. When this indeed is the case, more often than not productivity suffers and foreign assistance is mismanaged. Analysts need to understand the competing pressures on such managers wrought by political loyalty versus organizational efficiency. It is easy to measure productivity. It is less easy but more important to measure what causes low productivity. And it is most difficult of all to come up with mutually agreed upon solutions to satisfy both political and economic demands. As many experts have noted,

short term political exigencies tend to override long term economic requirements, causing a vicious cycle in which many, if not most, parastatal managers find themselves. In Africa, where with few exceptions countries depend almost exclusively on agricultural production for economic survival, this necessary lack of diversification has created an especially acute situation. Management capacity and performance need to be evaluated in light of this situation.

° Policy and Planning

Institutional planning and policymaking constitute a major output of the formal decisionmaking system of an organization. Much can be learned of the impact an exogenous variable such as foreign assistance has on institutions by examining how decisions are made, for what reasons and by which institutional actors. But for foreign assistance, in this case non-food agricultural aid, can any impact be measured and if so, what are its dimensions? Part of the answer will depend on the amount of the aid, such as large scale credit, infrastructure or equipment donations. Just the sheer magnitude of such assistance will make some kind of measurable effect inevitable. More subtle but perhaps more significant is technical assistance, training and the introduction of appropriate technology. While the impact of this kind of assistance may be harder to measure it can have a more significant and lasting effect.

Both size and kind have two levels of potential impact. First, there is the effect on the institution itself. Massive cash and equipment donations cannot help but distort institutional capacities. Well known are the complaints of Honduran development agencies that the level of USAID assistance was exceeding institutional capacity to use it effectively, where it could be used at all. The lesson here is that institution building depends on clearly defined and agreed upon objectives to carry out projects within the capacity of the host country organization to do so (16, pp.12-13).

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Assessment of impact must take fully into account not just the role and capacity of the recipient institution, but the role, influence and demands of the donor agency as well. As LDCs depend so heavily on foreign assistance, development outcomes cannot be evaluated accurately without including examination of donor agency participation. In first and even second generation approaches to development, this is nowhere more evident than in donor intervention in the decisionmaking processes.

° Research and Information

Finally, it is necessary to look at the quality and quantity of research and information available to institutions. Efficient and effective development requires thoughtful planning and evaluation of program efforts. In the field of agriculture especially, research is an integral component of production. But there is a question as to the availability of an adequate intellectual infrastructure to produce needed research and development, support extension services and provide feedback to project managers. Certainly research and information support is a key component of non-food agricultural assistance. Unfortunately, present conditions in Africa reflect "a failure of research to provide answers to the problems which confront African agriculture". This situation has resulted from "funding scarcities" and inadequate focus (14, p.69). Thus, the impact of non-food agricultural foreign assistance on research institutions has been minimal in that it has not been enough, and maximal in that this situation has precluded stronger and more effective research to underwrite critically needed expansions in agricultural production. Here is an example in a crucial area of need where public choice might apply more to the donor institution than the recipient. Failure to appreciate the urgent need for more and better agricultural research has inhibited more favorable results from other and infinitely more costly aid investments. While donor organizations correctly criticize the inefficiencies of parastatals, they

ignore their own inefficient behavior. Of course, they are making investment decisions which in the context of their own institutional or national politics make sense, but do little to protect other investments or promote greater development.

3. External Impacts

So far the discussion has centered on impact of non-food agricultural assistance internal to institutions. Another way of measuring impact, however, is to examine constituencies the recipient institutions are supposed to serve. In this case, such groups include producer-farmers, both small and large-holders, and consumers, especially in urban areas. Agricultural parastatals, particularly in Africa, regulate prices. As we have seen elsewhere, the political decision on the part of most Sub-Saharan nations has been to stem potential urban unrest and feed incipient industrialization at the expense of more efficient and equitable agricultural development. Parastatals, carrying out political policy, have created a system of disincentives which has resulted in deteriorating economic conditions for peasants, growing urbanization and generally low to negative GNP rates.

How host country institutions have responded to economic and development problems using foreign assistance is indicated in part by these circumstances. Small-holders in particular no doubt will excoriate such development policies, and simple economic analysis will point to their inefficiencies. Yet, food prices in cities, where there is more political organization and awareness, have so far produced political efficiencies. Questions to be examined then, center on the extent to which non-food assistance has permitted these policies to continue. To what degree have they allowed for subsidization of production to help nations postpone the inevitability of reckoning political with economic accounts? How have they permitted, promoted or hindered institution building?

Political and Social Structures

Measurement of the effects of non-food agricultural assistance on the political and social institutions of LDCs is, as already noted, a difficult task. But it is not impossible. Furthermore it is necessary in order to put into balanced perspective analysis of organizational institutions. Actually, examination of non-organizational institutions is little more than a continuation and expansion of analysis of the external impacts of organizational institutions. There are three areas of inquiry, or units of analysis, into aid impacts: power elites; public attitudes toward government and the private sector; and farming practices.

° Power Elites

Assistance to LDCs is perforce channeled through the power structure (except in the relatively insignificant case of organizations such as the Inter-American Foundation which works directly with indigenous groups). Disruptions in established political arrangements are not welcomed by power elites, at least not by those holding office. Development assistance, as can be imagined, must fit into political agendas; that is, it must be negotiated to accommodate both donor and recipient development policies and politics. Those negotiations and the agreements which flow from them, needless to say, provide valuable material for assessing impact, at least on the policy input side.

Results, or output, are the other and most obvious measure of impact. Does aid, for example, play a role in sustaining elites and, if so, how does this advance or retard development goals? Are power elites' attitudes and behavior changed to promote greater economic efficiencies as the result of assistance? Or are agreements violated in practice to accommodate political objectives?

Of course, professed attitudes need to be substantiated by objective performance indicators. These are to be found in large part in internal institutional environments and behavior. Parastatals are not entirely autonomous from central government control, at least not in Africa (although they are to an astonishing degree in some countries in Latin America, notably Brazil and Costa Rica). So their behavior is a measure of impacts of elite attitudes.

Finally, it is necessary to examine trade-offs facing power elites to gauge impact. On the one hand, they are confronted with the immediate need to satisfy constituent demands. On the other, they need to implement long term policies to create and sustain economic growth. As we have seen elsewhere in this report, time and again in Africa political considerations have won out. The central issue here, then, is whether or not this has been made possible in part by non-food agricultural assistance. Have credits, subsidized imports and other foreign assistance permitted governments to remain in power without essentially changing their policies? After all, such stability is desirable, at least to many bilateral donors. So political agendas are never far removed from development assistance on either side of the fence. This, it needs to be added, is perfectly understandable and accepted practice. The point is that in assessing institutional impact failure to appreciate and examine the role of donor agencies will present an incomplete picture of not so much what is happening but why it is.

Finally, a conflict for AID, of course, is one of weighing trade-offs between political stability and economic development. Should donor policy, in other words, seek to promote development at the risk of incurring instability? Is this a zero-sum game? Probably not. Assistance policies must, of course, recognize political realities and the limits they impose on otherwise ideal development strategies. Even more to the point is the potential for conflict within the foreign affairs establishment in Washing-

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ton. While it can be argued persuasively that successful economic development can help create and maintain political stability, that is a long term proposition for politicians and diplomats who must deal with the present.

In summary, it is useful to recall Bates' cogent conclusion that

... politicians [i.e., policymakers] ... select economic policies not out of a regard for their economic merit but out of a regard for their political utility; economic inefficiency ... can be politically useful (6, p.146).

° Attitudes Toward Government and the Private Sector

Attitudes toward private and public institutions are conditioned by historic legacy, cultural values and personal experience. They are also determined in part by economic choice. That is, public policies create incentives and disincentives which help to shape individual economic behavior. Similarly, the market is, among other things, a changing economic system of incentives and disincentives for different types of economic activity. We already know that large amounts of food assistance can cause market distortions and disincentives to domestic production. But what about non-food agricultural assistance? Logically we can assume that as the absence of enough of this kind of aid has produced lagging economies in LDCs (14, Chap.2), especially in Sub-Saharan Africa, a significant increase could result in more favorable impacts. But this might or might not be the case in reality. Equally, we can suggest that changes in public institutional policies to promote agricultural development, particularly in the various marketing and other public boards or parastatals, will affect development. But what exactly those institutions should do in terms of policies and programs to support more effective agricultural development is still subject to analysis, on a country-specific basis, using data from primary rather than secondary sources.

We have seen in preceding pages ways by which to measure institutional capacity. To complete the examination it is necessary to survey attitudes and behavior of the affected groups, consumers and producers. This will permit not only an assessment of relevant policies and programs, but will allow as well examination of policy enforcement and perceived program effectiveness.

It is also useful and instructive to examine comparatively ways in which the private sector functions in all phases of agricultural production and marketing. Is it more economically efficient than the public sector and why? What constructive alternatives to public enterprise does it offer? How can these be implemented in LDCs, especially in those countries in Africa which are so strongly wedded to an entrenched system of parastatals? Do consumers perceive any difference between private and public enterprise and what does this mean in terms of consumer behavior, satisfaction and perceptions of public and private institutions? Finally, what are the perceived trade-offs? That is, do consumers, for example, prefer subsidized, low food prices in return for what amounts to less development? Are they even aware of such a trade-off? These are the kinds of inquiries which need to be made in order to gauge not only consumer attitudes, but to complete analyses of institutional (public and private) effectiveness. Those whom institutions serve (or are supposed to serve) can be valuable guides in assessing institutional capacity and, implicitly, the types and amounts of assistance which support relevant institutional performance.

° Farming Practice

Consumers are obviously not the only group in society harboring well defined attitudes toward government and the private sector. So do producers. Equally as important as their perceptions of public and private institutions, however, is their behavior. Non-food agricultural assistance is supposed to promote greater production through an enhanced system of inputs, funneled

through a variety of mostly public institutions. Once again, while we have described ways by which to measure impacts of assistance internal to institutions, examining farmer performance is perhaps the most critical test of impact. Crop mixes, magnitudes of production, small-holder and large-holder profitability all begin to draw a picture of non-food agricultural assistance impacts. If the proof of the pudding is in the eating, then the proof of the aid impact is in farm production and practices. While cultural traditions, social conventions and political pressures all have some degree of influence on farming practices, perceived utility will ultimately determine farmer behavior. This in turn is determined by public policies and the institutions which implement them. The uncertainties created by their operations are discussed in further detail in Section D of this report.

CHAPTER C-IVCONCLUSIONS AND RECOMMENDATIONS

Several conclusions may be drawn from the preceding discussion.

- ° Policy options for food deficit LDCs cannot be exercised successfully without taking into account economic, social and political interrelationships. While this may be all too obvious, it is all too often ignored. Moreover, this must include analysis of donor organization political needs and agendas, not just those of recipient institutions and countries.
- ° Both qualitative and quantitative techniques of analysis must be used. The former is especially critical for these reasons: the lack of sufficient and reliable data or quantification; and the need to understand program dynamics within the social, cultural and political context.
- ° The historical legacy of colonialism, particularly in Africa, remains strong and continues to pose problems for development. It has left intact an institutional network of parastatals to support political power at the expense of economic development. Yet parastatals are a political reality which must be recognized and dealt with in the development process.
- ° Effective agricultural/food development policies must be sensitive to and reflect: use of applicable technologies; a set of production incentives balanced with consumer needs; and an appreciation of the strength of agriculture in development along with the limits of industrializing rural LDCs. Similarly, macro policies must account for the individual in development,

creating incentives which promote greater opportunities for self-reliance.

- ° A more widely participatory society will improve chances for development as the people begin to perceive themselves as true "stakeholders" in a national destiny. (It should be remembered that in most LDCs, those in Africa in particular, the sense of national identity is still not fully developed.)
- ° There is still a well-defined and powerful elite in food deficit LDCs. Too often this small power class makes public policy decisions to benefit itself rather than national goals. It remains to be seen if elites will be wise enough to see that their welfare is inevitably linked to progressive, widely based development.
- ° It is important to survey "institutional constituents" to gauge the impacts of development policies and assistance. Both subjective as well as objective indicators together will facilitate comprehensive and defensible analysis. Analyses of institutional impacts of aid in LDCs, especially Sub-Saharan Africa, must by definition focus on parastatals, which are so powerful and ubiquitous. Furthermore, sound analysis of institutional impacts of aid must also take into account the "three generations" of capacity building discussed above. This typology is basic to any real understanding of the roles and impacts of institutions, particularly parastatals, in food-deficit LDCs.

Other conclusions and "points of departure" for rethinking AID development strategies include:

- ° The emerging national identity of most Sub-Saharan countries continues to contribute to a climate of political instability. This in turn creates a vicious cycle in which political stability, as a precondition for lasting development, is hard to achieve; in turn, persistent economic underdevelopment impedes

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attainment of greater political stability. Explicit ways to link potential development outcomes with increased political stability need to be pursued.

- ° As the agricultural base in many food deficit LDCs, particularly those in Sub-Saharan countries forms the economic base, AID is faced with three possible development strategies. First, the agency can choose to invest more heavily in boosting the agricultural sector, especially the small holder. This would tend to reduce growing immigration to the city and maintain social stability. Second, AID can invest in urban development, reducing economic pressures on the agricultural sector as the economic mainstay. The latter option, however, is probably less workable. The literature shows that in case after case, most African nations choosing this strategy have failed. Worse, in pursuing elusive industrial development goals, they have occasioned deterioration of rural economic conditions. The third option would be to link rural and urban development, attempting to use AID funds to leverage host country policy changes toward that end. This could be a combination of support for greater private initiative, through creation of a system of incentives, such as in Kenya, coupled with more selective public investment to stimulate balanced development.
- ° Power elites strictly control the majority of wealth in food deficit LDCs. In many cases their behavior demonstrates they have not been able or willing to identify national development goals with private interests. This means that resources are concentrated in the hands of a few and not necessarily reinvested in their respective countries. This is nothing new. As a matter of fact it seems to be an abiding characteristic of LDCs. AID needs to think in term of using its funds more and more to leverage or match host country investments, helping to bring about reinvestment for greater development.

- ° Because parastatals are such an essential part of the politico-administrative structure in Sub-Saharan LDCs, they cannot be ignored or bypassed by donor agencies. The obvious if unworkable solution is to reform them. Another approach would be to link AID funding levels to parastatal productivity. That is, assistance would be keyed to measurable gains in productivity in the production of services and/or goods. This would have to be accompanied by adequate training and technical assistance.

- ° It is encouraging to note "the capacity of African rural dwellers to exploit alternatives available to them in the market place..." (7, p.84). Development policies need to take into account such initiative and help condition market structures to enhance such enterprise. This is an inexpensive investment for a potentially large return. Once again, however, it is necessary to ensure some kind of assistance base to maintain such a development strategy, making available technical assistance, credits, infrastructure supports and access to markets.

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SECTION D

IMPROVING PRODUCTION AND DISTRIBUTION OF FOODSTUFFS
IN LDCS: EFFICIENCY OF REGULATORY AND
NON-REGULATORY ALTERNATIVES

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CHAPTER D-IINTRODUCTION

The discussion that follows addresses the merits of governmental interventions in the food sectors of food-deficit LDCs. As described in Sections A and B, governmental regulation of the production and distribution of foodstuffs is widespread throughout these countries.

The conventional U.S. view is that such regulation is counterproductive if applied beyond the minimum necessary to assure orderly marketing. By "counterproductive", is meant: on the production side, inefficient allocation of land among alternative uses and inefficient application of variable inputs to those misallocated uses; on the distribution side, inefficient allocation of products among alternative market outlets, inefficient allocation of consumer expenditures among competing food and non-food products and reductions in individuals' and society's net utilities.

As noted in Section A, the U.S. view is shared by many specialists working in the United Nations Development Programme, the Food and Agriculture Organization, the World Food Programme and the World Food Council (interviews and meetings, New York and Rome, July 1984). An FAO expert with many years experience in agricultural development and grain marketing in Africa, echoing the general view in these agencies, said that involvement of the public sector in the marketing of food, grain staples in particular, is generally justified. This is because there exists a social responsibility on the part of public bodies to implement governments' marketing and pricing policies designed to guarantee the availability of needed supplies, to secure fair prices to producers and consumers and to oversee trading practices. In

short, governmental involvement is generally justified if the objective is orderly marketing. Unfortunately, many LDC governments do not agree and prefer to view their official marketing structures as a way of eliminating or restricting the role of private operators, a practice often requiring inefficient allocation of national resources. The result is often that policies imposed exceed the capacity of managers to implement them and of the national treasury to support them. Finally, the point was made that the capacity to support the costs of inefficiencies and direct subsidies is the key to "successful" interventions. While in most developed countries few consumers pay the real cost of their basic cereal products, these countries are able easily to bear the costs of the subsidies within a stable production and distribution process in part created and supported by the subsidy program. LDCs are not generally able to sustain such costs for long periods, nor are donors willing to support them indefinitely (interview, Rome, 1984).

Therefore, ways need to be devised to improve the efficiency of production and distribution, to reduce the drain on national treasuries and to move these nations toward food security based to the extent possible on domestic production and away from the trend to increasing dependence on the largesse of donors. Since the development of solutions depends on knowledge of the problem, the criteria for evaluating performance on the production and distribution sides need first to be reviewed.

Performance Criteria for Production and Distribution

The criteria against which both production and distribution of goods are judged are derived from the concepts of utility analysis proposed initially by Walras and developed by Pareto.*

* The interested reader is referred to Appendix I of Section A, "Agricultural Parastatals in Sub-Saharan Africa", of this report for a detailed discussion of the derivation of the criteria used here.

On the production side, where money prices can be assigned to inputs and outputs, the well-known economic efficiency condition achieved when the marginal cost of an input is equal to its marginal return is the applicable criterion. As Stigler puts it:

Economic efficiency is the ratio of actual output to maximum output from a given resource. Optimum efficiency is achieved when the ratio is unity. If the alternative cost is greater than the value of the marginal product in a use, a unit of the input will produce greater value elsewhere. If the alternative cost is less than the value of the marginal product in a use, a unit of the input will produce more value in this use than elsewhere. In both cases, output is not maximized (1, p.102).

On the distribution side, where we must deal with individuals' utilities and aggregate social welfare functions, none of which are quantifiable, precision is not possible. Therefore, the performance criterion can be expressed only in ordinal terms and no optimum can realistically be defined. This we have termed public choice sufficiency, its measure of achievement being the degree to which expressed public policy objectives are met, the underlying assumption being that such objectives represent the desires of members of the society and their attainment results in a net increase in the society's utility. Public choice sufficiency is defined thus:

Public Choice Sufficiency is the condition attained when a transaction in the public arena does not result in any loss of net societal benefit.

Under this definition sufficiency is attained even in situations where there is a loss of benefit to some participants in the transaction, provided its magnitude is equal to or exceeded by the gain in others'. Since this definition does not constrain the ranges of the possible gains and losses of participants in the transaction, these could theoretically be very large. In practice they are likely to be constrained by government policies based in concepts of equity and molded by considerations of political survival. While conditions for optimality cannot be defined

under this definition, it is obvious that the greater the net gain to society, the more public choice sufficient the transaction. Although actual measurement of the social welfare function is not possible, ordinal changes can be determined by evaluating the extent to which transactions result in attainment of announced, adopted, public policy goals.

Note that the attainment of public choice sufficiency does not necessarily result in economic efficiency, nor is the converse true. In fact, since most public economic policy is grounded in concepts of equity and distribution of wealth, it is unlikely to be economically efficient in the sense that its marginal cost would equal its marginal benefit, if these could be measured.

Central to public choice analysis is the concept of rent seeking, the behavior of individuals or groups attempting to satisfy their special interests and to achieve gains exceeding those that would be obtained in competitive markets. While rent-seeking behavior often creates economic inefficiency, it also often results in outcomes that are public choice sufficient.*

The political environments of the food-deficit nations of Sub-Saharan Africa provide opportunities for rent-seeking behavior by interest groups and by governments analogous to those available in the U.S. The most significant difference between the U.S. environment and that of most nations of Sub-Saharan Africa is that, whereas U.S. farmers are successful rent-seekers, with few exceptions those in Africa are not.* The potent political voices in Africa are the urban consumers and other interests who successfully seek rents in the form of low priced cereal grains at the expense of the politically impotent peasant farmers. Governments of these nations seek and obtain political rents, just as do U.S. governments, but from the urban rather than the rural interests involved in the food system.

* See Section A, pp.A-7,8 and Chapter A-III for discussion of the U.S. environment.

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CHAPTER D-IIIMPROVING PRODUCTION OF FOODSTUFFS IN LDCs

Since no two societies are identical, the degree to which generalizations can be made with respect to both economic efficiency and public choice sufficiency is limited. Precise recommendations for improving the operations of the food system can be made only on a country-by-country basis. Such a detailed analysis is beyond the scope of this paper. However, as the foregoing discussions have shown, there is a great deal of commonality in the general approach to food production and distribution in the LDCs of the African continent.

On the production side, governments intervene to lower producer prices for foodstuffs. They impose controls over product marketing, often making illegal the sale of products to other than statal and parastatal organizations. They control the pricing and availability of production inputs, often discriminating against small farmers, who are politically impotent, to the benefit of larger, export producing, politically influential farmers. They implicitly tax all farmers, food and cash crop producers alike by the low acquisition prices paid by the parastatals.

On the distribution side, discussed in Chapter D-III, they subsidize the urban masses by providing them with cheap food paid for in part by the producer taxes and in part by the artificially low prices for imported foods created by overvalued currency exchange rates.

The parastatals through which these actions are taken and these results are achieved are direct instruments of government policy. Therefore, the degree to which the desired goals are

reached can be regarded as an indicator of the public choice sufficiency of policy implementation. However, in the views of many, these policies, even when successfully implemented and therefore effective in achieving political (public choice) goals are the wrong policies, causing economic distortions and resultant economic inefficiencies as discussed below in the context of production.

FACTORS AFFECTING PRODUCTION

In his comprehensive study of the factors involved in improving irrigated agriculture in LDCs, Bromley examines in detail the environment for choice facing small farmers in general. His discussion provides a framework for evaluating policy alternatives to improve agricultural production in LDCs.

Bromley's points, based in part on the work of Richard H. Day (2), are as follows.

Farming as Adaptive Behavior

° Farming is, above all else, adaptive behavior. Farmers must adapt to weather, crop diseases, uncertain supplies of inputs such as seeds and fertilizer, unknown or unpredictable prices for the product, and the unpredictable actions of others (3, p.19).

° The learned behavior of farmers constitutes a set of feasible management choices, the farmer knowing, within certain limits, what will "work" and what will not. With input based on experience, hunches, prognoses, extension-service advice, neighbors' intentions and even astrological indicators, the farmer defines a set of perceived feasible activities, which should be a subset of the set of actually feasible choices (op. cit., p.20). If this is not so, the farmer is likely to choose a

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course that is not actually possible and therefore incur a potential loss.

° When farmers are faced with uncertainty, they tend to react cautiously. Often, this will constitute a move away from a possible optimum toward a lower output with a greater prospect of success - a "safe-enough" decision. This behavior, known generally as satisficing, has been called by Day and Singh, "cautious optimizing."

° The range of opportunities for decision making across which the farmers can choose differs between farmers, with small, politically disadvantaged farmers generally having the least available options (op. cit., p.23).

The Uncertain Environment

° Two general categories of uncertainty are important to farmers. They are: technical uncertainty, those random outcomes such as drought, flood, locusts or outbreak of diseases which alter the economic environment of the farmer; and institutional uncertainty, arising from the actions of others, usually with respect to manipulation of revenue, cost or input availability in some way (op. cit., p.26). For example, government intervention in the markets for farmer products, such as changing requirements for compulsory procurement (as occurs regularly in Egypt), and changes in producer prices to be paid by parastatals, announced after planting commitments are made cause institutional uncertainty. This creates an environment in which farmers are reluctant to invest in new, more productive practices because of the absence of secure expectations over possible gains.

This adherence of many farmers in developing countries to traditional agricultural practices leads to rural stagnation. As Bromley points out, the conventional wisdom in economic development is that if farmers have access to improved technologies

they will adopt them. The source of new technologies is research, the marketing tool, extension.

The argument goes: give the farmers better factors of production, and agriculture will produce a surplus of both food and income; the former to feed the rural and urban masses -- if not to export -- and the latter to supply the demand for investment funds for the rest of the economy. Agriculture can be an engine of economic development, and that engine runs best on high-quality "fuel" (the factors of production), (op. cit., p.31).

This is the factor-quality hypothesis about the cause of rural stagnation.

A second hypothesis about rural stagnation suggests that it arises from the inability of subsistence farmers to accumulate an economic surplus or to plan on accumulating one, as a result of the economic environment in which they operate. The presence or prospect of this surplus could cushion the risks of abandoning traditional practices and lead to the adoption of new technologies. While it appears at first that this could be achieved simply by adjusting relative input and product prices, Bromley contends that the issue is more complex than that and occurs for different reasons than just pricing policy. He labels this the institutional-uncertainty hypothesis (op. cit., p.32).

The differences of opinion about the conditions which lead to agricultural development are embodied in these two hypotheses. If the factor-quality hypothesis is correct, the way to overcome rural stagnation is to provide farmers with the missing high-quality inputs and leave them to produce the surplus products to fuel the economy. If institutional uncertainties are dominant, access to better inputs and technologies, while necessary for development will not be sufficient to achieve it.

Proponents of the factor-quality hypothesis take the position that given the resources available to him, the prevailing

institutional environment and the basic subsistence objective of production, the farmer cannot reallocate factors of production to improve his situation because he is already operating efficiently. The most articulate spokesman of this school of thought is perhaps Theodore Schultz, who takes the position "that subsistence agriculture cannot be an engine for economic growth since there are 'few significant inefficiencies in the allocation of factors'" (op. cit., p.32). Schultz and others use the model of the peasant farmer as small, poor, tradition-bound but efficient as the argument for investing in new "income streams" to combat rural stagnation. Their position is that to transform traditional agriculture, there is a need to invest in modern inputs which will create these new sources of income (op. cit., pp.32-33). Therefore there is a need for effective research to provide information and to produce inputs such as seeds suited to the local conditions. There is then a requirement to make these inputs readily available to small farmers through effective extension and input marketing channels.

Bromley agrees that the problem of small increases in yields from presently cultivated land in many LDCs is essentially a problem of the failure of farmers to adopt new agricultural practices such as the high-yield cereals. This has occurred despite "decades of investment in new seeds, fertilizer plants, pest control, farmer training, and the like." He concludes, therefore, that while a number of factors no doubt contribute to the problem,

... central to the decision of whether or not to try new (more risky) practices is the nature of expectations concerning the economic environment. ... we need to explore the issue of secure expectations and the institutional structure which provides that security (op. cit., p.33).

This viewpoint leads to the institutional-uncertainty hypothesis, supporters of which say that uncertainty about others' actions, especially government, deter otherwise willing farmers from adopting available new practices and technologies because they do not have secure expectations about benefits therefrom or

about the possible accumulation of the economic surplus needed to cushion the risks of the new investment. Institutional uncertainty is characteristic of what Myrdal, writing about the LDCs of South Asia called the "soft state", in which the national government requires little in the way of formal obligations by their citizens. Bromley applies this descriptor to developing countries in general, defining it as a state in which: "(i) formal institutional arrangements are merely 'suggestive'; and (ii) these rules are often changed at will such as to confound the investment plans of certain economic agents" (op. cit., p.34). The lack of strict enforcement of agricultural pricing and procurement regulations and the frequent rule changes by parastatals in Sub-Saharan Africa meet these criteria.

Under the conditions of a soft state, says Bromley, the small farmer is likely to bear the brunt of incessant manipulations by the fortunate to further enhance their economic position (op. cit., p.35). This is, of course, the rent-seeking behavior of the "development coalition" described in Section A. The result for the small farmers is uncertainty as to official policy affecting their access to inputs, the prices they will have to pay and the product prices at harvest time. This leads the small farmer to practice risk aversion by reducing his dependence on the outside world. He retreats toward the subsistence world of traditional agriculture, a condition in which he is minimally dependent on the state and its machinations, and on the formal markets for inputs and products. As Schultz says:

Farming based wholly upon the kinds of factors of production that have been used by farmers for generations can be called traditional agriculture. A country dependent upon traditional agriculture is inevitably poor, and because it is poor it spends much of its income for food (op.cit., p.32).

It is obvious that a key ingredient in economic development is a shift away from traditional agriculture. It is also obvious that this shift is unlikely under the uncertain conditions imposed in the LDCs of Sub-Saharan Africa by the parastatals. It is necessary to reduce the uncertainty and to create an environment where

farmers can rely on firm expectations of achieving goals beyond mere subsistence. This requires policy changes on the part of the governments and/or changes in the implementation of these policies.

Creating a More Certain Production Environment

The requirements for effective development therefore are to create a more certain institutional environment and to reduce technical uncertainty through effective research and extension. These must go hand-in-hand for successful development to be attainable. The lack of either will cause failure.

1. Institutional Certainty

Bromley defines economic development in the context of the agricultural sector as "a succession of changes within the subsistence agricultural sector which alter the basic structural and technological aspects of economic life". Clearly, this requires prior changes which permit structural and technological change. Since the latter is not likely to be adopted in the absence of an economic surplus built up by small farmers, conditions for creating the surplus must be established. The changes fed by the surplus must occur within the economic framework of factor and product markets, the avenues whereby subsistence farmers gain access to inputs such as credit, machinery, seeds, fertilizer, extension advice and to markets for their products.

The World Bank, addressing the subject of changes critical to economic development in Africa, singled out three specific areas of policy where changes must occur: "(i) the development of more appropriate price policies; (ii) improvement in institutions particularly those serving the agricultural sector; and (iii) increased efficiency of resource use in the public sector" (4, p.7). The Bank noted that, for administrative, technical and

political reasons, implementation of the policy and institutional reforms needed to further development has been very slow to date.

Much of the problem lies in poor understanding of the hierarchical nature of farmer decision-making and of the ordered goals of farmers. These are to:

- ° assure survival - the subsistence goal;
- ° cautiously optimize - the safety goal;
- ° acquire cash for consumption and savings - the surplus goal; and
- ° maximize profit - the speculative goal (3, p.37).

The subsistence goal is sought first, the speculative last; the surplus goal provides the base for building a financial cushion against risk. This will not be sought under conditions of institutional uncertainty. The cautious optimizing strategy adopted by peasant farmers constrains them to the restrictive safety goal. Because this is their preferred strategy, economic development policies must aim at increasing the range of perceived safe options available to farmers. This is achieved by decreasing the incidence and magnitude of institutional uncertainty by:

- ° establishing institutional arrangements to lower the farmer's private costs of a mistake; and
- ° creating institutional arrangements which are predictable and dependable both within and between planning horizons (op. cit., p.40).

Lowering costs of farmer mistakes could be achieved by:

- (1) contracting for outputs;
- (2) assuring availability of seeds, fertilizer, irrigation water and other modern inputs at predictable prices, in a timely fashion and in adequate quantities;
- (3) establishing price support and income enhancement programs modeled on U.S. programs;

- (4) announcing realistic producer prices well in advance of planting seasons.

Predictable and dependable institutional arrangements could be created by defining and announcing the precise nature and purpose of institutions within which the small farmer must operate and with which he must interact; and by minimizing institutional "tinkering" and "adjustments" affecting him. It is enough that farmers must deal with technical uncertainty. To force the subsistence farmer, in particular, to take on the extra burden of second-guessing the economic environment is to reduce his limited safety zone and to stifle any impulse to take risks (op. cit., p.41).

2. Technical Certainty

Technical certainty goes hand-in-hand with institutional certainty as a necessary precursor for agricultural development. Certain elements of technical uncertainty cannot, of course, be controlled by the efforts of Man; the climate, the weather, floods, droughts and other natural phenomena do not lend themselves to direct interventions. Their effects on the agricultural system and its productivity can, however, be modified by the adoption of cultural practices, crop strains and species and other new technologies designed to perform more effectively in the face of the natural conditions encountered. Examples are: new tillage practices to minimize soil water loss; strains of traditional crop plants more adapted to the conditions than those traditionally sown; new chemical inputs to stimulate production and improve pest control; and new, nontraditional crops.

Technologies and cultural practices introduced must be compatible with local natural conditions. They must be compatible also with the existing socio-economic, political and organizational institutions in the area, region or country. The former requires that research programs undertaken to develop the new production factors be tailored to local natural conditions;

the latter that the research be designed to produce results that extension programs will be able to promote without encountering insurmountable institutional barriers. Furthermore, in the case of inputs such as seeds and fertilizers, and outputs (especially non-traditional products) supplies and markets respectively, must be available or developable with an adequate degree of certainty.

Sub-Saharan African agricultural production suffers from archaic farming practices, which must be changed by adoption of advanced technologies which will lead to development. Recognizing this, the donor community has reportedly begun to commit additional resources to assistance to the agricultural sector. Among the donors, AID has adopted the strategy of attempting to induce production increases through strengthening institutions engaged in basic agronomic research, the development of genetically superior seed varieties and the improvement of farming practices through technology transfers.

This USAID assistance appears to have been targeted, for whatever reasons, to traditional crops, with very little directed to the possibilities for non-traditional crop production and marketing. Of thirty five projects examined in the course of the search for examples of USAID non-food agricultural assistance to Sub-Saharan African LDCs, twenty dealt exclusively with traditional crops such as millet, maize, sorghum and cowpeas. According to evaluation reports contained in the AID Development Information System, only two of the remainder involved significant efforts to investigate new crop production possibilities. This was probably a reflection of the host countries' desires to achieve food security through enhancement of production of traditional staples, since twenty nine of the thirty five projects reportedly were already operating under host country auspices prior to USAID participation (5-11, incl.). With the time-lags inherent in the introduction of new crops and technologies and the immediacy of problems attendant on shortfalls of cereal staples (the "bread and beer" syndrome among them) efforts to

achieve short-term improvements in staples production are realistic objectives of governments interested in their own political survival.

Nevertheless, given the ultimate dependency of agricultural development on the combination of institutional and technical certainty and the imperative of shifting from traditional agriculture to non-traditional crops, USAID assistance in this area could probably be strengthened. There is little evidence in project evaluation records of significant, widespread assistance in terms of research and field trials for non-traditional crops such as vegetables, citrus and tropical fruits or for development of protein sources from fisheries, which have significant potential in various parts of the region.

To assist the LDCs of Sub-Saharan Africa to diversify into these non-traditional crops and their markets and to establish a degree of technical certainty in so doing, the U.S. could, with other donors:

- ° provide increased funding for research on these products, their production factors and their markets;
- ° consider giving preferential access to U.S. markets for some products;
- ° provide targeted assistance to development of infrastructures needed for intra-regional trade; and
- ° assist more in the development of the non-traditional activity of local food crop processing.

These steps would go a long way toward reducing technical uncertainties. Such progress will however, be rendered ineffective unless increased institutional and technical certainty on the production side is accompanied by reduced institutional uncertainty on the distribution side. Chapter D-III discusses this.

CHAPTER D-IIIREDUCING UNCERTAINTIES ON THE DISTRIBUTION SIDE

Contributing to the institutional uncertainty afflicting small farmers is the uncertainty of product markets confronting them. Therefore, it is appropriate to consider the role of distributional policies in the development process.

In comparison to the socio-economic complexities of the production side, the distribution side is fairly simple. Poor urban consumers demand cheap food, and governments respond to this essentially political demand by seeking to provide it. As Bates says, these urban consumers in Africa constitute a vigilant and potent pressure group. Because they are poor they spend a large proportion of their income, as much as 50 to 60 percent according to studies cited by Bates, on food (12, p.33). Changes in the price or availability of food have a major effect on the economic well-being of urban dwellers in Africa. These urban consumers are potent because they are geographically concentrated and strategically located. They can be organized quickly and because they control basic services, they can exert considerable influence. Changes in government in Africa often follow urban unrest arising from dissatisfaction with food supplies or prices. A case in point was the occurrence of rice riots in Liberia as a prelude to the violent accession of Master-Sargeant Doe to power (op. cit., p.33). Recognizing the threat, most African rulers seek to protect themselves by controlling and manipulating the production and marketing of foodstuffs, mainly cereal grains.

The poor urban consumers are part of a development coalition that formed in the typical post-independence nation. The other members of the coalition are the state; the industrialists and their rural allies, the large farmers; and the tenants on

government development projects. These coalitions, in the name of development, combined against the mass of the rural interests. The peasantry became politically isolated, oppressed and politically demobilized (13, p.133).

All of the parties in the coalition have their special interests to which governments cater. The latter gain in return non-financial rents in the form of political support or lack of opposition, and/or financial rents extracted by manipulations of input prices, producer prices, consumer prices and currency exchange rates. The urban consumers get low-priced food. The industrialists get low-cost agricultural products as raw materials for processing industries protected by tariffs and artificial currency exchange rates. Employers of workers in industry and government get low-cost labor, because food is a wage good. Government gets tax receipts, extracted from agricultural producers in the form of low prices, to transfer primarily to development projects benefitting urban interests. Corrupt bureaucrats and politicians get wealth by bribery to dispense privilege and by siphoning of "rents" from transactions. The peasant farmers get to hold the bag.

As discussed in other sections of this report these ends are achieved primarily through the actions of parastatals. These organizations, directly implementing governmental policies, vary from country to country and between sectors within countries. They are, however, remarkably similar in their objectives and their results. To varying degrees, they engage in price-setting at the producer and consumer levels. They regulate market supplies by coercive measures such as forced procurement, production quotas, controls over transport and in the extreme, by outlawing private sector marketing channels. In practice, the agricultural parastatals in most countries of Africa implement government policies which while serving the political interests of the rulers, discriminate heavily against the small farmers who are the producers of food staples, and against the development of free product markets.

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The prevailing attitude of African rulers, varying of course in degree, is characterized by the following 1980 quote from the Federal Republic of Nigeria:

The watchword in national industrial planning and strategy is the full recognition of private enterprise and initiative as the responsibility of the State for the welfare of every citizen (15, p.14).

Thus, implementation of the prevailing policies of most African nations embodies state control which leads away from the development of free markets.

The earlier discussion of economic efficiency and public choice sufficiency, pointed out that movements away from conditions of equilibrium for the exchange of goods to which prices can be assigned result in economically inefficient allocations of resources. On the other hand, such divergences from the efficient equilibrium can result in attainment of public choice sufficiency as long as the government policies are successfully implemented without a net loss of societal utility. As Bates puts it, "Market intervention may create inefficiency . . . but economic inefficiency may also generate the resources by which to govern" (13, p.131). If stable government is society's objective, economic efficiency might not be paramount.

Despite the dichotomous nature of the concepts of economic efficiency and public choice sufficiency, there is no reason that the two cannot be achieved together. That is, it should be possible for governments to enact policies which achieve their political and social ends (are public choice sufficient) without causing the economic inefficiencies associated with massive interventions in the various markets. In other words, it should be possible to achieve political ends in an environment of reasonable institutional certainty.

According to the World Bank, a few governments have recognized the need to address these problems. Apart from measures to

improve the efficiency of the parastatals, there is now a willingness to accept the private sector, including cooperatives, to complement the responsibilities of the parastatals and to provide farmers with alternatives which they can legally use. For example, the authority of marketing parastatals in Togo, Mali, Kenya, Senegal, Tanzania and Guinea have been reduced to permit a greater role for cooperatives and/or the private sector. The Bank points out that a movement has begun to have the agricultural parastatals

...play the limited but critical roles of setting and monitoring marketing standards, dealing with famine relief, setting a floor price for producers, and managing import procurement and strategic reserves (4, p.11).

Such an approach has been implemented in Mali. Although it has not at this date (September, 1984) been officially evaluated, the results to date are reportedly encouraging (interview with F.A.O. official; Rome, July 1984). The approach is summarized in Section A (pp. A-49-51) of this report and described in full in the FAO report Etude Prospective Pour Le Développement Agricole Des Pays De La Zone Sahélienne, 1975-1990. The summary is repeated here:

According to 1982 World Food Program documentation on a WFP/FAO food security project aimed at stabilizing prices and restructuring the markets for cereals in Mali,

The government has given a high priority to agriculture in these [development] plans, but it has accentuated the production of export crops such as cotton and groundnuts, the exception being represented by the Office of the Niger, which has concentrated essentially on rice production since the colonial era and which enjoys a special status (16, pp.2-3: original in French).

This approach, resulting in the commercialization of cereals in Mali being concentrated in the hands of OPAM (Office national des produits agricoles du Mali), which had for a long time a monopoly over purchase and sales of cereals at prices fixed by the government, led to serious shortfalls in domestic production and increased dependence on foreign assistance.

Convinced of the serious nature of these problems, in response to a 1980 proposal by a group of donor countries and agencies, the government of Mali accepted an innovative approach to the problem of food production and distribution. (Réunion du 28/11/80 des donateurs de céréales dans le cadre du projet: "Restructuration du marché céréalier du Mali".)

The donors pledged food aid on highly concessional terms for domestic resale by the government. The counterpart funds thus generated are specifically committed to subsidizing, over six years, the procurement and distribution of local food grains. Although starting from an incentive producer price, the objective is the gradual reduction in subsidy requirements as a result of substantial savings in marketing costs and progressive upwards adjustment in the consumer price to equal the overall costs.

The pricing plan agreed to by the Malian Government in return for guaranteed concessionary food aid is shown in Table 6, below.

Table 6. MILLET/MAIZE/SORGHUM (in Malian Francs per kilogram)

Project Year	Production Price	Level of Intervention	Effective Cost for OPAM	Consumer Price	Consumer Subsidy
1	95	60	155	85	70
2	95	80	175	120	55
3	110	80	190	150	40
4	126	80	206	180	26
5	145	80	225	210	15
6	165	80	245	245	0
<u>RICE</u> (in Malian Francs per kilogram)					
1	110	125	235	200	35
2	126	130	256	230	26
3	145	130	275	270	5
4	167	130	297	300	0
5	192	130	322	330	0
6	220	130	350	350	0

Source: (16, p. 7)

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In return for the donors' pledge, the government has (1981) abandoned the grain marketing monopoly of its parastatal (OPAM) and changed its purpose to one of market coordination and stabilization including a role as buyer and seller of last resort. Through a pricing scheme similar to that proposed for Kenya, described below, producer prices will be adjusted upward gradually to those prevailing in neighboring countries. To reduce producer uncertainties, (any changes in) price will be announced publicly well in advance of planting.

A similar approach is under consideration by the Government of Kenya, which would involve restructuring the cereals parastatal, the National Cereals and Produce Board (NCPB) and operating in the following way, as described in Section A (pp. 48-49) of this report:

- ° NCPB would be split into two autonomous departments: the "Commercial Department" which would buy and sell grains on the domestic markets on a purely commercial basis; and the "Reserve and Stabilization Department" to handle a grain reserve and to implement price stabilization policies.

Functionally, the approach would operate thus:

1. The government would establish minimum producer prices for grains, to be announced prior to the planting season.
2. The government would set maximum retail prices for the main cereal grains.
3. The Reserve and Stabilization Department would be responsible for defending these minimum and maximum prices by acting as the buyer and seller of last resort.
4. The price band would be set initially between the producer price and consumer prices expected in a free market, and would take account of regional differences in transportation and processing. (Such a price band, if expanded to appropriate levels, results in a free market).

5. All restrictions on private domestic trade in grain would be abolished, except for health and safety regulations.
6. All external trade in grains would continue to be handled by the Commercial Department of NCPB.

Recommendations

The easiest recommendation would be for all governments to remove themselves from agricultural production, marketing and processing activities, leaving the market to create efficient conditions. Given the political imperatives of most nations of Sub-Saharan Africa, their relinquishment of all control over the staple foods sector is highly unlikely. Moreover, in most of these countries, there is a legitimate role for governments in the stabilization of markets and the distribution of factors of production and of products. Therefore, ways to improve the performance of that role should be sought, as follows:

1. USAID should concentrate its technical assistance, in concert with other donors, on research into locally-adapted improvements in crop production. While support for measures to increase production of traditional crops, including cereal staples should continue, more effort and resources should be targeted to the development of non-traditional crops and the export markets for them.
2. To make more effective use of research results, more assistance should be targeted to the establishment of effective agricultural extension services in LDCs.
3. Since agricultural parastatals are unlikely to be dismantled or completely privatized, at least in the short term, USAID should seek ways to induce changes in their operations. Their original conception in the Sahelian countries as market organizing, non-intrusive entities was benign. That is the role now being sought by the donors' group, including AID, in the restructuring of OPAM, the Malian cereals parastatal. Similar opportunities exist in other countries and should be pursued by AID, in cooperation with other bilateral donors and the appropriate UN assistance agencies.

Such approaches, if successfully implemented, will go far toward reducing both technical and institutional uncertainties. This will pave the way for greater economic efficiency of agricultural production within the political and socio-economic confines of the recipient countries.

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