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AN ANALYSIS OF THE EFFECTS OF GOVERNMENT
FOOD GRAIN PRICE POLICIES IN
SOMALIA, 1971-1983

By

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To

My father Hagi Jeyte Wehelie and
mother Maka Ahmed
for their blessings

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TABLE OF CONTENTS

	Page
Acknowledgements	i
LIST OF TABLES.....	iii
LIST OF FIGURES.....	iv
CHAPTER I: INTRODUCTION.....	1
1.1 Purpose of the Paper	1
1.2 Background.....	2
1.3 The Role of Agriculture in the Economy	4
1.4 Problem Statement and Objectives	6
CHAPTER II: THE FOOD GRAIN SUBSECTOR AND RELATED GOVERNMENT PRICES.....	10
2.1 Overview of Food Grain Production	10
2.2 Constraints on Maize and Sorghum Production.....	13
2.3 Government Marketing and Price Policies	14
2.4 The Agricultural Development Corporation (ADC)	15
2.5 ADC's Purchases and Price Trends	16
CHAPTER III: METHODOLOGY	20
3.1 Review of Literature	20
3.2 Method of Analysis	24
3.2.1 Theoretical Basis.....	24
3.2.2 The Model.....	24
3.2.3 Mathematical Model.....	27
3.3 Data Sources	30
CHAPTER IV: ANALYSIS OF THE RESULTS	32
4.1 Nominal Protection Coefficients (NPC)	32
4.2 Production and Consumption Effects.....	34
4.3 Efficiency Effects.....	36
4.4 Welfare and Distribution Effects	38
4.5 Qualifications of the Study	40
CHAPTER V: SUMMARY, CONCLUSIONS, POLICY IMPLICATIONS AND NEEDS FOR FURTHER STUDIES.....	41
5.1 Summary.....	41
5.2 Conclusion and Policy Implications	42
5.3 Suggestions for Further Research.....	43
References	46
APPENDICES.....	49

LIST OF TABLES

	Page
TABLE 1: Somalia: Maize and Sorghum Production, Area and Yields, 1971-1983	12
TABLE 2: ADC Domestic Maize and Sorghum Purchases, 1971-1983	17
TABLE 3: Producer Prices for Sorghum and Maize, 1971-1983	19
TABLE 4: Import Parity Prices for Maize and Sorghum, 1971	26
TABLE 5: Nominal Protection Coefficients for Maize and Sorghum, 1971-83	33
TABLE 6: Real Effect of Government Price Policies, 1971-83	35
TABLE 7: Monetary Effects of Government Maize Price Policy, 1971-83	37
TABLE 8: Monetary Effects of Government Sorghum Price Policy, 1971-83	38

LIST OF FIGURES

	Page
FIGURE 1: MAP OF SOMALIA	3
FIGURE 2: INDEX OF PER CAPITA FOOD PRODUCTION 1970-1981	7
FIGURE 3: GOVERNMENT PRICE POLICY EFFECTS	27

CHAPTER I

INTRODUCTION

1.1 Purpose of the Paper

This paper is a retrospective analysis of the effects of Somalia's price policies for maize and sorghum between 1971 and 1983. Maize and sorghum are the two most important dietary staple foods and represent over 96% of the cereal production of the country. Since the early 1970's, the government has pursued an economic policy framework which emphasized the public sector and parastatals were given a prominent role in agricultural production and marketing activities. Private trade in maize and sorghum was banned during this period, and a government agency took over the grain marketing and distribution activities in the country. Despite the government's goals to increase cereal production, maize and sorghum output stagnated during the period and declined on a per capita basis.

Between 1971 and 1983, real producer prices of maize and sorghum continuously declined in spite of infrequent nominal upward adjustments. A number of economic reviews by various international organizations had repeatedly expressed concerns about the government's agricultural price policies, particularly regarding food grains, and their impact on the incentives to farmers and on the country's agricultural performance. However, very little is known about the effects of government underpricing of cereal grains and the social costs and/or gains involved in pursuing cheap food policies.

The purpose of this paper is to provide the information necessary for understanding the impact of the price policies pursued by the government for these two major crops on farmers' incentives, production and consumption patterns, and economic efficiency. The paper examines the various effects of the pricing policies through an analysis based on the limited data available about the country. The analysis is expected to reveal the social costs and/or gains of cheap food-grain policies, and the tradeoffs involved between consumer subsidization and attempts to persuade farmers to increase output. It is necessary, however, to point out here that this analysis is solely based on the static, short-run effects of lower product prices and is by no means an advocacy of price fundamentalism. Although prices play a major role in influencing the quantities produced and consumed of individual crops and aggregate agricultural output, this paper does not downplay the importance of technological advancement and supporting

services in agriculture as a crucial part of comprehensive government policy packages required for increasing agricultural productivity and output.

This research was carried out on the basis of limited data. Despite these data problems, the paper attempts to investigate the potential growth and equity impacts of maize and sorghum price distortions. Therefore, the analysis in the paper provides a general and broad exposition of the direction of price policy effects rather than a rigorous quantitative measurement of the policy impacts. For this reason, readers are cautioned to interpret the various estimates in the analysis as only approximations and as indications of the direction of change due to the pricing policies pursued during the period under consideration.

1.2 Background

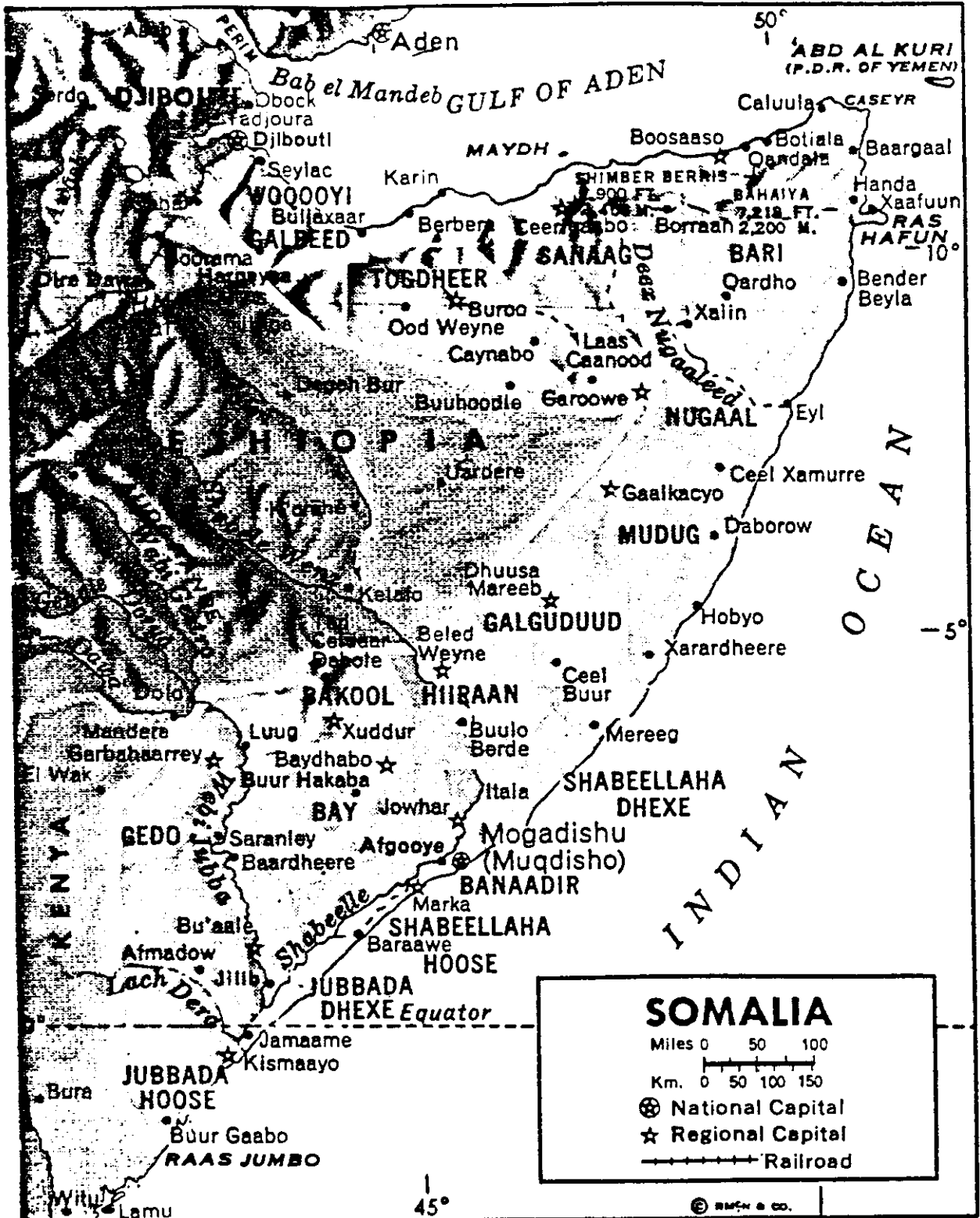
Somalia is located in the eastern part of the Horn of Africa, and lies between the latitudes 11 30' N and 1 30' S. The country extends over a land area of 638,000 square kilometers, and has an estimated population of 4.4 million people, which is growing at a rate of 2.8 percent annually. With a per capita income of \$280 in 1983, it is among the low-income developing countries in the world (World Bank, 1983).

The topography of the country consists mainly of a plateau that slopes to the Indian Ocean in the east and to the Gulf of Aden in the north. The climate varies markedly within the different parts of the country, and can accordingly be subdivided into three major climatic zones: 1) a mountainous northwestern part with mild semi-Mediterranean climate and annual precipitation of up to 400 mm; 2) a central and northeastern zone with a hot and arid climate and low annual rainfall of between 50 and 100 mm; and 3) a southern part with an annual rainfall of up to 600 mm, in which most of the settled farming is practiced (World Bank, 1981).

The climate is characterized by four seasons during the year: 1) the big rain season known as "Gu" that occurs from April to June; 2) the "Hagai" season from July to September, in which some scanty rain falls along the southern coastal areas; 3) the small rain season, "Der," from October to December; and 4) the dry season, "Jilaal," between January and March. The Gu and Der are the two cropping seasons.

In addition to inadequate quantities of rainfall in most parts of the country, precipitation varies drastically from one year to the next. As a result of the erratic nature and significant rainfall fluctuations, crop failures and droughts

FIGURE 1: MAP OF SOMALIA



occur periodically. It is estimated that partial or total crop failures, resulting from inadequate moisture to produce crops, occur in one out of every five Gu seasons and one out of every three Der seasons. Major droughts that directly affect the lives of people and livestock occur every eight to ten years (World Bank, 1981).

Two rivers, the Shebelle and Juba, flow in the southern part of the country from the Ethiopian highlands and provide most of the country's irrigation water. The Juba river is the only perennial source of water in the country because the Shebelle river often dries up during the dry season.

Based on the quality of soils and adequacy of rainfall, the country has an estimated 8.2 million hectares of potentially arable land (or 13 percent of the total area) and 28.8 million hectares of grazing land. Out of the total potential cultivable area, only 0.7 million hectares (or 1 percent of the land area) are currently under cultivation. Somalia has a rich livestock resource base and the second longest coastline in continental Africa. There is an estimated livestock herd of 30 million head in the country: 5.3 million camels, 4 million cattle, and 24.7 million sheep and goats. The country's Indian Ocean coastline extends 2,000 kilometers, with another 1,000 kilometers along the Gulf of Aden (World Bank, 1981).

1.3 The Role of Agriculture in the Economy

The economy of Somalia is predominantly agricultural. More than four-fifths of the population derive their livelihood from livestock and crop production, and the sector contributes to about 60 percent of the GNP. Furthermore, agricultural exports provide the country's total export earnings (World Bank, 1982 and 1983). The other productive sectors (i.e., excluding services) contribute 10 percent of the GNP and employ only about 7 percent of the population (World Bank, 1981). Thus, increases in agricultural productivity and output are essential to the country's future prospects and potential for growth.

Livestock production is the principal economic activity and employs 60 percent of the population. Nomadic pastoralism is the principal method of livestock production which has evolved through adaptation to the arid and unreliable climatic conditions. The livestock subsector contributes about 35 percent of the GNP and generates from 70 to 90 percent of the country's export earnings.

The crop subsector is second in importance and engages about 880,000 people (or 20 percent of the population). It contributes about 8 percent of the GNP and generates roughly that much of export earnings. Settled farming is concentrated primarily in the areas which have relatively better rainfall, principally in the southern and northwestern regions, particularly along and between the Shebelli and Juba rivers. Crop and livestock production are not generally integrated in the country; crop production in conjunction with animal husbandry is practiced in limited areas in the inter-riverine valley and parts of the north.

Live animals are the country's leading export and accounted for about 90 percent of the exports in 1981. In addition to the export earnings derived from the livestock subsector and its employment generation, this subsector provides milk and meat for the growing urban population. Bananas are the second most important export product, but the volume of banana exports has continuously declined for the past decade.

Furthermore, a large part of the domestic industrial and service sectors depend on the agricultural sector for their inputs or on its effective demand for their markets. Although the agricultural sector is responsible for a substantial part of the country's economy, its contribution to government revenues is minimal, despite the sector's significant generation of employment and foreign exchange. With the exception of large commercial banana plantations, farmers and livestock producers do not pay income taxes. About 1 to 1.5 percent of government revenues is collected from export taxes levied on livestock exports, and no information is available on either banana export taxes or the contribution of crop production subsectors to government revenue (World Bank, 1981).

Recognizing the crucial importance of the agricultural sector to the economy and for the country's prospects for growth, successive development programs emphasized the role of the sector in the country's long term development objectives. Both the Five Year Development Plan of 1974-1978 and the Three Year Development Plan of 1979-1981 laid down the broad sectoral objectives as follows (Ministry of National Planning, 1983).

1. To accelerate the drive to self-sufficiency in maize, sorghum, oilseeds, vegetables and fruits, and increase the output of cotton, sugar, rice, and wheat to reduce the increasing burden of food imports;

2. To increase production of exports of livestock, fish and bananas and to diversify the crop mix through encouragement of new export crops and for the agro-industries;
3. To conserve the country's natural resources to ensure adequate production for the present generation as well as for future generations;
4. To raise the standard of living and welfare of farmers through increased farm productivity and incomes;
5. To assist in improving the nutritional standards of the population through increased food production;
6. To ensure productive employment for the increasing rural population that is not absorbed in non-agricultural sectors in the course of the development process.

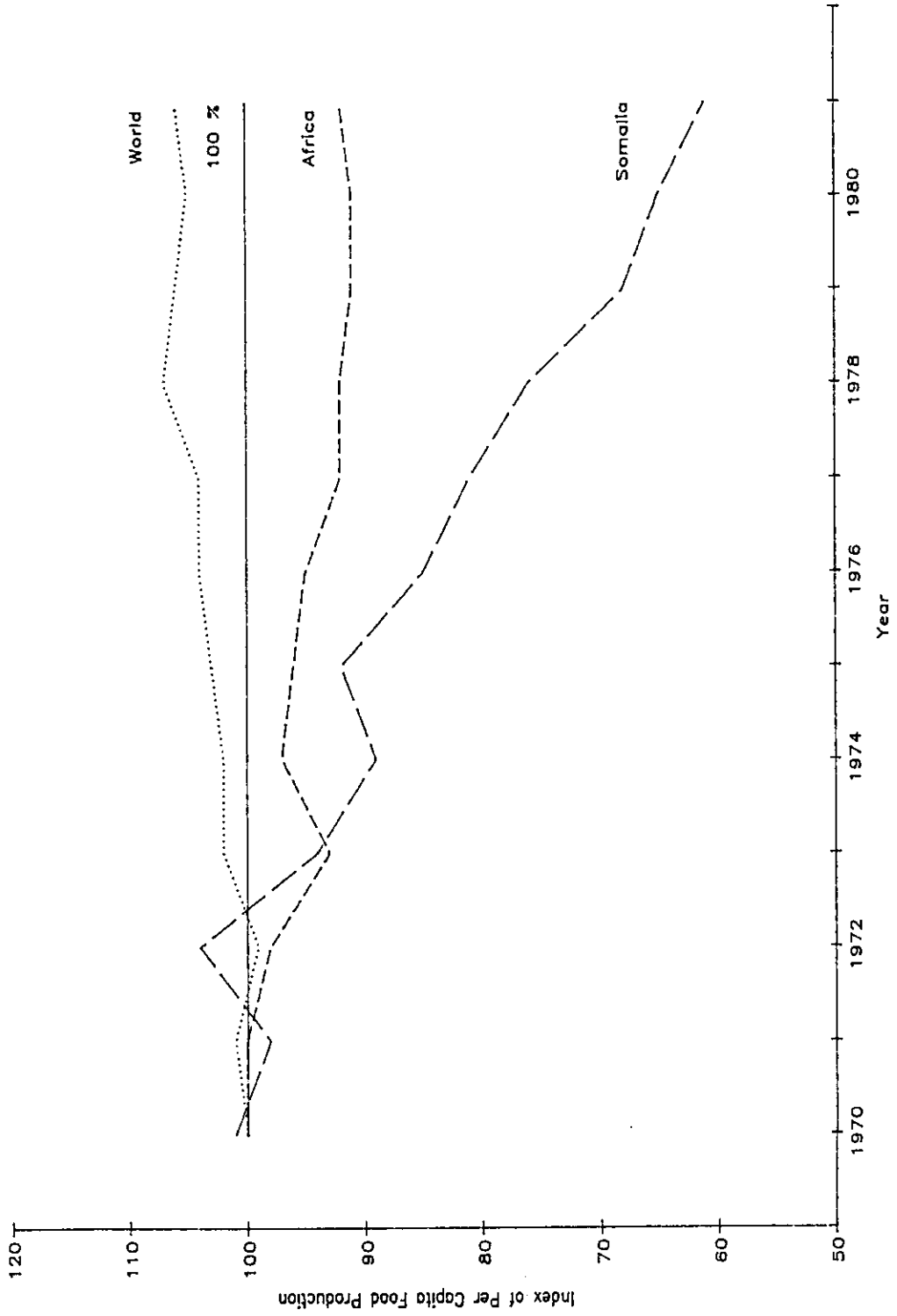
1.4 Problem Statement and Objectives

Although Sub-Saharan Africa as a whole recorded an actual decline in food production per person in the 1970's (World Bank, 1981; Eicher, 1982) nowhere in the world was this decline more severe than in Somalia. By 1981 the average index of per capita food production for the country had declined to 61 percent of its level a decade earlier (see Figure 2). Although the main focus of this paper is on government pricing policies for maize and sorghum, it should be pointed out that the overall performance of the productive sectors in the economy during the 1970's and early 1980's had faced difficult times and declining outputs.

The average annual growth rates of crop production and industry between 1972 and 1978 were minus 3 percent and minus 2 percent, respectively. Only livestock production recorded a positive 2.7 percent annual growth rate in the same period (World Bank, 1981). The volume of cereal imports increased more than fivefold between 1974 and 1981, while aid in food grains tripled for the same period (World Bank, 1983; Government of Somalia - World Bank, 1984).

The available economic reviews of the country, particularly the World Bank's, have indicated that the critical factors which contributed to the poor performance of the crop production subsector were largely government price and marketing policies, (World Bank, 1981, 1983, 1984; USAID (draft), 1984). A World Bank review reported that:

FIGURE 2: INDEX OF PER CAPITA FOOD PRODUCTION 1970-1981
(1969-1971 = 100)



SOURCE: FAO Production Yearbook 1981.

"...many of measures undertaken during the 1970's to expand public sector ownership and control over the economy have tended to erode incentives to effort and improved production in both the public and private sectors, and that this erosion has been the principal cause of stagnation in production" (World Bank, 1981, pp. 2).

The government's active participation in marketing and price policies in agriculture were most pervasive for cereals, while livestock production and marketing were left entirely in the hands of the private sector. Consequently, the relatively better performance of the livestock subsector was due, according to the World Bank, to the lack of government controls in this area.

This paper investigates the effects of government controls and price policies in the maize and sorghum marketing areas in Somalia and the effectiveness of such policies in achieving the national goals of increased food grain production, self-sufficiency in cereals, and overall economic growth. The level and nature of supply response to price incentives and/or disincentives is a key element in evaluating the appropriateness of price policies in achieving policy goals. The paper analyzes the social cost/gain of government-administered prices and the possible outcomes of fixing domestic producer prices below border prices. Furthermore, the resource allocation and welfare effects of pursuing low-cost food grain for the benefit of the consumers and at the expense of farmers are investigated.

More specifically, this paper attempts to do the following:

1. Describe the role of the agricultural sector in Somalia's economy.
2. Examine the degree of harmony between government sectoral objectives and the food grain price and marketing policies pursued by the government. In other words, the paper seeks to understand if the policies pursued were appropriate for achieving the desired goals. To analyze the effectiveness of the policy instruments, administered maize and sorghum prices relative to border prices will be evaluated and the extent of incentives and/or disincentives created by such divergence (or price distortions) will be examined.
3. Evaluate the social costs and/or benefits resulting from the government cereal price policy in terms of efficiency and income distribution.
4. Discuss the relevance of the results of the analysis for price policy in the design of improved policy.

The rest of the paper is organized according to the following format:

- Chapter II contains an overview of maize and sorghum production in Somalia, the major constraints facing the food grain farmers, and the related government marketing and price policies.
- Included in Chapter III is a brief review on the literature of the effects of LDCs' government interventions in the marketing of agricultural products followed by the methodology of analysis.
- Chapter IV presents the results of the analysis of the effects of government food grain price policies.
- Chapter V deals with the conclusions derived from the analysis and their policy implications, and the recommendations as to needed areas of future research.

CHAPTER II

THE FOOD GRAIN SUBSECTOR AND RELATED GOVERNMENT POLICIES

2.1 Overview of Food Grain Production

The crop production subsector can be divided into: 1) a small commercial irrigated sector that cultivates mainly bananas, sugar cane, cotton, and maize; and 2) a large traditional small-scale farm sector that cultivates primarily maize and/or sorghum under rainfed or flood-irrigation conditions. The average family farm size in the traditional sector is about 5 ha., although it is not uncommon to observe farm sizes substantially larger than this (World Bank, 1981). Approximately 80 percent of the land under cultivation is rainfed and three-fourths of the farming population is located in the rainfed areas. On the other hand, about 15 percent of the cultivated land is flood irrigated. The remaining is under controlled irrigation. In addition to the two main staples (i.e., maize and sorghum), the major crops grown in the country include bananas (the second largest export commodity after livestock), oilseeds, sugar cane, cotton, rice, fruits, and vegetables (see Appendix 1).

Maize, along with sesame, is mostly grown under flood irrigation along the two rivers. The major maize producing areas are the Middle and Lower Shebelli, and the Middle and Lower Juba. Farmers grow maize in the Gu season, followed by sesame in the Der season. Cultivation practices are simple and consist of land clearing, leveling, plowing and sowing. Most maize farms are family-operated, and generally use their own family labor and seeds from the previous harvests. Chemical fertilizers and pesticide application are generally unknown and/or unavailable to most farmers. Therefore, yields are typically low, approximately 800 kg/ha. on the average.

Sorghum production is basically a rainfed crop, of which 70 percent of the total output is produced in the Bay region. Farmers grow sorghum during the Gu season often interplanted with pulses. The Gu crop is then rationed in the Der season or sometimes sown again. Sorghum cultural practices are simple and the hoe is the main tool. Insecticide and fertilizer use are limited despite soil nutrient depletions and disease and pest problems. Consequently, yields are low and average 300-400 kg/ha. The low yields realized are further reduced by substantial post-harvest losses. Besides crop production, farm families also own livestock herds on which they rely for additional income and for household needs

of milk and meat. During the dry season, farmers move with their livestock to areas of better grazing and water availability.

A 1975 land law declared that all land officially belongs to the State, but individual farm land rights are given on a 50-year lease, with the rights to sell or inherit remaining with the leaseholder. Generally, individual farm sizes are not allowed to exceed 60 ha. under rainfed conditions or 30 ha. under irrigation.

Although the top priority of the country's agricultural sector is the need for increasing domestic maize and sorghum production, output of the two commodities declined by about 20 percent from the early 1970's to the late 1970's. According to Table 1, maize production increased in the early 1970's, declined in the latter half of the 1970's, and then rebounded in the early 1980's. From 1971-1975, the annual maize production averaged approximately 120,000 tons. The average yearly production of maize in the next five year period from 1976-1980 declined to about 85,000 tons, and then increased in the last three years (1981-1983) to about 175,000 tons per year. The increase in production during the 1980's coincides with the recent government grain trade liberalizations. The area planted to maize during the period 1971-1983 fluctuated from a low of 100,000 hectares to a peak of 209,000 hectares, reaching the highest level in 1982.

Sorghum production increased between 1971 and 1973, and then declined in both 1973 and 1975. However, annual sorghum production fluctuated less than maize. The highest sorghum production was obtained in 1981 and 1982, and the lower 1983 production seems to have resulted from the drought of that year. The area planted to sorghum increased by over 100 percent between 1971 and 1982. However, sorghum yields per hectare steadily declined over the same period, so that production increased much less than area.

Maize yields fluctuated within the range of 5 to 10 quintals/hectare, while sorghum yields were between 3 to 6 quintals/hectare during the period 1971-1983. The yields of maize and sorghum in Somalia are well below the average for Africa as a whole.

It is certain that the output and yield fluctuations during the period under consideration were to a considerable part due to the varying rainfall incidence between the years. However, because of the unavailability of climatological data for the country, it is impossible here to separate the weather and price policy effects on domestic output.

TABLE 1

Somalia: Maize and Sorghum Production, Area and Yields, 1971-1983

Year	Maize Production (000 Mt)	Maize Area (000 Hectare)	Yield (Kg/Hectare)	Sorghum Production (000 Mt)	Sorghum Area (000 Hectare)	Yield (Kg/Hectare)
1971	70	120	583	1290	200	645
1972	105	150	700	1490	282	528
1973	164	120	417	153	254	602
1974	165	172	872	137	388	353
1975	100	100	1000	100	250	400
1976	90	160	563	130	300	433
1977	80	160	500	160	300	533
1978	90	160	625	150	277	433
1979	105	106	984	120	300	500
1980	111	114	974	136	273	500
1981	142	150	947	222	400	555
1982	150	209	720	235	540	440
1983	235	n.a.	n.a.	141	n.a.	n.a.

Source: 1971-82 maize production and 1973-82 sorghum production from FAO Production Yearbook, (various issues).
 1983 maize production and 1971, 1972, and 1983 sorghum production from the Ministry of Agriculture as reported
 by World Bank country reports.

2.2 Constraints on Maize and Sorghum Production

Buchanan (1984) identified a number of constraints on grain production in Somalia, including:

- rainfall variability;
- unavailability of farm inputs required for increasing yields;
- discontinuity in crop research and varietal improvement;
- inadequate extension service;
- farmers' lack of access to institutional credit;
- low producer prices;
- restrictive government marketing and trade policies;
- uncertainties over the grain laws and lack of legal sanction for private trade.

Presently, the system of maize and sorghum cultivation is generally land extensive and exploitative of the soil without appropriate moisture conservation practices. Farmers' production inputs consist of a simple hoe, their own labor, and seeds from their previous harvests. Earlier attempts to introduce animal traction to maize and sorghum farmers have been unsuccessful (World Bank draft paper, 1984). Although agricultural research has been going on in the country since the colonial era, various problems have prevented the establishment of a sound research program. Discontinuity because of a lack of external funding and high turnover of personnel have been the main obstacles to a successful research program.

Three major inputs of particular interest to both maize and sorghum farmers are improved seeds, insecticides and fertilizers. High-yielding seeds and insecticides are especially important in the rainfed areas. The varietal improvement work conducted at the central research station as well as the regional research outpost has not yet come up with conclusive results that can be distributed on a large scale to farmers. Two high-yielding varieties of maize were identified, but they are still being tested. In addition, various imported high-yield sorghum varieties are being screened and tested at Bonka research farm. Because of the lack of improved technology packages, the existing extension service in the country has been unable to extend any new technologies to farmers.

The supply and distribution of farm inputs is severely underdeveloped in the country. For several years (until 1983) the Farm Machinery and Agricultural Services (ONAT), a parastatal, was responsible for the provision of all agricultural inputs except seeds, for which the ADC was responsible. In reality, however,

ONAT only provided subsidized tractor rental services and was unable to import and distribute any significant amounts of fertilizers and insecticides. From 1975 to 1980, ONAT imported an average of 2250 metric tons of fertilizers annually. These fertilizer imports do not include those of the NBB, the sugar industry, and other large state farms which imported their own fertilizer (Buchanan, 1984). Even the tractor rental services of ONAT were inadequate during peak land preparation periods in the year, prompting small farmers to hire tractor services from private tractor owners in their neighborhoods (World Bank, 1981). In 1983, fertilizer and insecticide import and distribution responsibilities were transferred from the ONAT to the Agricultural Extension Service (AES). Since then, the AES has not imported any chemical inputs into the country due to the lack of foreign exchange. Furthermore, formal credit to buy inputs is generally unavailable to most food grain farmers because of the restrictive collateral requirements of the banking institutions. However, some informal credit is available to farmers from village merchants and members of their extended family (Buchanan, 1984).

2.3 Government Marketing and Price Policies

The Somalia government has played a major role in the marketing of agricultural products since the early 1970's. It intervened in many product and service markets, and the marketing of agricultural products were made the responsibility of three parastatals. Livestock, fruits and vegetable marketing were left, however, in the hands of the private sector. A USAID country study conducted by a Boston University team in 1983 reported that the major objectives of the government's role in agricultural marketing were based on the typical view that: 1) private traders receive above-normal profits by exploiting both farmers and consumers, 2) the government can provide the marketing services more efficiently while protecting the well-being of farmers and consumers at the same time, and 3) the private sector is incapable of providing the necessary investments for adequate marketing infrastructure.

The three major parastatals established for marketing agricultural products and the commodities for which they were made responsible were as follows (World Bank, 1981):

<u>Institution</u>	<u>Commodities Marketed</u>
1. National Trading Corporation (ENC)	Sugar, edible oils, tea, coffee, pasta products, and wheat and rice imports.
2. National Banana Board (NBB)	Banana exports.
3. Agricultural Development Corporation (ADC)	Mostly maize and sorghum, but also handles domestically produced cotton, oilseeds and rice.

The National Trading Agency (ENC) is a parastatal under the Ministry of Commerce, and handles the commercial and concessionary imports of the commodities listed above. The agency delivers these products to regional municipalities, which distribute the commodities to the villages and licensed retailers. Commodity prices are periodically fixed by the government and the ENC releases the products for which it is responsible at uniform prices throughout the country.

The marketing of domestically produced crops is primarily the responsibility of two parastatals: NBB and ADC. NBB has the responsibility for the export marketing of bananas (the country's export crop), while ADC dominates the marketing of food crops.

NBB was established in 1970 through the nationalization of previously foreign-owned companies. Since then, it had an exclusive monopoly over the export trade of bananas. Domestically consumed bananas are marketed by private fruit and vegetable traders. The NBB regulates the banana industry, distributes chemicals to banana farmers, and, until 1978, had provided credit to banana producers. However, the NBB recently entered banana production and currently owns 11 farms including one that produces banana suckers and operates six packing stations (World Bank, 1981).

2.4 The Agricultural Development Corporation (ADC)

The ADC was established in 1971 under Law 51¹, which gave the state a monopoly on the trade and distribution of cereals in the country. This law declared that the "...purchase, storage, sale, and distribution of maize and

¹The Law No. 51 is fully reproduced in Appendix 4.

sorghum by private persons for commercial purposes is prohibited...to protect the interests and well-being of the producer and consumer and eradicate the deplorable system of exploitation." Farmers were "...authorized to store for domestic use up to one hundred kilos of maize or sorghum per season for each member of his family." Furthermore, the ADC was given the responsibility "...to exercise the power to trade, store, import, and export maize and sorghum."

The specific provision which stated that farmers were not allowed to retain more than one quintal per household member posed great food security risks to the farmers. Because of the unreliability of rainfall and frequent crop failures, the provision has raised the possibility that farmers to run out of their family grain supplies before the next harvest season. Consequently, ADC sometimes has had to revert to forced deliveries. However, the ADC's forced purchases were recently stopped by a Presidential Circular and, in January 1984, the Ministry of Agriculture announced that farmers were required to sell only 5 percent of their total grain harvests to the ADC (Buchanan, 1984).

The ADC purchases maize and sorghum directly from farmers and pays cash on delivery. It does its purchasing during the harvest periods through a network of temporary buying stations scattered throughout the major producing areas. The grain board has about 167,000 tons of flat and underground storage capacity, and owns a fleet of trucks (World Bank, 1984). The ADC then sells its domestic grain purchases as well as commercial and concessionary imports to various regional municipalities who further distribute them to government shops and licensed retailers.

Initially, the ADC marketed significant amounts of domestically produced maize and sorghum, but its purchases later declined sharply as its farm-gate prices became less and less attractive to farmers. In 1971, when the ADC was first established, it purchased about 43 and 41 percent of domestic output of maize and sorghum, respectively. Maize and sorghum purchases continually declined in the period 1971-1975, but sorghum purchases rebounded until 1978, when ADC sorghum purchases reached their highest percentage share of national production (see Table 2).

2.5 ADC's Purchases and Price Trends

The government-administered producer prices of maize and sorghum were often fixed for several years, despite rising inflation. Infrequent nominal upward adjustments, in most cases, did not offset the effects of inflation on real prices.

TABLE 2

ADC Domestic Maize and Sorghum Purchases, 1971-1983

Year	Maize		Sorghum	
	Purchases (000 Mt)	Purchases as % of Production	Purchases (000 Mt)	Purchases as % of Production
1971	55	43	29	31
1972	60	39	38	23
1973	37	23	15	10
1974	33	22	17	12
1975	20	22	13	9
1976	30	33	20	15
1977	21	19	52	36
1978	31	29	61	43
1979	11	10	56	40
1980	4	4	12	9
1981	6	4	23	10
1982	2	1	8	3
1983	4	2	9	6

Source: S. Buchanan, USDA, 1984 (Draft) and Government of Somalia - World Bank joint report, 1984.

Table 3 shows the nominal ADC purchase prices and the real producer prices after deflating the nominal prices by the Mogadishu Consumer Price Index¹. The table shows that real producer prices declined during the period 1971-1983. Real producer prices of red sorghum in 1982 were less than half the 1971 prices, while white sorghum prices in the same year were slightly more than half the 1971 prices. Real producer prices of maize in 1982 were one-third less than the 1971 prices. Furthermore, a joint FAO and Ministry of Agriculture report (Buchanan, 1984) in 1983 indicated that ADC maize and sorghum purchasing prices were below the total costs of production for those crops in both 1981 and 1982.

The ADC uses a panterritorial pricing system in its purchasing and sales operation. The agency's prices did not take into account quality and transport costs until 1981, when red and white sorghum prices were differentiated. Thus, farmers in more remote areas benefitted from the ADC's uniform prices relative to farmers closer to the markets. Because of the recent market liberalization and the market share decline of the ADC, most of the trade in domestically produced grain has moved into the private sector. A recently released joint World Bank and Somali Government report has indicated that the private grain trade has increased substantially in recent years.

However, the ADC still retains significant market power because of the large concessionary imports it handles. It is estimated that grain imports constituted about 59 percent of the total marketed grain during 1979-1983. Concessionary imports made up 41 percent of the imported grain, i.e., 25 percent of marketed grain was food aid (Government of Somalia - World Bank Report, 1984). Another study reported that ADC officials admit that they were incurring losses on their domestic purchases and sales operation, despite their low producer prices, but "profits" from the concessionary imports were covering these losses. The substantial quantities of concessionary grain imports which the ADC releases in the grain market enable the agency to maintain the government's fixed prices below world market prices, and keep a check on the prices available to farmers.

¹The Mogadishu CPI is the only available measure of inflation in the country.

TABLE 3

Producer Prices for Sorghum and Maize, 1971-1983
(Somali Shillings per quintal^a)

Calendar Year	Nominal Price of Sorghum	Price in 1971 Shillings ^a	Nominal Price of Maize	Price in 1971 Shillings ^a
1971	40	40.00	35	35.00
1972	40	41.23	35	36.08
1973	45	43.56	45	43.56
1974	60	48.12	50	40.10
1975	90	61.43	50	34.13
1976	90	53.54	50	29.74
1977	90	48.78	90	48.78
1978	90	44.33	90	44.33
1979	90	35.81	90	35.81
1980	120	29.97	120	29.97
1981	150-red	25.96	180	31.15
	160-white	27.96		
1982	150-red	19.59	180	23.51
	160-white	20.90		
1983	160-red		220	
	180-white			

^a1 quintal = 100 kilograms.

^bDeflated by the Mogadishu consumer price index.

Source: Agricultural Development Corporation reported in Buchanan, *Somalia's Cereal Production: Implications for PI 480 Program*, (draft paper), USDA, 1984.

CHAPTER III

METHODOLOGY

3.1 Review of Literature

A number of observers agree that many developing countries have historically depressed agricultural product prices (Schultz, 1978; Peterson, 1979). Based on the output effects of government influence on market incentives in agriculture, Schultz (1978) classified policies of countries into three categories: 1) economic policies that are neutral with respect to agricultural production; 2) policies that overvalue agriculture; and 3) those that undervalue agricultural production. Most of the developing countries fall in the third type, where agricultural production is underpriced, while many of the developed countries fall in the second category because of agricultural support programs that are widely practiced in the industrialized countries.

Agricultural production is undervalued in many developing countries by various forms of government policies and practices, and for different reasons in different countries. The main instruments used in affecting food and agricultural prices directly include price controls and/or the establishment of government trading agencies. Agricultural product prices are also altered indirectly by governments through taxes, managed exchange rates, trade policies, and credit and input subsidies. A major reason for cheap food policies, particularly in the poor developing countries, stems from urban consumer pressures (Timmer et. al., 1983). The supply of adequate nutrition to low income groups and government revenue collection are also important objectives for underpricing food in some developing countries (Tolley et. al., 1982).

There is increasing empirical evidence in the development literature that developing countries are paying high costs in terms of foregone output and sluggish economic growth because of policies that underprice farm products in order to achieve various national objectives. Bale and Lutz (1979) have shown in their international comparison of the effects of agricultural price distortions between the developed and developing countries that the lower farm product prices in the developing countries lead to a decline of agricultural output, an increase in consumption and a reduction in farm employment opportunities which collectively result in rural out-migration. Agarwala (1983) confirmed the crucial role of prices for economic growth. He concluded that countries with higher price

distortions typically have lower growth rates than those with less distorted prices. Furthermore, Agarwala disagreed with the notion that price distortions are sometimes justified for distributional objectives, and points out that "...countries with low distortions are found to have relatively high growth. There is no evidence that price distortions help equity" (Agarwala, p. 46).

Peterson (1979) estimated the magnitude of agricultural product undervaluation in 27 developing countries relative to the real prices received by farmers in the developed countries. He found out that LDC farmers were receiving one-fifth of the real prices received by their counterparts in the developed countries. Consequently, he argued that agricultural output in those developing countries would have been 40 to 60 percent higher than it was, and their national income would have increased by an additional 3 percent annually if these countries gave more favorable prices to farmers.

Similarly, the World Bank (1981) came to the conclusion that agricultural underpricing was the major factor behind the alarming economic problems that plagued Sub-Saharan African countries in the 1970's. The Bank concluded:

"It is now widely agreed that insufficient price incentives for agricultural products are an important factor behind the disappointing growth of African agriculture" (World Bank, 1981, p. 55).

Schultz (1978) noted that farmers in the developing nations are rational economic individuals and that they respond to incentives and economic opportunities. A significant amount of evidence is available on the responsiveness of farmers in the developing countries (Askari and Cummings, 1976). Krishna (1967) noted that both traditional and commercial farmers respond similarly to economic incentives wherever traditional farmers have a minimum interaction with the monetized economy.

The impact of government policies that keep farm product prices lower than they would otherwise be, either through direct price controls or by other measures, depends on the responsiveness of farmers to prices. This responsiveness is indicated by the magnitude of the price elasticity of supply; the more positive the price elasticity is, the higher would be supply response. Therefore, government price policies significantly alter output when farmers are highly responsive to changes in prices.

Scandizzo and Bruce (1980) summarize the diverse evidence available on price elasticity of supply for the world. They report that acreage response typically falls in the range of 0.1 to 0.8 in the short run and 0.3 to 1.2 in the long run (Scandizzo and Bruce, p. 29). Similarly, the existing econometric and

empirical studies on the supply elasticities in Sub-Saharan African countries supports the fact that farmers in these countries do respond to economic incentives. Bond's (1983) review of the evidence on the price elasticities of supply in Sub-Saharan Africa showed that the supply response is positive for individual crops as well as for aggregate agricultural production.

"It is found that for both individual crops and aggregate production, supply responses are positive. In general, for individual crops, the long-run price elasticities tend to be larger than those for the short-run, and are fairly sizeable" (Bond, 1983, pp. 723).

The short-run and long-run supply elasticities for individual cash crops in Sub-Saharan Africa are reported to be in the range of 0.02-0.87 and 0.07-1.75 respectively. Furthermore, Bond estimated aggregate agricultural supply response to real producer prices for nine Sub-Saharan African countries and found the elasticity coefficient to be in the range of 0.03 to 0.20. On the basis of this, Bond points out that the positive response of aggregate output suggests the existence of unemployed or underemployed resources in these countries. She challenges the view that a positive supply response of an individual crop implies that increases in the production of the crop occur through the reallocation of resources from other crops or activities. The existence of spare capacity in Africa, she argues, allows the output of a given crop to increase without an equivalent reduction in other crops.

While recognizing the importance of prices on African farmers' incentives and production decisions, higher product prices alone cannot ensure increased agricultural production (Bond, 1983). The crucial question in price policy analysis is: to what extent can prices be used as incentives to increase agricultural production? Food prices have a dual role: they serve as incentives to producers and they also determine the real income of consumers (Mellor, 1976; Timmer et. al., 1983). Government adoption of "incentive prices" encourages production, discourages consumption, and reduces imports. Alternatively, cheap food policies have the opposite effects of discouraging domestic production, encouraging consumption, and increasing imports. This characteristically ambivalent nature of price policies makes it difficult for the developing countries to achieve the best of two worlds, namely, to increase consumption of food in the short-run while encouraging efficient growth of agricultural production in the long run.

To increase food production and consumption at the same time would require employing a dual price policy of subsidizing both farmers as well as consumers (Timmer et. al., 1983). Krishna (1982) emphasizes the need to consider the relative

role of prices and nonprice elements for expanding agricultural output. According to Krishna, the size of the relative price increases needed to foster agricultural production in the poorest developing countries would be beyond the practical limits of those countries. The supply response to nonprice technological shifter variables (i.e., irrigation, etc.) is as much as five times that derived from the price elasticity, based on evidence in India. He argues that price reforms have a one-period effect only. Thus, changes in the nonprice technological variables have larger agricultural growth effects than positive price instruments alone. Although Krishna concedes some merit to the relationship between price policies and the discovery and nature of technological innovations in agriculture (see also Hayami and Ruttan in Eicher and Staatz), he contends that only some aspects of innovations are price-induced.

Shapiro, in response to the World Bank's (1981) emphasis on the price policy reforms required in Africa, points out the limits to policy reform facing African governments and stresses the crucial importance of extension and research in agricultural growth and development. According to Shapiro, the constraints on policy reform could be explored by asking:

1. What is the scope of incentive price policies?
2. What will be the magnitude and nature of farmer response to policy reform?

Shapiro argues that policy reforms do not have a lasting effect on production, but have mainly a one-shot benefit. Furthermore, government budget pressure limits the extent of price increases since African governments represent the largest employer of urban populations. Thus, higher food prices would imply an increased cost of living to consumers that will put pressures on real wages.

Shapiro also argues that most of the evidence of positive supply response in Africa refers to the responsiveness of production of individual crops to relative price changes, which may simply reflect the reallocation of resources from other crops. He further cautions about expecting too much from changing official government prices; open market prices are more important on farmers responsiveness than government fixed producer prices since governments purchase only a small part of the marketed output. However, both Krishna and Shapiro concede that a favorable price environment is essential for facilitating the adoption of improved technologies by farmers. Eicher (1983) sums up the caution required of the World Bank's assessments of the causes of Africa's agricultural problems by stating:

"...a balanced view is necessary on whether faulty pricing policies, lack of technology or supporting services are responsible for poor production performance" (p. 56).

3.2 Method of Analysis

3.2.1 Theoretical Basis

The method used in this paper for analyzing the effects of government price policy is the standard partial-equilibrium analysis derived from the theory of economic surplus. Government price policies are analyzed for their effects on: (a) quantities produced and/or consumed and the consequent social efficiency losses, (b) changes in the welfare of farmers and consumers and the distributional implications of these income transfers, and (c) changes in foreign exchange and government revenue.

The concept of economic surplus and its use in policy analysis were first developed in 1844 by Dupuit and were later expanded by Marshall and others. Since its development, the concept had occupied a crucial position in economic theory, but also stirred a great deal of controversy.

Several authors have applied the procedure to various countries. Bale and Greenshield (1978) employed the concept in their analysis of the effects of Japanese agricultural price distortions. Bale and Lutz (1979) analyzed the effects of agricultural price distortions of nine countries, including, both developing and developed nations, using the concept. Von Braun and de Haen (1983) made use of the concept in analyzing the effects of Egyptian consumer food subsidies. For an excellent presentation of the method in measuring the effects of agricultural price interventions, the reader is referred to Scandizzo and Bruce (1980).

3.2.2 The Model

To estimate the effects of government consumer subsidization on tradeable commodities, one needs to know what alternative prices would have prevailed in the absence of government price intervention. In this analysis, it will be assumed that free trade prices would have been the prevailing domestic prices to both producers and consumers. However, this implies that there would be no foreign exchange constraints in the country, and that the removal of government price controls would result in an equilization of domestic and world market prices. Nevertheless, there are a number of problems associated with using border prices as reference points arising from the existing world market imperfections. (For a discussion of these problems, see Scandizzo and Bruce, 1980). Despite this, world

market prices are used as reference points for computing the various effects induced by the government price policies.

Since both maize and sorghum are tradeable commodities, border prices are conveniently used as the reference points. This is justified for the following reasons:

- Somalia is a small country that cannot influence world market prices of maize and sorghum by its trading.
- Border prices represent the true opportunity cost of these commodities, and that imports of maize and sorghum (except for food aid) into the country are paid at their respective border prices.
- Border prices are conveniently available from various published sources.

The border prices employed in the analysis here are the economic import parity prices of maize and sorghum, defined as the foreign f.o.b. prices of these commodities from a specific exporting nation adjusted for transportation and other costs. These foreign prices are converted into their equivalent domestic currency using an appropriate shadow exchange rate to take into account the overvaluation of the domestic currency. In this analysis, the import parity prices are computed from U.S. Gulf port f.o.b. prices for No. 2 Yellow maize and No. 2 Milo yellow sorghum. This import parity price of the two commodities for the period 1971 to 1983 are shown in Appendices 2 and 3. For illustration of the computation of the border prices, the 1971 import price of maize and sorghum in current prices are given in Table 4.

The procedure for the estimation of the static short-run effects resulting from the government lowering of producer and consumer prices is illustrated in Figure 3.

Figure 3 shows the theoretical approach for measuring the various effects of government price intervention. These measurements are the changes in the quantities produced and/or consumed, changes in producers' and consumers' welfare, the production and consumption efficiency losses, and the changes in foreign exchange and government revenue

Initially, the domestic and border prices are the same. Q_1 is supplied and Q_3 is demanded, the difference $(Q_3 - Q_1)$ being met by imports. After the government intervenes, the domestic price is lowered while the border price remains as before. The lower prices induce a reduction of domestic supply to Q_2 and an increase of consumption to Q_4 . The size of these changes depends on the magnitude of the supply and demand elasticities for the commodity. The import needs of the country increase to $(Q_4 - Q_2)$.

TABLE 4

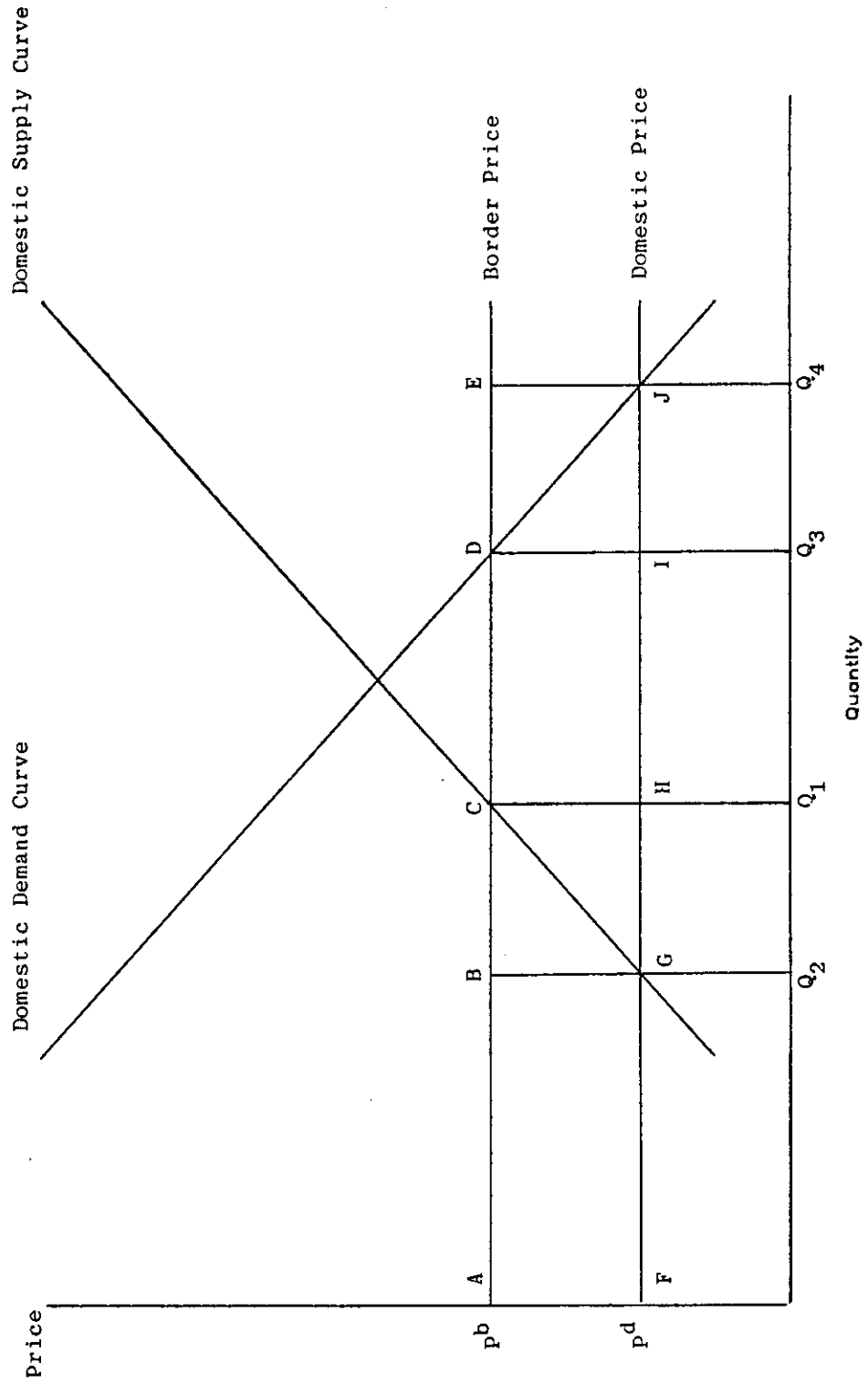
Import Parity Prices for Maize and Sorghum, 1971

Unit		Maize	Sorghum
F.o.b. Gulf Ports ^a	US \$/ton	58.4	55.7
Add: Insurance and Freight ^b	US \$/ton	40	40
C.i.f. Mogadishu	US \$/ton	98.4	95.7
C.i.f. Mogadishu (US \$1 = 9 So. Sh.) ^b	So.Sh./ton	886	861
Add: Handling Charges ^b	So.Sh./ton	86	86
Mogadishu Warehouse Price	So.Sh./ton	972	947
Less: Handling Margin ^b	So.Sh./ton	147	147
Less: Transport to Mogadishu ^b	So.Sh./ton	160	160
Farmgate Price	So.Sh./ton	665	640

^aWorld Bank, "Commodity Trade and Price Trends", Washington, D.C., August, 1982.

^bEstimates obtained from World Bank country study reports.

FIGURE 3: GOVERNMENT PRICE POLICY EFFECTS



Producers suffer a reduction in welfare from the government's imposition of lower farmgate prices for their products. Their welfare loss is given by the change in the producers' surplus and is equal to the area of the trapezoid ACGF. The welfare loss suffered by producers can be divided into an income transfer from producers to consumers equal to the area of the rectangle ABGF and the loss resulting from the reduction of supply, referred to here as the Net Economic Loss in Production (NELP), which is given by the triangle BCG. On the other hand, consumers gain from the government price intervention, which lowers the domestic price of the commodities, because they no longer have to pay the higher border prices. The welfare gain to consumers is given by the increase of consumers' surplus, which is equal to the area of the trapezoid ADIF.

To keep domestic prices below the border prices, the government must pay from its budget revenue a subsidy on the imported quantities (excluding food aid). Thus, the change in government revenue induced by the price intervention is equal to (BEJG). The triangle DEJ is paid by the government, but no commensurate gain accrues to consumers and is referred to as Net Economic Loss in consumption (NELc). The rest of the subsidy is paid by farmers in terms of lost income and implicit income transfers. The consumer gain is less than the government budget subsidies and producer welfare loss and the difference comes from efficiency losses.

3.2.3 Mathematical Model

The estimation of the effects of government price policies is based on the change that would have occurred between the actual and hypothetical free-trade situation. The basic analytical framework for measuring the various effects of the wedge between domestic and international prices created by the government intervention is the following:¹

1. Net Economic Loss in Production (NELp):

$$NELp = 1/2(Q^b - Q^d)(P^b - P^d)$$

2. Net Economic Loss in Consumption (NELc):

$$NELc = 1/2(C^b - C^d)(P^b - P^d)$$

¹The terminology and structure of the model closely follow that of Scandizzo and Bruce (1980).

3. Welfare Loss (or Gain) of Producers (WGp):

$$WGp = Q^d(p^d - p^b) - NELp$$

4. Welfare Gain (or Loss) of Consumers (WGc):

$$WGc = C^d(p^b - p^d) - NELc$$

5. Changes in Foreign Exchange (ΔFX):

$$\Delta FX = -p^b(Q^b - Q^d + C^d - C^b)$$

6. Changes in Government Revenue (ΔGR):

$$\Delta GR = - (NELp + NELc) - WGp - WGc$$

Where

Q^d = production at domestic prices

Q^b = production at border prices

C^d = consumption at domestic prices

C^b = consumption at border prices

p^d = domestic prices of the commodity

p^b = border prices equivalent at the shadow exchange rate

Important basic parameters for the computation of producers' and consumers' response to changes in the commodity prices are the supply and demand price elasticities of maize and sorghum. The changes in the quantities produced and consumed resulting from changes of domestic prices to their respective border price equivalents are calculated as follows:

$$\Delta Qi = n_{S_i} \frac{\Delta Pi}{P_i} Qi, \quad i = \text{maize, sorghum}$$

$$\Delta Ci = n_{D_i} \frac{\Delta Pi}{P_i} Ci$$

Where

$$\Delta Qi = (Q_i^b - Q_i^d) = \text{change in the quantity of commodity } i \text{ produced}$$

$$\Delta Ci = (C_i^d - C_i^b) = \text{change in the quantity of commodity } i \text{ consumed}$$

$$\Delta Pi = (P_i^b - P_i^d) = \text{change in the price of the commodity } i$$

n_{S_i} = own price elasticity of supply for commodity i

n_{D_i} = own price elasticity of demand for commodity i

3.3 Data Sources

The study relies exclusively on secondary data collected from various sources. To analyze adequately the effects of the price policies, fairly accurate and reliable data are necessary. However, serious data constraints for a number of critical variables were encountered during the study. This made necessary the use of a number of assumptions and recourse to empirical evidence from other countries similar to Somalia. Even the reliability of the data that were available for the country are of questionable quality. For example, production and consumption figures of the commodities from FAO and the Ministry of Agriculture reported by World Bank country reviews are different for most years.

The production and consumption data for the two commodities were mostly obtained from FAO Production and Trade Yearbooks. Border prices were calculated from World Bank and FAO commodity price figures which were then adjusted for transportation and other charges. The shadow exchange rate for the period 1971 to 1981 (i.e., US\$1 = 9 Somali Shillings); and freight, insurance, and handling charges adjustments for the commodities to producer points were obtained from recent World Bank estimates of these costs including domestic currency overvaluation. A shadow exchange rate of US\$ = 18 So. Sh., which is almost equal to the official exchange rate (i.e., \$1 = 17.4 So. Sh.), was used in converting the 1982 and 1983 border prices into domestic currency equivalents. The government-fixed domestic prices of the two commodities were obtained from World Bank and USAID country reports.

Unfortunately, estimates of the price elasticities of supply and demand for maize and sorghum were not available for the country. Also, these elasticities could not be calculated because of data limitations. Therefore, assumptions about the potential ranges of these basic parameters were made by examining the substantial empirical evidence that is available for other developing countries. An attempt was made to employ the elasticities of other neighboring East African countries. Furthermore, low and high ranges of the elasticities are used because of the wide variation in existing elasticities estimates for various countries. Supply elasticities estimates for most agricultural products range between 0.1 - 0.8 in the short-run and 0.3 - 1.2 in the long run. Demand price elasticities for basic food items range 0.2 - 0.7 (Scandizzo and Bruce, 1980). Thus, the following low and high ranges of positive supply elasticities were adopted: a low of 0.23 and a high of 0.95 for maize, and 0.31 and 0.59 for sorghum, respectively. (All of

these supply elasticities are derived from evidence in Sudan, except for the high range elasticity for maize which is from Kenya). The own price demand elasticities for both commodities are assumed to range from a low of minus .45 to a high of minus 0.7. (The lower figure is the estimated price elasticity of demand for coarse grains for the world as a whole and the higher figure represents the price elasticity of demand for cereals in Bangladesh. For more information, see evidence collected by Scandizzo and Bruce, 1980).

The estimates of the consequences of government pricing policies depend on the magnitude of supply and demand elasticities. For example, production response to relative price movements would be nil if supply were totally inelastic. The extent farmers can effectively respond to prices in their production decisions depends on their available technology and the elasticity of supply of production inputs. Thus, output response to the price variable could be expected to be relatively low in LDCs with predominantly subsistence-oriented agriculture coupled with low levels of agricultural technology than in countries with well developed commercial agriculture and agricultural technology.

Considering the lack of improved varieties and the very inadequate supply of modern inputs to cereal farmers in Somalia, the size of food grain supply elasticities probably lie in the lower scale of the potential magnitude range. Therefore, it is for these concerns that prompted the assumed elasticities to be sought from other neighboring African countries with similar economic structure and technological level rather than from the developed nations.

Therefore, it is important to note here that the changes induced by the price policy are related to the assumed elasticities and to the price distortions between domestic and border prices. Furthermore, implicit in the discussion of production and consumption effects of government price policies is that producers and consumers are considered to be two separate groups. This distinction of producers and consumers as separate groups applies also to the rest of the paper.

CHAPTER IV

ANALYSIS OF THE RESULTS

The effects of government-fixed low producer and consumer prices are analyzed and evaluated on their impact on the following four major dimensions of food system performance:

1. The incentive or disincentive created by the deviation of domestic and international prices. This is measured by the Nominal Protection Coefficient (NPC), which is the ratio of domestic to border prices.
2. The extent of efficiency losses resulting from the effects of government-administered prices on production and consumption. The monetary valuation of these losses is given by the Net Economic Losses in production and consumption.
3. The welfare gains (or losses) of producers and consumers and the income transfers created by the differential effects of the price policies on the two groups.
4. The increase on the burden of government budget and foreign exchange earnings resulting from the government policies of keeping domestic prices below the world market prices.

4.1 Nominal Protection Coefficients (NPC)

The NPC indicates the extent of the divergence between the domestic price and the border price of a given commodity. It gives a rough estimate of the incentives or disincentives to both farmers and consumers created by the price policies. An NPC < 1 indicates that domestic prices are lower than border prices, and price policies favor consumers at the expense of producers, while an NPC > 1 shows that consumers are taxed and producers benefit from such policies. The average NPCs for maize and sorghum in the period 1971-1983 were approximately .65 and .68 percent respectively. These indicate that the government price intervention during the period under analysis kept domestic prices lower than border prices, and were mainly in favor of consumers, while farmers suffered from low purchase prices (see Table 5).

Furthermore, in 12 out of 13 years the NPCs for both commodities were less than one, revealing that farmers were being offered prices for their output which were lower than the opportunity cost of imports to the country. The only

TABLE 5
Nominal Protection Coefficients for Maize and Sorghum 1971-83

	Maize			Sorghum		
	Domestic (ADC) Prices So. Sh./Ton	Border Prices So. Sh./Ton	NPC	Domestic (ADC) Prices So. Sh./Ton	Border Prices So. Sh./Ton	NPC
1971	350	665	.53	400	640	.63
1972	350	643	.54	400	643	.62
1973	450	1,021	.44	450	976	.46
1974	500	1,327	.38	600	1,228	.49
1975	500	1,215	.41	900	1,146	.79
1976	500	1,151	.43	900	1,086	.83
1977	900	1,159	.78	900	935	.96
1978	900	1,045	.86	900	983	.92
1979	900	1,179	.76	900	1,111	.81
1980	1,200	1,268	.95	1,200	1,299	.92
1981	1,800	1,316	1.37	1,550	1,277	1.21
1982	1,800	2,111	.85	1,550	2,086	.74
1983	2,200	2,936	.75	1,700	2,814	.60

exception to this was 1981, when the domestic prices of the two commodities became higher than the border prices for the first and last time during the 13-year period under analysis. This came from the 50 and 30 percent nominal upward adjustment of producer prices in 1981.

The wedge between domestic and world market prices for the two commodities as indicated by NPCs show that maize producers were taxed more than sorghum producers from 1971 to 1980, and also slightly more on the average for the entire 13-year period. During the four years between 1973-1976, the NPC for maize was below 45 percent and the largest deviation of domestic and border prices occurred in 1974, when the NPC was equal to 38 percent. Compared to other developing countries, the 1971-80 NPC for maize in Somalia, which was equal to 0.65 was below those of Kenya (1.45), Malawi (1.51), and Zambia (0.75) during the same period. (World Bank, 1981).

4.2 Production and Consumption Effects

The maize and sorghum price policies pursued by the government during the period under analysis, except in 1981 when domestic prices of both maize and sorghum were higher than their border prices, caused the domestic prices of the two commodities to be lower than they would have been otherwise under free trade policies. As a result, the government price intervention induced a significant reduction of domestic supply and increased consumption of the commodities.

The estimated effects of the government grain price policies during the period are shown in Table 6. They included:

- reduction in maize production of between 240 thousand and 1 million metric tons and a reduction in sorghum production of between 230 and 450 thousand tons.

The low and high estimates correspond to the assumed low and high supply elasticities for each commodity.

- approximately 560 to 830 thousand tons of increased maize consumption, and an increase of 330 to 520 thousand tons in sorghum consumption.

The low and higher consumption estimates correspond to the low and high estimates of the same own price elasticities of demand for the two cereals.

The government price interventions in maize and sorghum, therefore, had the dramatic real effect of a 15 to 60 percent reduction in domestic maize output

TABLE 6
Real Effect of Government Price Policies 1971-83
(in 000 Metric Tons)

Year	Maize						Sorghum					
	Production		Consumption		Estimated Change in Production		Estimated Change in Consumption		Estimated Change in Production ^a		Estimated Change in Consumption	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1971	70	-14.49	98	-59.85	+39.50	+61.45	129	-23.99	-45.67	+34.83	129	54.18
1972	105	-20.22	106	-83.51	+39.93	+62.12	149	-28.06	-53.41	+40.73	149	63.36
1973	164	-47.86	166	-197.69	+94.79	+147.45	153	-55.44	-105.52	+80.48	153	125.19
1974	165	-62.77	176	-259.27	+131.00	+156.33	137	-44.45	-94.48	+64.53	137	100.38
1975	100	-32.89	170	-135.85	+109.40	+170.17	100	-8.47	-16.13	+12.30	100	19.13
1976	90	-26.95	140	-111.32	+82.03	+127.60	130	-8.33	-15.85	+12.09	130	18.81
1977	80	-5.30	109	-21.87	+14.15	+22.02	160	-1.93	-3.67	+2.80	160	4.36
1978	90	-3.34	94	-13.78	+6.84	+10.64	150	-4.29	-8.16	+6.23	150	9.68
1979	105	-7.49	128	-30.92	+17.86	+27.78	120	-10.90	-20.75	+15.83	120	24.62
1980	111	-1.48	179	-5.98	+4.57	+7.10	136	-3.48	-6.62	+5.05	136	7.85
1981	142	+8.78	271	+36.27	-32.79	-51.01	222	+12.12	+23.07	-17.60	222	-27.37
1982	150	-5.96	275	-24.62	+21.38	+33.26	235	-25.19	-47.95	+36.57	235	56.89
1983	235	-18.08	238	-74.69	+35.83	+55.74	141	-28.64	-54.51	+42.61	141	66.28
Total	1607	-238.00	2150	-983.10	+564.47	+830.62	2060	-231.06	-449.64	+336.50	2063.5	523.36

^aThe "low" and "high" bounds correspond to the lower and higher ranges of the elasticities.

relative to the total production in the 13-year period, and from 11 to 22 percent reduction of the country's potential sorghum production (see Table 6). In other words, domestic potential output of the two commodities was reduced by between 18 and 76 thousand tons of maize, and by between 16 to 32 thousand tons of sorghum annually. However, because of the lower domestic consumer prices, consumption of the two commodities increase annually by an average of 40-60 thousand tons of maize and between 24-37 thousand tons of sorghum. Consumers benefited from the subsidy policies by the fact that they were able to purchase more of both commodities than would otherwise have been possible if the grains were offered to them at border prices.

4.3 Efficiency Effects

The analysis of the cost of government price policies reveals that if farmers had enjoyed product prices equal to the border prices, the country's total output of the two commodities would have been from 470 thousand to 1.4 million metric tons higher than actual output recorded in that period. This translates to a foregone opportunity by the country of up to 38 percent increase in cereal production.

Therefore, the "incorrect" price signals to producers and consumers, which failed to reflect the relative scarcities of commodities in the country, created a substantial misallocation of resources and efficiency losses. Domestic resources could have been used to produce maize and sorghum in the country more cheaply than imports as long as the border prices of these commodities were higher than domestic prices. The government intervention and the cheap food grain policies had the undesirable effect of forcing the country to import its food grains at prices higher than the country could produce them domestically (excluding food aid).

The estimates of the efficiency losses in production and consumption in monetary values are given in Tables 7 and 8. The total efficiency losses to the economy is simply the sum of the Net Economic Losses in production and consumption. The country suffered a total efficiency loss for both commodities ranging from 450 to 850 million Somali Shillings in the 13-year period. On an annual basis, the price policies caused a 30 to 60 million So. Sh. efficiency loss. These annual efficiency losses for the two commodities alone represent from 1 to 3 percent of GDP for the year 1970!

TABLE 7
 Monetary Effects of Government Maize Price Policy 1971-83
 (in Millions of Somali Shillings)

	Welfare Gain for Producers		Welfare Gain for Consumers		Changes in Government Revenue		Changes in Foreign Exchange		NELP		NELC		NEL	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1971	-24.332	-31.476	24.502	21.045	-8.673	-35.903	-80.661	2.282	9.426	6.221	9.678	8.503	19.104	
1972	-33.727	-42.998	25.208	21.958	-0.293	-38.675	-93.634	2.962	12.233	5.850	9.100	8.812	21.333	
1973	-107.309	-150.085	67.725	52.690	-1.142	-145.564	-352.386	13.665	56.441	27.061	42.096	40.726	98.537	
1974	-162.410	-243.661	91.385	80.911	-9.097	-257.129	-551.000	25.955	107.206	54.167	64.641	80.122	171.847	
1975	-83.258	-120.066	82.441	60.715	-50.050	-172.876	-371.814	11.758	48.566	39.109	60.835	50.867	109.401	
1976	-67.363	-94.825	64.441	49.608	-32.550	-125.433	-274.993	8.773	36.235	26.699	41.532	35.472	77.767	
1977	-21.406	-23.552	26.476	25.458	-7.589	-22.541	-50.867	0.686	2.832	1.833	2.851	2.519	5.683	
1978	-13.291	-14.049	13.180	12.905	-0.626	-10.631	-25.511	0.241	0.999	0.496	0.771	0.737	1.770	
1979	-30.339	-33.609	33.221	31.837	-6.417	-29.879	-69.206	1.044	4.314	2.491	3.875	3.535	8.184	
1980	-7.597	-7.751	12.017	11.931	-4.624	-7.623	-16.582	0.049	0.203	0.155	0.241	0.204	0.444	
1981	66.603	59.950	-139.099	-143.508	62.436	54.710	114.862	2.125	8.778	7.935	12.344	10.060	21.122	
1982	-47.577	-50.475	82.200	80.353	-38.875	-57.719	-122.187	0.927	3.829	3.325	5.172	4.252	9.001	
1983	-179.614	-200.445	161.983	154.658	-2.208	-158.286	-343.792	6.654	27.485	13.185	20.510	19.839	47.995	
Total	-711.620	-953.042	545.680	460.561	-99.708	-1,007.549	-2,238.262	77.121	318.547	188.527	273.646	265.648	592.193	

Table 8
 Monetary Effects of Government Sorghum Price Policy 1971-83
 (In Millions of Somali Shillings)

	Welfare Gain for Producers		Welfare Gain for Consumers		Changes in Government Revenue		Changes in Foreign Exchange		NELp		NELc		NEL	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1971	-33.839	-36.440	26.780	24.458	--	-37.647	-63.901	2.879	5.480	4.180	6.502	7.059	11.982	
1972	-39.616	-42.696	31.258	28.509	--	-44.234	-75.081	3.409	6.489	4.949	7.698	8.358	14.187	
1973	-95.059	-108.229	59.312	47.554	--	132.655	-225.167	14.581	27.751	21.166	32.924	35.747	60.675	
1974	-99.994	-115.704	65.775	54.517	--	-33.826	-239.292	13.958	29.668	20.261	31.219	34.219	61.187	
1975	-25.642	-26.583	23.087	22.247	--	-23.806	-40.408	1.042	1.983	1.513	2.353	2.555	4.336	
1976	-24.925	-25.654	23.056	22.431	--	-22.174	-37.639	0.745	1.474	1.124	1.749	1.869	3.223	
1977	-5.634	-5.664	5.551	5.524	--	-4.422	-7.505	0.034	0.064	0.049	0.076	0.083	0.140	
1978	-12.628	-12.789	12.192	12.048	--	-10.334	-17.542	0.178	0.339	0.258	0.402	0.436	0.741	
1979	-26.470	-27.509	23.650	22.723	--	-26.694	-50.401	1.150	2.189	1.670	2.597	2.820	4.786	
1980	-13.636	-13.792	13.214	13.075	--	-11.077	-18.802	0.172	0.328	0.250	0.389	0.422	0.717	
1981	58.951	57.457	-63.008	-64.432	--	+37.947	+64.411	1.655	3.149	2.406	3.736	4.057	6.885	
1982	-132.711	-138.810	+116.160	110.715	--	-128.833	-218.677	6.751	12.850	9.800	15.245	16.551	28.095	
1983	-173.019	-187.438	137.239	124.053	-3.899	-200.509	-339.923	15.945	30.364	23.734	36.920	39.679	67.284	
Total	-624.222	-683.851	474.266	423.512	-3.899	-738.264	-1,269.927	62.499	122.128	91.356	142.110	153.855	264.238	

The "Low" and the "High" refer to the low and high elasticity range and do not necessarily correspond to the lows and highs of the respective monetary effects.

On the basis of this evidence, it could be argued that the country's maize position would have been much better in the absence of the unfavorable producer prices. The same would be true for sorghum. Using the high supply elasticity range for maize, the estimated production change is even larger than the maize imports during the period. Therefore, if maize farmers had been offered prices for their output that were equivalent to import parity prices, the country would not only most likely have achieved its self-sufficiency goal in that commodity, but could also have become a net exporter of maize in most years. The likelihood of this is reinforced by the presence of vast areas of uncultivated but potentially arable land in the country.

It should be noted that the present analysis is a partial equilibrium analysis and is focused on two agricultural products only. Thus, this analysis does not take into account the long-term dynamic economy-wide effects of the price policies. Furthermore, this analysis does not include the effects of other price distortions (i.e., exchange rate, trade policies, input prices, politics, etc.), which have significant influence on the production and consumption of food grains in the country.

4.4 Welfare and Distribution Effects

A major effect of the maize and sorghum pricing policies is the differential impact of the policies on producers and consumers. The lower commodity prices tax producers and benefit consumers. Producers suffer a welfare loss, which is measured by the change in producers' surplus, and the consumers' welfare gain is measured by the change in consumers' surplus.

During the period 1971-1983, maize and sorghum producers incurred a 1.32 to 1.63 billion So. Sh. welfare loss because of the lower government-fixed price deliveries. Maize farmers suffered more than sorghum producers because of the relatively larger deviations in domestic prices of maize compared to the border prices. These total welfare losses of maize producers amounted to 700 to 950 million So. Sh., while sorghum producers had an estimated total welfare loss of 620 to 680 million So. Sh.

Consumers, on the other hand, gained an increase of welfare from 880 to 1,020 million So. Sh. over the same period (see Table 7 and 8). Thus, the magnitude of the welfare loss to producers was larger than the consumers' welfare gain by approximately 120 to 600 million So. Sh.

Based on the evidence provided by the analysis, the welfare transfers are more than two times the efficiency losses. Therefore, the largest impact of the pricing policies occurred as welfare transfers from producers to consumers.

Considering the poverty categories of the country (Haaland and Keddeman, 1984), the price policies have exacerbated the existing unequal income distribution. Farmers and rural people being the poorest sections of the population, the price policies have further deteriorated the income position of the poor and lowered their standard of living.

4.5 Qualifications of the Study

Despite the indication by the model that sorghum import requirements increased as a result of the cheap food policies of the government, the evidence shows that no sorghum has been imported from 1971 to 1982.¹ This apparent contradiction between the predicted increases in imports by the model and the evidence can be explained partly by the composition of food aid component and partly by an underlying assumption in the model. The cereal aid received by the country from external donors consisted mainly of maize and wheat. The commodity composition of food grain aid was not determined by consumer preferences and obviously did not consciously take account of the traditional cereal consumption patterns in the country. Furthermore, the food aid component was not part of the conceptual framework of the model; all estimated import requirements were assumed to have been obtained through commercial imports and that the country faced no foreign exchange constraints. The estimates by the model represent the potential situation and the likely outcome had the country received no food aid and if it owned sufficient foreign exchange reserves to cover its import needs at world prices. Thus, the presence of food aid allowed the country to obtain food grains from abroad without paying for them at the going world market prices, and also eliminated the government budget costs entailed in subsidies of commercial imports.

¹Imports are summed with domestic production to arrive at estimated consumption. Thus, the actual quantities of maize and sorghum imports are the difference between consumption and production.

CHAPTER V

V. SUMMARY, CONCLUSIONS, POLICY IMPLICATIONS
AND NEEDS FOR FURTHER STUDIES5.1 Summary

Agriculture occupies a dominant and crucial role in the economy of Somalia, and provides the major basis for the long-run development and growth prospects of the country. Expansion in food and agricultural production, is thus an essential element for achieving the country's goals and aspirations of economic progress. Therefore, any measures and policies which help in achieving improved agricultural performance would certainly lead the country in the desired direction. On the other hand, government policies that are biased against agriculture would reduce the country's chances of success for a sustained economic growth and development.

The aim of this paper has been to examine the effects of maize and sorghum price policies on production and consumption, and the effectiveness of such policies for achieving increased agricultural output and economic growth. The concept of economic surplus was used in estimating the effects of government maize and sorghum policies as they affect incentives, efficiency and income distribution through the price mechanism. Specifically, the paper analyzed the effects of price policies on the following: the incentives for farmers, the magnitude of supply and demand responses to prices, the welfare changes for producers and consumers, and government revenue and changes in foreign exchange reserves.

The study reveals that government policy significantly reduced the domestic prices of the two commodities relative to their equivalent border prices. Consequently, domestic producers were heavily taxed by the price policy while consumers gained from the lower food grain prices. Furthermore, real producer prices of both commodities declined substantially during the period despite the infrequent nominal increase in producer prices. It has also been noted that the government still maintains the open market prices of food grains close to the ADC fixed prices through the manipulation of large volumes of food grain received by the country.

Price policies have undercut the country's potential maize and sorghum production by as much as 60 percent and 22 percent, respectively, compared to

the actual output recorded in the period. Furthermore, the price policies encouraged domestic consumption and significantly increased the country's dependence on food grain imports. Consequently, the government price policies caused substantial efficiency losses.

A major impact of the price policies involved a considerable welfare transfer from producers to consumers. Producers suffered an estimated 1.32 to 1.63 billion So. Sh. loss and consumers gained between 700 and 950 million So. Sh. of income transfer during that period. Therefore, based on the empirical evidence of the incidence of poverty in Somalia, the price policies further worsened the income distribution by impoverishing farmers even more, although two-thirds of them are already below the poverty line.

The analysis also reveals that the government budget had incurred an estimated 100 million So. Sh. revenue loss because of the consumer subsidization of imported food grains. Furthermore, the import bill increased significantly and scarce foreign exchange, which could otherwise have been invested in the country's development programs, was spent unnecessarily on food grain imports.

There seems to be no better way to sum up the essential role of price policies than the following brief quote:

"Production will...be controlled by prices, for the profits of the goods also will depend upon prices, for prices form incomes, and it is with the help of these incomes that the goods produced are distributed amongst the members of society..." (Polanyi).

5.2 Conclusion and Policy Implications

The analysis of the paper clearly illustrates the lack of harmony between the government's stated objectives and the policy measures undertaken. None of the objectives of self-sufficiency in maize and sorghum, improved standards of living and the welfare of farmers, increased farm employment for the rapidly growing farm population, and increased nutritional well-being of the population from increased food production seem to have been furthered by the price policies pursued during the period. On the contrary, the price policies reduced potential grain production which led to a situation in which the country became more dependent on grain imports to adjust domestic supply and demand. As a result, the percentage share of maize imports relative to domestic consumption rose from 7 percent in 1971-74 to about 40 percent by 1981-83, resulting in a decline of self-sufficiency in maize from 1971 to 1983.

The government's across-the-board subsidy scheme benefited both the needy low-income consumers as well as the relatively better off. Thus, it would be more appropriate to explore other mechanisms to ensure the supply of sufficient food to poor consumer groups without necessarily subsidizing other groups who do not necessarily need food grain subsidies.

The large income transfers from producers impoverishes the rural population and their capacity to raise their standard of living. The large influx of emigrants from the countryside to urban areas and the rapidly growing number of "shanty towns" on the outskirts of the capital city as well as around other cities may be a visible sign of the lack of profitability of farm activities and reduced productive farm employment. Also, the country's long-run investments required for expanding food grain production to feed an increasing population might also be jeopardized by the lack of appropriate incentives.

The apparent policy recommendations from the present analysis are to find ways to expand food grain production while at the same time considering the consumption effects of higher price policies. Taking into account the practical limits of relative price increases by the government to encourage domestic food grain production, technological improvements offers an alternative for increasing production. Improved technologies can raise the supply of food grains in the country while at the same time benefiting both farmers (in terms of reduced per-unit costs of production) and consumers in the form of lower prices. Government food grain trade as a residual buyer could appropriately serve as a price stabilizing mechanism in periods of oversupply and/or undersupply to reduce damaging price fluctuations to both farmers and consumers. In addition to price stabilization, the internal domestic prices must be at a level that will lead to the long-run efficient allocation of resources in such a way that it will encourage farmers to invest their surplus in their farms. Thus, the real producer prices paid to farmers should take into consideration the inflation rate, international market price signals, and rational inter-product price relationships which would not cause farmers to switch resources from the socially desirable crop mix to more lucrative but less socially desirable enterprises.

5.3 Suggestions for Further Research

The data constraints encountered during the study and some of the uncertainties about the reliability of the available data suggest the need for further study to determine more accurately the impact of the price policies. The

analysis was based upon assumed supply and demand elasticities for maize and sorghum rather than on estimated responses. Therefore, the magnitude of the supply and demand responses of the two commodities and their cross elasticities with other crops that compete for the same resources in production and/or represent close substitutes in consumption need to be estimated to fully understand the effects of the price policies.

A major area for further research involves the analysis of the interactions between prices, market institutions, and technology. A popular policy reform recommendation in the past has been unrestrained emphasis on increased producer prices for expanding domestic production. Such a prescription was solely based on positive supply response observations from empirical studies in developing countries. The complex technological and institutional constraints faced by the food grain subsector has often been overlooked. Constraints that reduce the positive response to increased producer prices include the lack of an adequate transportation network which reaches the farmers in the more remote areas, unavailability of improved varieties, an underdeveloped modern input supply system, and the lack of a well-functioning marketing information system. When such factors are missing, incentive prices alone cannot be expected to have any significant effect on the country's cereal production. Thus, there is a need for a diagnostic study to identify the opportunities for possible complementary technological and institutional reforms to accompany price policy reforms in order to stimulate the subsector to take advantage of new economic incentives more effectively.

Despite the government's emphasis on expanded domestic food grain output, the marketing system which handles these commodities has received little sustained attention. The on-going food grain policy reforms in the country are being announced without sufficient information about the functioning of the cereal markets. Effective marketing institutions represent a major positive incentive for expanding production and reducing risk for both farmers and marketing agents. Therefore, there is an urgent need to study the functioning of the food grain marketing system and explore possibilities for effective improvement to guide policy reforms. A subsector analysis could provide insights into the crucial rural-urban linkages of cereal production and consumption, the various problems involved in the subsector, and opportunities for improving channel-wide performance. Such a study would encompass the various stages of production and marketing as the commodities pass from the farmer to the final consumer.

Furthermore, future studies need to examine the relative efficiency of private and public marketing institutions and explore the basis for government officials' current strong belief that private traders "exploit" both producers and consumers. A comparative analysis needs to be carried out of the alternative marketing institutions and their different impacts on the marketing margins, farmer incentives, income distribution, inducement of new technologies, and other desirable performance variables. The comparison between the efficacy of the alternative marketing systems could provide information about the appropriate role for government in the grain marketing system.

Finally, particular attention has to be given on the impacts of the considerable quantities of food aid on domestic output and prices. The costs and benefits of food aid need to be examined, and researchers need to identify how food aid resources can be used in a manner that would stimulate the country to regain its potential food production capacity.

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APPENDICES

Appendix I

Somalia: Production of Major Agricultural Crops 1971-83
(in 000's Metric Tons)

Year	Maize	Sorghum	Rice	Sesame	Vegetables	Sugar Cane	Bananas
1971	99.4	128.7	2.4	35.3			150.8
1972	114.9	149.1	3.5	41.0	23.4	442.0	188.5
1973	98.9	128.4	3.5	35.4	27.2	401.0	168.3
1974	96.8	125.7	4.1	34.7	23.0	422.0	157.5
1975	103.6	134.7	4.9	37.3	24.7	370.0	106.0
1976	107.6	139.3	5.4	38.8	25.7	333.3	96.6
1977	111.3	145.1	8.4	40.6	26.9	320.0	65.2
1978	107.7	141.1	12.1	40.0	26.5	311.5	69.7
1979	108.2	140.1	13.4	40.6	26.6	265.0	72.2
1980	110.5	16.7	38.4	27.2	27.2	419.5	60.4
1981	142.0	222.0	19.0	53.2	35.1	500.0	69.3
1982	150.0	235.0	20.0	57.0	102.2	535.0	72.0
1983	235.0	141.0	2.8	N.A.	N.A.	N.A.	N.A.

Source: 1971-80 Production data from the Ministry of Agriculture reported in the World Bank's (1983) "Somalia: Policy Measures for Rehabilitation and Growth."

The 1981-83 data from Ministry of Agriculture reported in S. Buchanan (1984).

Appendix 2
Import Parity Prices for Maize 1971-83

Item	Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
F.o.b. Gulf Ports (U.S. #2 Yellow)	\$/ton	58.4	56.0	98.0	132.0	119.6	112.4	95.3	100.7	115.5	125.3	130.8	113.8	136.4
Add: Insurance and Freight		40	40	40	40	40	40	40	40	40	40	40	40	40
C.i.f. Mogadishu (\$1 = 9 So. Sh.)	\$/ton	98.4	96.0	138.0	172.0	159.6	152.4	135.3	140.7	155.5	165.3	170.8	168.6	175.4
F.o.b. Mogadishu So. Sh.		886	864	1242	1548	1436	1372	1380	1266	1400	1489	1537	3035	3157
Add: Handling Charges		86	86	86	86	86	86	86	86	86	86	86	86	86
Free Warehouse Mogadishu		972	950	1328	1634	1522	1458	1466	1352	1486	1575	1623		3121
Less: ADC Margin		147	147	147	147	147	147	147	147	147	147	147	147	147
Less: Transport to Mogadishu		160	160	160	160	160	160	160	160	160	160	160	160	160
Farmgate Value		665	643	1021	1327	1215	1151	1159	1045	1179	1268	1316	2086	2814

Appendix 3

Import Parity Prices for Sorghum 1971-83

Item	Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
F.o.b. Gulf Ports (No. Milo Yellow)	\$/ton	55.7	56.0	93.0	121.0	111.9	105.2	88.4	93.8	108.1	128.9	126.4	89.6	135.4
Add: Insurance and Freight	\$/ton	40	40	40	40	40	40	40	40	40	40	40	40	40
C.i.f. Mogadishu (\$1 = 9 So. Sh.)	\$/ton	95.7	96.6	133.0	161.0	151.9	145.2	128.4	133.8	148.1	168.9	166.4	129.6	175.4
F.o.b. Mogadishu		861	864	1197	1449	1367	1307	1156	1204	1332	1520	1498	2332	3157
Add: Handling and Port Charges		86	86	86	86	86	86	86	86	86	86	86	86	86
Mogadishu Warehouse		947	950	1283	1535	1453	1393	1242	1290	1418	1606	1584	2418	3243
Less: ADC Margin		147	147	147	147	147	147	147	147	147	147	147	147	147
Less: Transport to Mogadishu		160	160	160	160	160	160	160	160	160	160	160	160	160
Farmgate Value		640	643	976	1228	1146	1086	935	983	1111	1290	1277	2111	2936

Appendix 4

I. LAW No. 51 of 22 July 1971

State control of the purchase sale and distribution of maize and sorghum.

THE PRESIDENT
OF THE SUPREME REVOLUTIONARY COUNCIL

HAVING HEARD the Council of Secretaries;
TAKING NOTE of the approval of the Supreme Revolutionary Council;
HAVING FELT the necessity to protect the interest and well-being of the producer and consumer, and eradicate the deplorable exploitation system of man by man;

HEREBY PROMULGATES

the following Law:

Art. 1

1. The Ministry of Agriculture shall by the sole organ authorized to purchase, sell and distribute maize and sorghum consumed throughout the territory of the Somali Democratic Republic.

2. The Agricultural Development Corporation (ADC) shall under the direction of the Secretary of State for Agriculture, exercise the power to trade, store, import and export maize and sorghum.

Art. 2

1. The Agricultural Development Corporation shall, through its regional centres or representatives, make the necessary arrangements for purchase, storage, sale, and distribution of maize and sorghum in all regional administrative headquarters.

Art. 3

1. The Ministry of Interior shall, through the competent district authorities, be responsible for the storage, safe and distribution of maize and sorghum in the district centres, townships and villages as the case may be.

Art. 4

The local Government in each district shall form a retail cooperative and may include any Somali citizen permanently residing in the district to be a member of the cooperative.

Art. 5

1. The Secretary of State for Agriculture shall by decree fix producer, wholesale and retail prices for sorghum and maize for every season in consultation with the General Manager of the Agricultural Development Corporation.

Art. 6

1. The purchase, storage, sale and distribution of maize and sorghum by private persons for commercial purposes is hereby prohibited.

2. Notwithstanding the provisions of paragraph 1 of this Article, a producer is authorized to store for domestic use up to one hundred kilos of maize or sorghum per season for each member of his family.

Art. 7

1. Whoever contravenes the provisions of article 6 above shall, depending on the gravity of the offence, be liable to have his commodities confiscated and a fine up to So. Sh. 10,000 or to imprisonment up to three years or to both such fine and imprisonment.

Art. 8

1. Regulations for the implementation of this law shall be issued by decree of the President of the Supreme Revolutionary Council on the proposal of the Secretary of State for Agriculture.

Art. 9

1. Any law or provision contrary to or inconsistent with this Law is hereby abrogated.

Art. 10

1. This Law shall come into force immediately. It shall be included in the Official Compilation of laws and decrees of the Somali Democratic Republic.

2. All persons shall be required to observe it and cause others to observe it as a law of the State.

Maj. Gen. Mohamed Siad Barre
PRESIDENT
of the Supreme Revolutionary Council