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## **AGRICULTURAL POLICY ANALYSIS PROJECT, PHASE II**

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### **U.S. Agency for International Development**

Assisting AID Bureaus, Missions and Developing Country Governments  
to Improve Food and Agricultural Policies

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**Demand Management in Egypt**

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**DEMAND MANAGEMENT IN EGYPT**

**Prepared for  
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## EXECUTIVE SUMMARY

Changes in patterns of food consumption are a well recognized feature of economic development. Income growth generally leads to a more diversified diet, with a decrease in the portion of calories provided by starchy staples, and an increase in the consumption of animal protein, oils, and high value products such as fruits and vegetables. The share of disposal income spent on food declines, although expenditures for food increase.

The way in which demand patterns develop, however, is shaped by the policy environment within which economic development occurs. The general impact of economic policies on the growth and distribution of income has long been recognized. Less attention has been paid to the impact of other policies--including consumer subsidies, agricultural pricing, exchange rates and trade--on the evolution of demand patterns.

These policies have significantly shaped the demand for food in Egypt. Consumer subsidy policies, agricultural pricing policies and the operation of the exchange rate system have all enhanced consumption of cereals, sugar, and oils, while reducing production and increasing imports or decreasing exports of these commodities. Exchange rates accounted for a major, sometimes the major, portion of these effects. These policies also had significant income effects, generally increasing consumer incomes and reducing farm income, although the impact on rural incomes underestimates the positive impact of the expanded availability of subsidized commodities during the 1980s.

Policies have also affected the consumption of protein, although the quantitative evidence is less clear. Subsidized sales of frozen poultry and beef appear to have supported urban consumption, as these commodities were not available in rural areas where refrigeration was lacking. Numerous studies concluded that fresh meat prices in Egypt were high relative to prevailing international market prices, and that feed inputs were a significant subsidy to farmers, offsetting the losses associated with grain policies, but there have been no systematic studies estimating income, production, and trade effects paralleling the work done on major cereal crops.

Most of Egypt's significant policy reforms occurred in 1986-89. Detailed analysis of changes in demand for this period is lacking, primarily because of lags in data availability. Several generalizations can be made, however. Policy changes have induced significant changes in consumption patterns for meat and poultry, with sharp declines per capita consumption in 1988 and 1989 following directly from difficulties in implementing policy reform measures. Per capita consumption of other commodities did not decline significantly, although upward consumption trends for all major commodities slowed after 1985. A combination of income and price effects appear responsible.

Real prices for major subsidized commodities such as bread and wheat flour have increased substantially in 1988-89. The prices of potential substitutes has increased more,

however, leaving bread the relatively least expensive food staple. Real prices for chicken and beef are significantly higher. Import restrictions are likely to maintain high prices for these commodities for the foreseeable future.

Partial changes in macroeconomic and sectoral policies are clearly having an impact on demand, and are extensive enough to signal a shift in Egypt's import intensive demand management strategy. They are not enough, however, to support the development of some of the crucial requisites for enabling agriculture to adjust to the demand patterns characteristic of middle income countries--such as more effective markets and efficient agroindustries. How effectively Egypt can position itself to catalyze growth enhancing changes in demand remains to be seen.

## 1. INTRODUCTION

Egypt's policy environment has played a major role in shaping, or managing, the demand for food over the past three decades. During the 1952-73 period, Egypt followed a variant of what Goldman has termed a foreign exchange or export-oriented demand management system for agriculture.<sup>1</sup> Agriculture was managed in order to provide foreign exchange earnings, subject to the constraint imposed by the nation's strong emphasis on social programs (embodied in a variety of controls and subsidies). In response to the external stimulus of oil price increases, and a significant foreign policy shift, Egypt moved rapidly to an import intensive demand management strategy. The 1975-84 period witnessed significant changes in diet and dietary composition which directly reflect this shift in demand management strategy. Other sources of foreign exchange (oil, remittances) took some of the pressure for export generation off the agricultural sector and financed a surge of food imports. In recent years (1985-90) a more adverse international economic environment and the adoption of significant macro and sectoral policy reforms has stabilized (though not yet reversed) the previous decade's demand shifts.

The focus of this paper is on the complex of policies which Goldman identifies as key components of demand management--pricing policies, macroeconomic policies, and trade policies. In the Egyptian case, the relevant pricing policies include not only direct food subsidies, provided through a variety of programs administered by the Ministry of Supply, but a range of other policies administered by the Ministry of Agriculture and Land Reclamation. Macro policies focus on the exchange rate, embodied in a complex system of multiple exchange rates. Trade policies include both the general orientation toward trade, and specific controls on particular food and agricultural commodities.

Chapter 1 describes changes in Egypt's consumption patterns over time, and compares Egyptian patterns with those of other countries and regions of the world. Chapters 2-4 detail the policies which have shaped aggregate consumption patterns. Chapter 2 discusses the system of food subsidies and rationing, as well as the changes which it has recently undergone. Chapter 3 chronicles the wide range of government interventions in the agricultural sector, the exchange rate, and the trade regime which directly and indirectly shape the productivity of the sector and the choices available to consumers. It also highlights the recent policy changes which have been undertaken. Chapter 4 discusses the impact and significance of recent policy reforms for Egyptian development and demand management. It also highlights some of the pitfalls associated with partial reforms in a complex, heavily regulated economic environment.

## 2. EGYPTIAN CONSUMPTION PATTERNS

The Egyptian diet, like diets in many developing countries, has traditionally been based on cereals. Wheat, maize, and rice have been important components. Until recently, meat and dairy products were relatively minor components of total consumption.

Egyptian consumption levels rose very little between the mid-1930s and the early 1970s (Figure 1). Total per capita consumption hovered around 2,500 calories over this 30-year period. Consumption rose significantly after 1975, however, and reached 3,200 calories by the end of the 1980s. This dramatic increase in per capita calorie consumption was primarily the result of income growth, coupled with wide ranging food subsidies supported by rising food imports. The surge in real per capita income (8-9 percent) between 1973 and 1980 fueled a significant demand for dietary improvement, while the government made traditional staples available at declining real prices. This translated into a sharp increase in the country's dependence on food imports. Egypt was a net exporter of food until 1974, but by 1989 it was importing half its total food supply.<sup>2</sup>

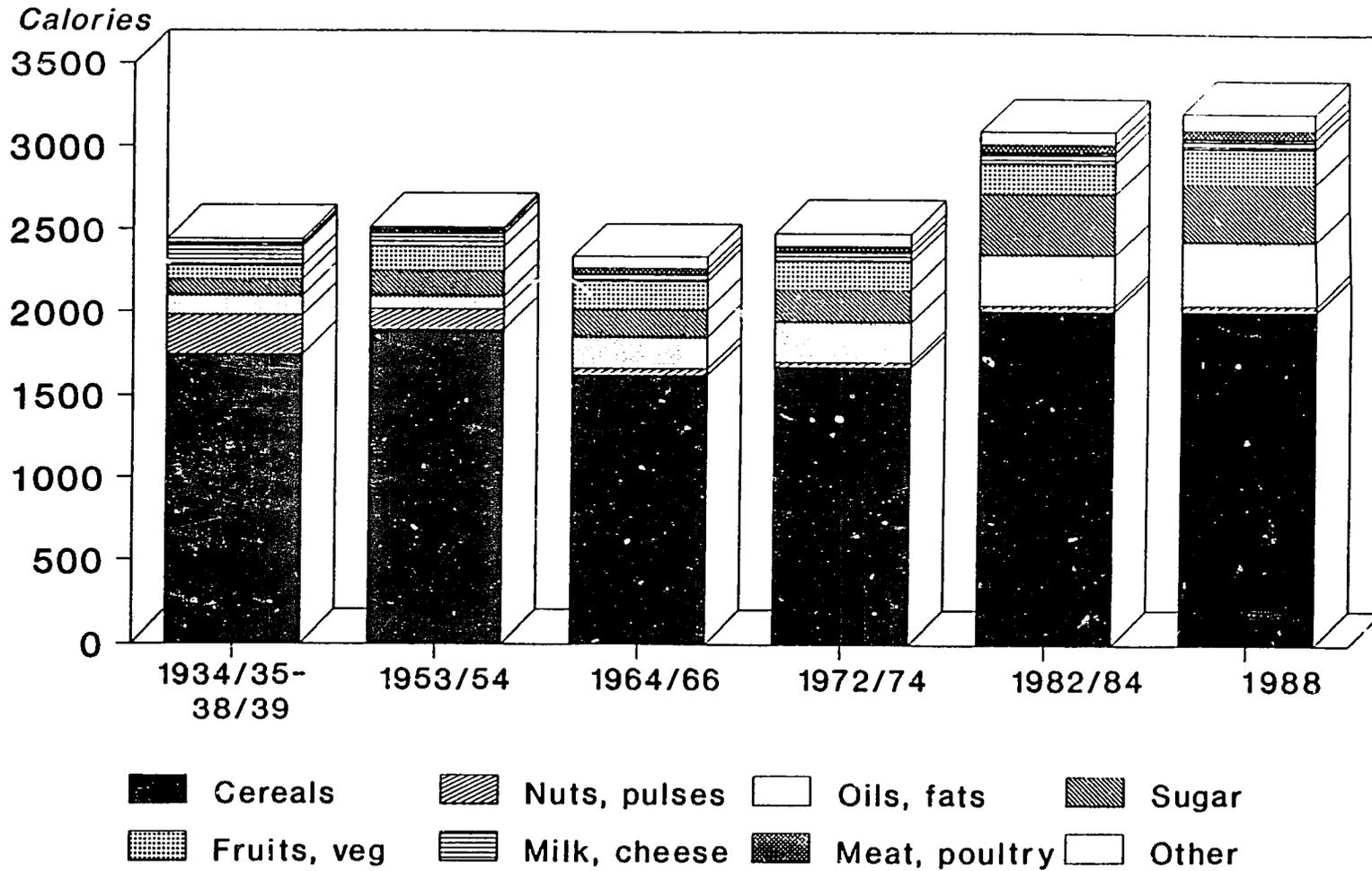
Egypt's rapid growth in food demand is typical of the Near East as a whole. Consumption grew more rapidly in the Near East than in any other region of the world (Figure 2) and by 1986, the Near East had the highest per capita consumption rates of any developing region.<sup>3</sup> Rapid income growth (especially in OPEC countries) fueled much of the increase in regional demand. In addition, most countries in the region had policies which subsidized food consumers--sometimes more extensive and less targeted than Egypt's extensive consumer subsidy program.<sup>4</sup>

The structure of the Egyptian diet has also changed during the last 15 years. Consumption of wheat and rice has increased. Fruits and vegetables have become more significant components of the diet, and animal protein consumption has increased somewhat. The Egyptian pattern for diet diversification in wheat and rice is consistent with Goldman's hypothesis that the consumption of the commodities peaks at a lower level of per capita income in the Asia/Near East region than elsewhere.<sup>5</sup> In the Egyptian case, this can be explained by two factors: the high portion of the traditional diet accounted for by wheat and rice (as opposed to coarse grains) and the operation of consumer subsidies. Heavy subsidies for starchy staples (most importantly bread and rice) kept the portion of the Egyptian diet derived from cereals high. A similar policy focus kept cereal consumption levels relatively high in other Near Eastern countries.<sup>6</sup> At the same time, implicit subsidies to livestock producers kept meat consumption lower than would be expected, despite some growth in import levels.

Goldman hypothesizes that consumption diversification reflects not only regularities associated with income growth, but also the tradeoffs among policy objectives.<sup>7</sup> Egypt's dietary diversification patterns support this hypothesis. The most rapid consumption increases occurred in products which had large consumer subsidies, lacked producer subsidies, and were readily available on the international market (e.g. wheat, vegetable oil). Here there were few

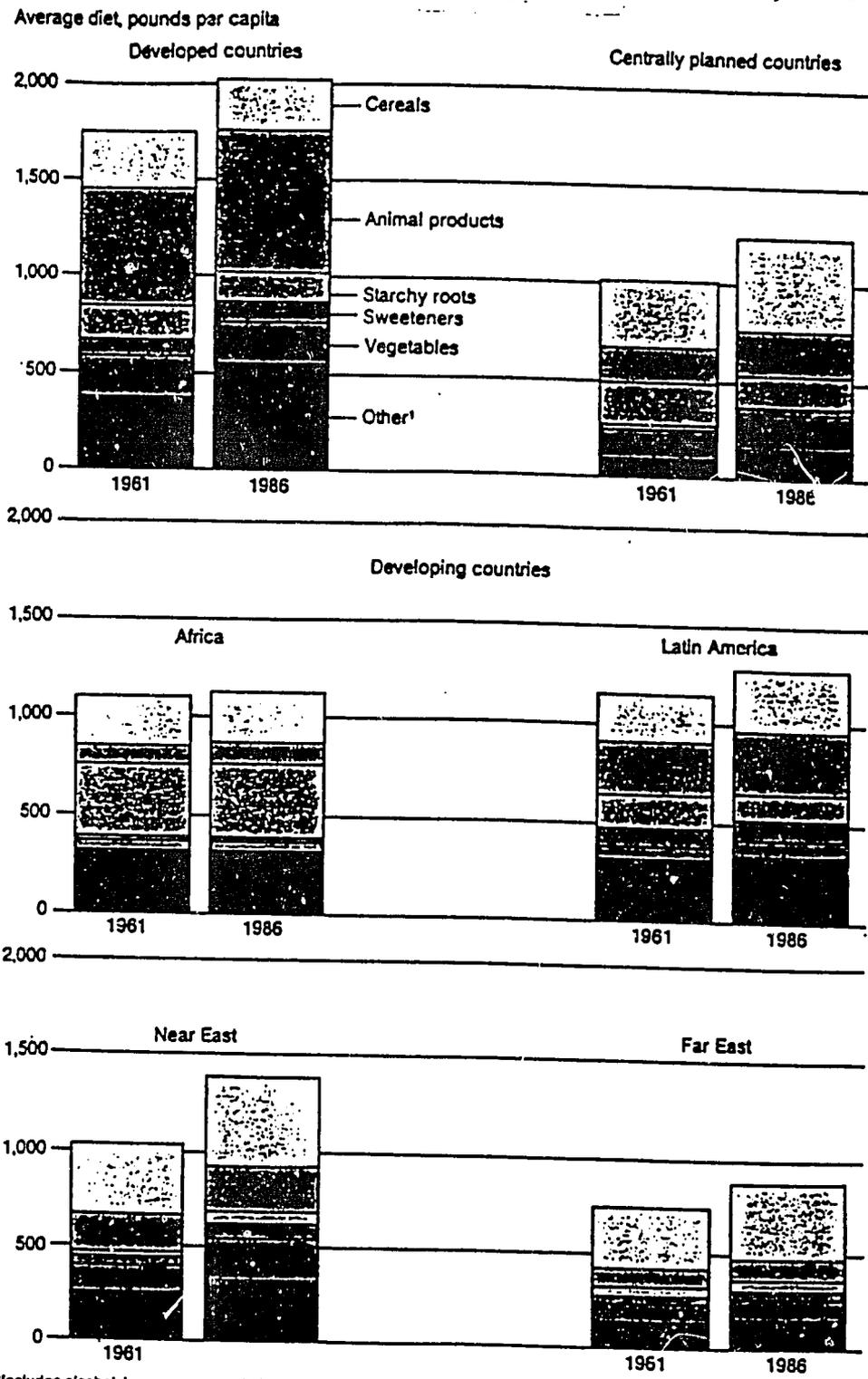
Figure I

# Egypt: Per Capita Daily Availability Of Calories



Source: FAO, Food Balance Sheets (Rome), various years.

Figure 2. Average Diet in Major Regions of the World, 1961 and 1986



Source: Overton (1990), page 10.

tradeoffs between producer and consumer interests. More modest increases occurred in commodities with lower consumer subsidy levels and higher implicit producer subsidies (meat, poultry) where producer and consumer interests had to be balanced or where increased domestic consumption threatened Egypt's status as a commodity exporter (rice, citrus, cotton).

Egypt currently has one of the highest levels of per capita wheat consumption in the world. Per capita consumption stands at over 155 kilograms per year (Table 1). This is, however, a relatively recent development, and one tied directly to Egyptian policy changes. Per capita wheat consumption stagnated from the mid-1960s to 1973 under the influence of policies designed to support domestic self-sufficiency in grains. Consumption increased dramatically between 1974 and 1985, a period characterized by the opening of Egypt's economy to commerce with the West.<sup>8</sup> Virtually all the increase in consumption was the result of a surge in imports, much provided concessionally by the United States and the EC. Imports reached 82 percent of total wheat consumption in 1984 (Table 2).

Wheat imports both displaced some human consumption of coarse grains and augmented total grain consumption. The use of corn for human food dropped dramatically as cheap wheat bread displaced more traditional corn bread (Figure 3). Yet, the decline in maize consumption was more than offset by growing wheat consumption, as total grain consumption increased from 278 kilograms to 315 kilograms between 1975 and 1985.<sup>9</sup>

Egyptian per capita rice consumption dropped significantly from a high of 36 kilos per capita in 1975 to 24 kilos per capita in 1989 (Table 3). Egypt was traditionally a rice exporter, and the attempt to remain so limited consumption growth. In rice, the Egyptian government faced a sharp tradeoff between domestic consumption and export generation. When rice exports reached their low in 1985, the Ministry of Supply favored rice imports to supply the domestic market. The Ministry of Agriculture strongly opposed imports and in this instance, the export-oriented perspective carried the day.

Egyptian consumption of vegetable oil increased tremendously over the period studied, from 8.8 kilograms per person in 1975 to 12.7 in 1988 (Table 1). Even before 1975, increases occurred as a result of the subsidy system. However, after 1975 consumption soared, as three potent forces converged to stimulate demand--income growth, the positive income elasticity of demand for cooking oil, and the easy availability of vegetable oil on the world market at attractive prices. The most rapid increases in consumption occurred for olive, sunflower, palm and palm kernel oil, and maize germ oil, all imported commodities. Consumption of cotton seed oil--produced in Egypt--showed much more modest growth (Appendix Table 1).

Egypt's per capita sugar consumption nearly doubled between 1974 and 1988. Sugar consumption growth reflects a slightly different balance among policy forces, however. On the one hand, sugar is a subsidized commodity, readily available on the world market. On the other, the Government of Egypt maintains a strong emphasis on increasing domestic production

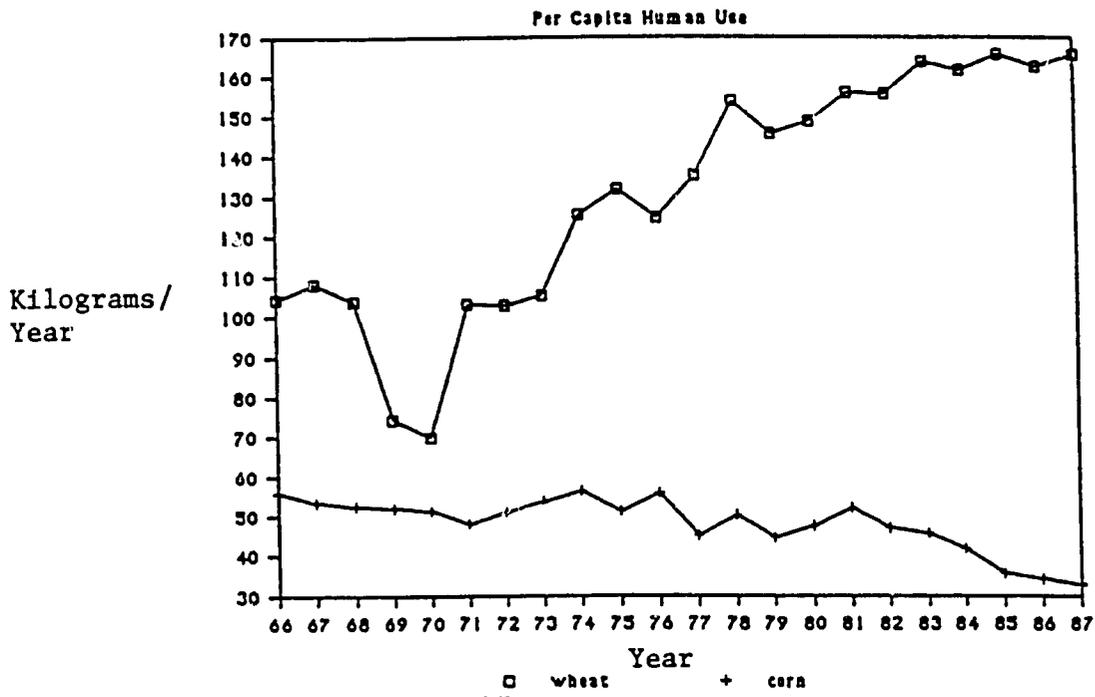
Table 1  
 Egyptian Per Capita Consumption of Major Food, 1966-89 and 1990 Estimate

Year	Wheat	Rice	Beef	Poultry	Lamb/M	Veg Oils	Sugar (Raw)
1966	90.07	21.14					
1967	105.52	29.70				1.71	16.65
1968	102.60	32.22				1.45	16.60
1969	74.32	24.33				2.41	16.54
1970	71.19	27.28				6.79	15.14
1971	102.71	29.75				9.00	13.28
1972	101.90	30.74				7.49	12.90
1973	105.44	30.24				8.45	16.66
1974	123.67	33.30				7.81	16.91
1975	130.44	35.83	6.41	3.30	1.11	9.11	17.12
1976	123.75	32.96	7.02	2.78	1.06	8.85	18.13
1977	132.24	30.04	7.94	2.90	1.19	10.18	20.83
1978	148.33	31.62	8.00	2.97	1.01	10.44	25.41
1979	140.43	33.36	8.46	3.54	1.17	9.13	24.73
1980	142.62	29.81	8.71	4.31	1.25	10.83	26.96
1981	149.19	28.30	9.08	5.54	1.12	10.94	26.56
1982	144.23	31.47	8.64	4.28	1.04	10.80	30.70
1983	151.64	31.17	9.50	6.20	1.03	9.66	31.87
1984	153.19	28.35	11.87	5.86	1.28	11.74	32.31
1985	155.58	28.62	12.76	5.58	1.30	13.59	32.66
1986	153.07	27.93	13.80	4.16	1.33	12.46	31.28
1987	148.51	26.29	13.42	4.14	1.10	11.32	32.26
1988	153.78	23.84		3.77	1.01	12.59	33.56
1989	154.61	25.08		3.83	1.02	12.71	33.27
1990	155.00	29.48				13.46	

Source: USDA/ERS.



Figure 3  
Egyptian Wheat and Corn Consumption



Source: USDA/ERS.

**Table 3**  
**Egypt: Rice Supply and Distribution by quantity and Value, Annual 1966-89-1990 Estimates**

Year	Area 1000 Ha	Production 000 MT (I-II)	Milled 000 MT (I-II)	Calc. Yield ton/ha	Reg. Stocks	End Stocks	Aid Imports	Total Imports	Exports	Total Avail. (1000 MT)	Feed Use	Seed Use	Waste	Non-Food	Consumption	Prod. Price Free (govt) Market LE/ton	Price Average Total	Free Mt Share %	Per cap. Consump. kg	
66	354	1,679	1,125	4.74	135	145	0	0	347	768	59	32	31	113	655	34	27	26.8	50	21.5
	451	2,277	1,527	5.05	145	159	0	9	434	1,098	68	35	44	147	941	31	31	30.8	50	30.1
	506	2,586	1,733	5.11	150	110	0	0	570	1,203	79	35	49	161	1,042	31	29	29.8	49	32.7
	501	2,556	1,713	5.10	110	100	0	0	772	951	77	34	38	148	802	31	31	31	49	24.6
70	480	2,604	1,745	5.43	100	120	0	0	654	1,071	78	33	43	154	916	27	29	28.4	56	27.6
	478	2,534	1,698	5.30	120	130	0	0	514	1,174	76	31	47	157	1,017	27	20	27.5	50	30.1
	481	2,507	1,680	5.21	130	135	0	5	456	1,524	75	29	49	153	1,070	27	27	26.8	57	31.0
	419	2,274	1,524	5.43	135	140	0	0	298	1,221	65	31	49	148	1,073	27	29	28.1	59	30.5
	442	2,242	1,502	5.07	140	159	0	11	136	1,358	67	31	54	153	1,206	34	38	36	51	33.5
75	442	2,424	1,624	5.48	159	195	0	0	104	1,488	73	32	60	164	1,324	40	40	40	52	36.0
	453	2,300	1,541	5.08	195	139	0	5	211	1,400	69	31	56	156	1,244	50	50	50	53	35.0
	437	2,272	1,522	5.20	139	120	6	4	223	1,313	68	39	53	151	1,162	50	60	56	54	30.1
	433	2,351	1,575	5.43	120	135	7	7	153	1,414	71	31	57	158	1,257	65	67	66	53	31.6
	436	2,510	1,682	5.76	135	175	10	11	123	1,570	75	29	61	155	1,365	65	67	65.9	40	33.4
89	408	2,384	1,597	5.84	175	180	0	7	184	1,415	72	28	57	156	1,259	75	88	81.3	49	29.9
	402	2,236	1,498	5.56	180	150	0	7	135	1,390	67	30	56	153	1,237	85	114	98.8	50	28.5
	431	2,438	1,633	5.66	169	190	5	8	25	1,586	73	33	63	166	1,420	95	166	170	52	31.8
	423	2,442	1,636	5.77	190	200	7	9	21	1,614	73	29	65	167	1,447	110	144	126	53	31.6
	412	2,350	1,561	5.65	209	200	2	3	52	1,512	70	27	60	158	1,354	105	158	130.6	56	29.7
85	389	2,312	1,549	5.94	200	180	4	7	16	1,560	60	32	62	154	1,406	125	272	211.5	54	28.8
86	454	2,445	1,638	5.39	189	200	2	45	92	1,571	50	40	70	160	1,411	175	298	236	54	28.0
87	420	2,406	1,611	5.73	200	130	2	15	126	1,520	45	40	70	155	1,365	209	378	266	52	26.5
88	342	2,132	1,413	6.23	189	121	7	26	108	1,390	25	33	60	118	1,272	220	500	310	33	23.9
89	412	2,600	1,742	6.31	121	350	4	12	32	1,493	25	39	55	119	1,374	285	600	430	40	25.3
90	422	2,850	1,776	6.28	350	250	5	10	100	1,786	25	44	60	129	1,657	400	800	600	40	29.7

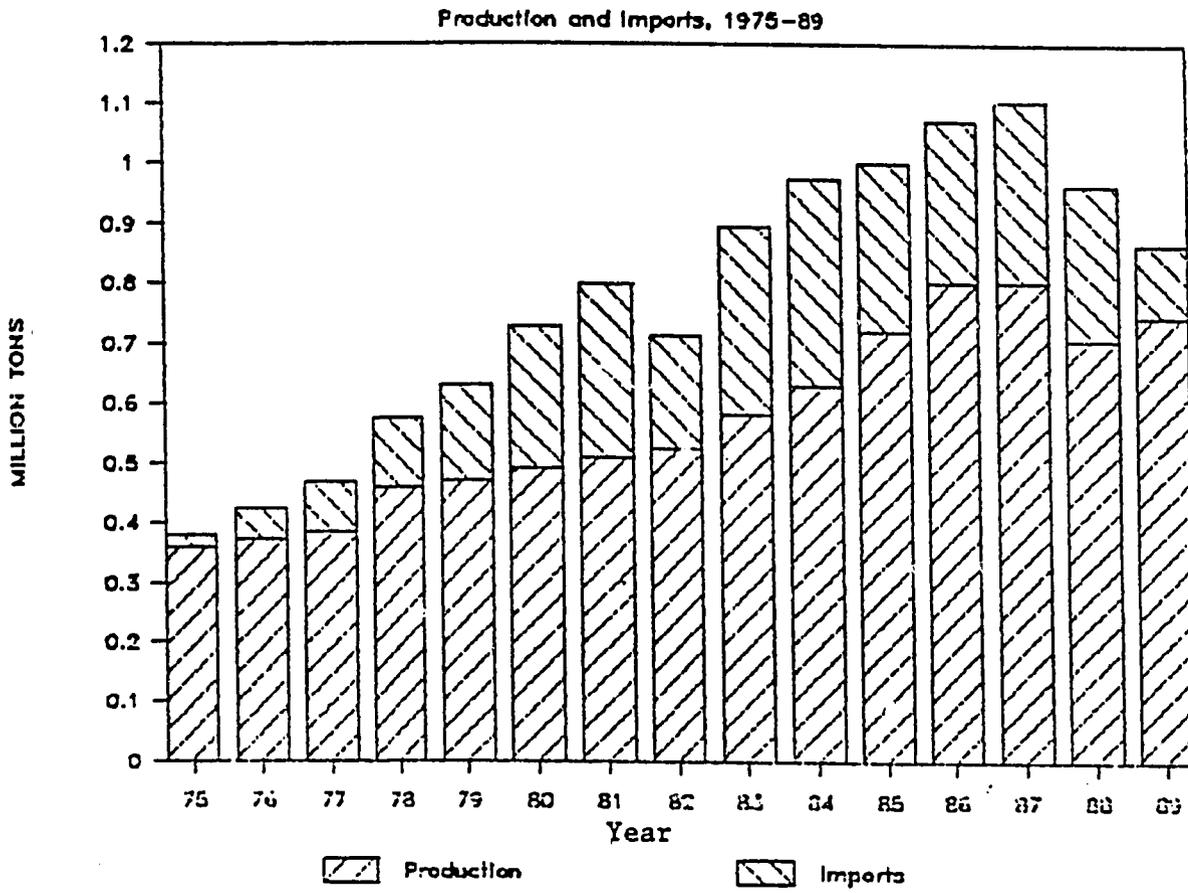
Sources: Ministry of Agriculture and Land Reclamation, Cairo and Agricultural Counselor reports

(at costs above the world market level). The result has been a complex policy which made heavily subsidized sugar available to consumers through the ration program, but priced additional sugar sales at prices which were often above world market prices.<sup>10</sup>

Meat consumption increased significantly between 1975 and 1987, although per capita consumption remained relatively low compared with other countries in the region (Figure 4). The bulk of the increase came from imports of beef and poultry (Figures 5 and 6). Even during the period of significant growth, there were restraints on consumption increases. The lack of refrigeration limited the potential for imports to increase consumption outside of major urban areas (e.g. Cairo and Alexandria). In addition, government policies operated from the mid 1970s to early 1980s to lower demand--e.g. limiting meat sales to selected days of the week. Per capita consumption of both beef and poultry declined sharply after 1987, as imports fell dramatically. The 1989 per capita poultry consumption is close to the 1982 level, while beef consumption is about what it was in 1984. Policy changes are responsible for the declines.

Increased domestic meat and poultry production is, in turn, reflected in a growing demand for feed. Wheat for feed use increased at about the same rate as wheat for food use, 5.3 percent over the 1975-88 period. Feed use of maize increased 6.3 percent, well above food use increases of 2.9 percent. Feed use of sugar beets also increased dramatically (Appendix Table 1).

Figure 4  
Egyptian Meat Supply



Source: USDA/ERS

# EGYPTIAN POULTRY MEAT SUPPLY

Production and Imports, 1975-89

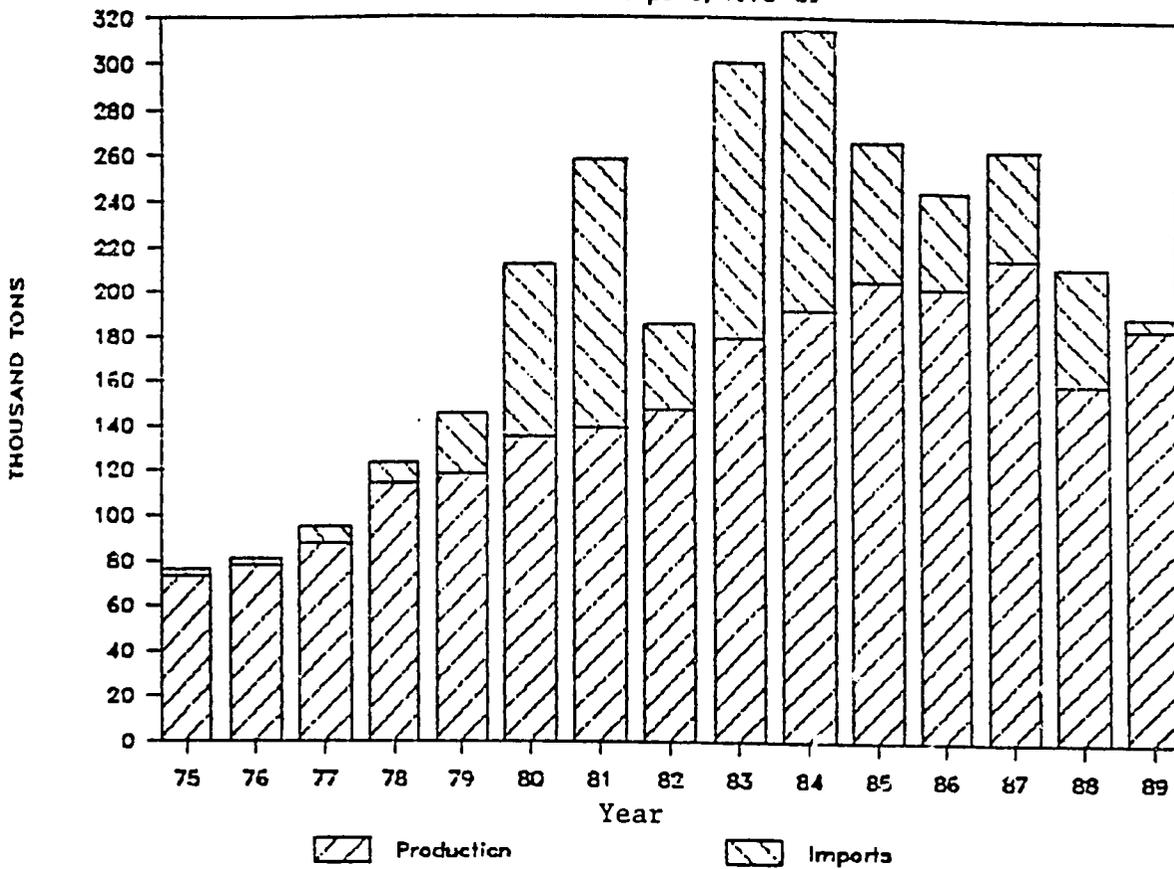
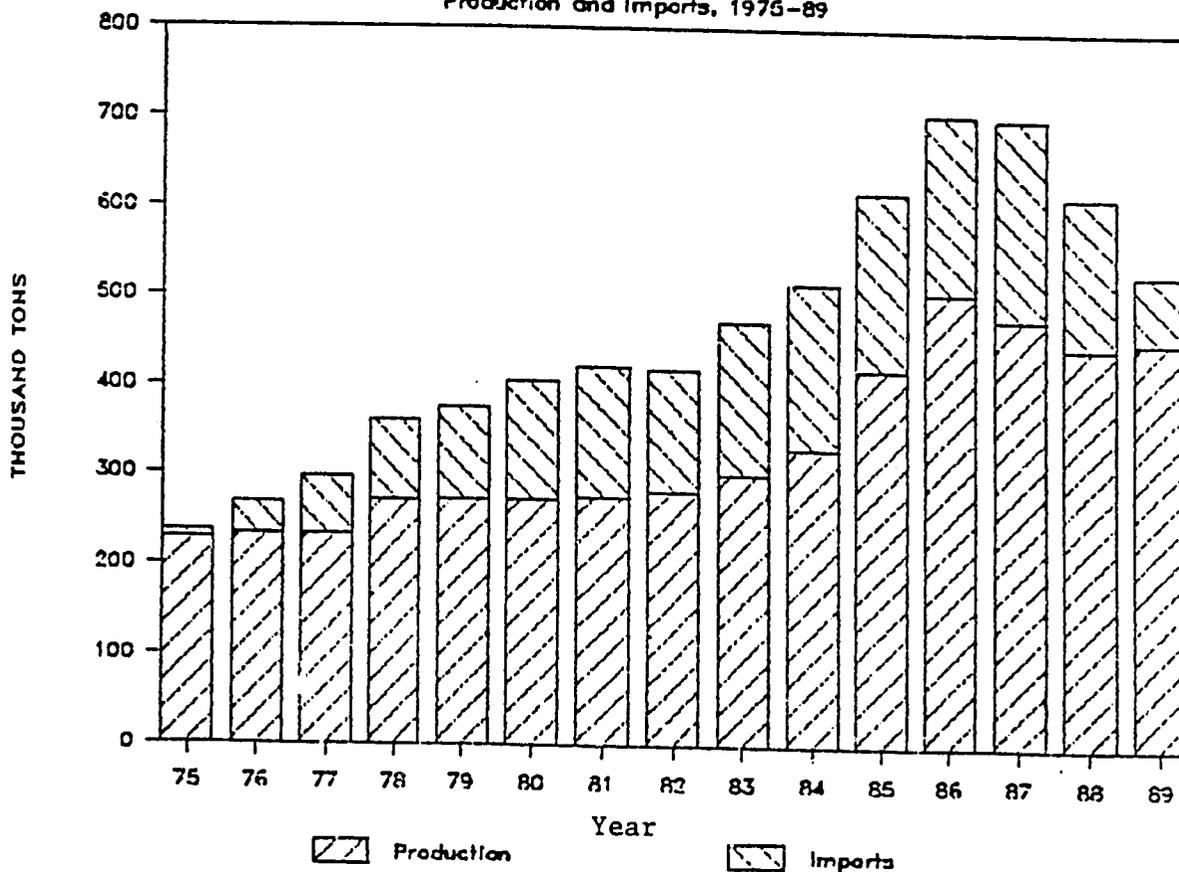


Figure 6

# EGYPTIAN BEEF SUPPLY

Production and Imports, 1975-89



### 3. THE FOOD RATIONING SYSTEM

Egypt's food subsidies are part of a comprehensive social welfare system created at the beginning of the Nasser era in 1952. After widespread land redistribution and business nationalization, the government instituted a set of policies to provide minimum living standards for all its population. For the most part, these remain in effect today, including rigid rent controls, subsidized food distribution, low cost clothing, free education and health care, and a range of public services provided at low cost. Policies designed to provide low cost food are only one component of a package of economic security policies, and have proved difficult to eliminate as long as the political commitment to the social security system remains strong.

Egypt's rationing system, administered by the Ministry of Supply, has provided the most direct vehicle for impacting Egyptian food consumption patterns. The system has covered a wide range of commodities, setting up different delivery systems for many of them. In recent years, there have been changes in the system, designed to limit the high cost of operating it, but the changes have generally been relatively incremental, a strategy developed to diffuse potential crises such as the one which accompanied the 1977 attempt to significantly increase the price of bread.<sup>11</sup>

#### Wheat

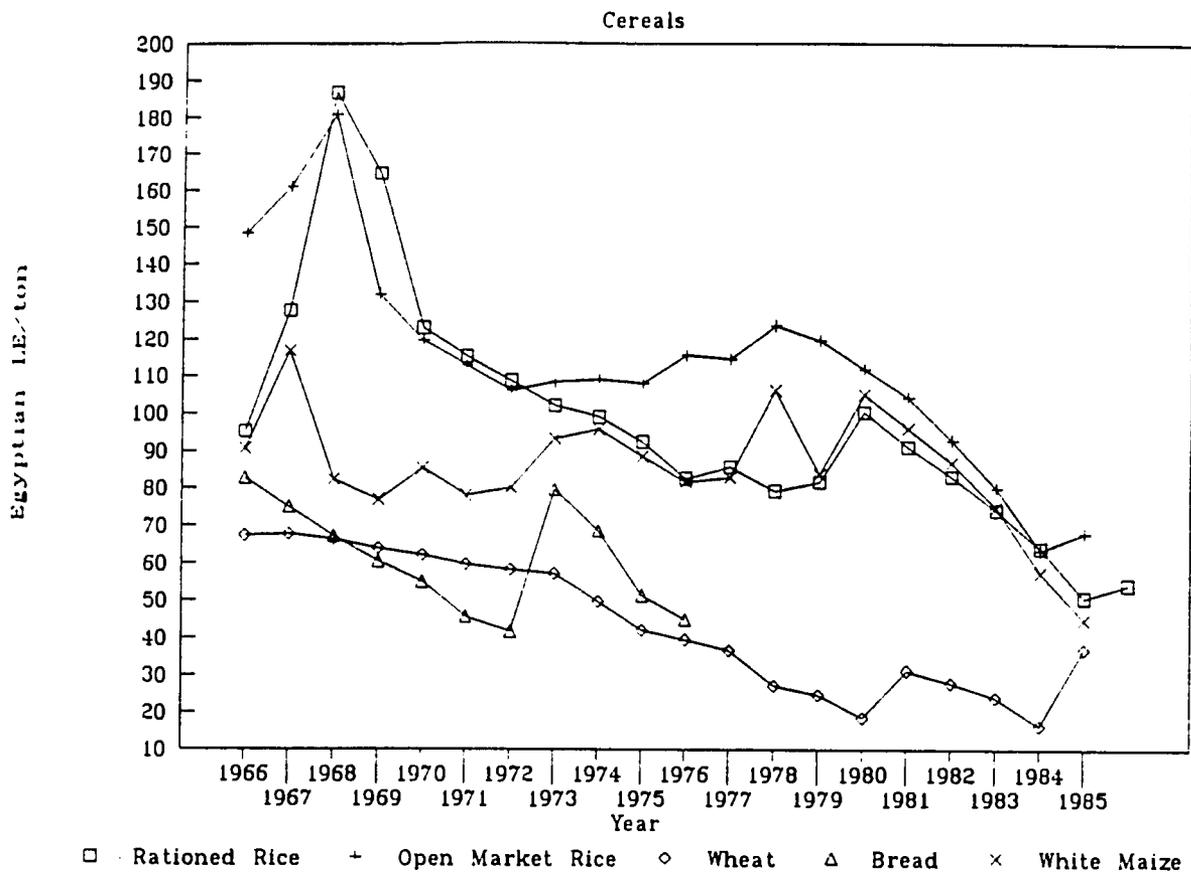
Wheat flour and bread are the mainstay of the consumer subsidy system. They have traditionally been available at extremely low cost to the entire population. There was no targeting program. The pervasiveness of the subsidy reportedly encouraged domestic waste, and gave Egypt one of the highest per capita wheat consumption levels in the world. It also made Egypt, with a population of 52 million, the world's third largest importer of wheat (after the USSR and PRC) in the early 1980s.

Throughout this period of rapidly rising consumption, real wheat prices declined significantly (Figure 7). The ratio of bread and cornmeal prices fell sharply, making the cost of subsidized bread about 40 percent the cost of cornmeal in the early 1980s (Table 4). The dramatic fall in the relative price of bread stimulated the decline in the human consumption of corn discussed previously.

The price of subsidized bread is a major political concern. The government announced a significant price increase in 1979 (in conjunction with price increases for other subsidized commodities). Serious rioting followed, and price increases were rescinded. Subsequent attempts to reduce bread prices have used an incremental approach based on producing smaller loaves of somewhat higher quality.

Figure 7

# Real Food Prices, 1965-85



Source: Dethier, 1989

Note: Deflated by Egyptian CPI, 1979 = 100

**Table 4**

**Relative Prices – Bread and Other Staples  
1975–85**

<b>Year</b>	<b>Bread/ White Maize</b>	<b>Bread/ Ration Rice</b>	<b>Bread/ Open Rice</b>	<b>Bread/ Wheat Flour</b>	<b>Bread/ Beans</b>	<b>Bread/ Ration Lentils</b>
1975	0.93	1.00	0.76	1.00	1.07	0.56
1976	0.92	0.87	0.65	0.81	1.07	0.56
1977	0.81	0.85	0.59	0.81	1.07	0.56
1978	0.57	0.74	0.49	0.81	0.59	0.56
1979	0.65	0.55	0.46	0.81	0.59	0.56
1980	0.43	0.50	0.41		0.55	0.50
1981	0.43	0.50	0.40	0.70	0.55	0.50
1982	0.91	1.07	0.86	1.61	1.18	1.07
1983	0.91	1.07	0.86	1.67		
1984	0.89	1.01	0.81	1.12		0.40
1985	1.00	0.83	0.66		1.17	0.45

Source: USDA Attache Reports (bread prices) and Dethier

The Government has made periodic adjustments in both the price of bread and the size of the loaf provided (Table 5). Prices were adjusted in 1982 by introducing a smaller, somewhat higher quality and more expensive loaf, and gradually phasing out the old loaf. In May 1986, in an attempt to reduce the heavy cost of the wheat flour and bread subsidy program, the price of subsidized wheat flour was increased from 10 piasters (4.5 US cents) per kilogram to 20 piasters (9 US cents). The government also introduced a higher quality, more costly loaf of bread, while gradually reducing the availability of the lower cost (2 piaster) bread and focusing deliveries on poorer neighborhoods, thereby achieving a de facto targeting. In 1989 the 2 piaster loaf was eliminated entirely. The price of bread per kilogram tripled.

Previous analyses of demand patterns were unable to estimate price elasticities for subsidized products, due to the lack of variability in official government prices.<sup>12</sup> The studies concluded that while there was probably some price responsiveness, it was likely to be low. The direct impact of recent price increases on wheat consumption is, therefore, hard to estimate. The opportunity for substitution away from bread into other commodities appears limited. The IFPRI study identified several commodities as substitutes for bread, including beans, lentils, and rice.<sup>13</sup> As Table 4 indicates, however, bread is still considerably cheaper than beans, lentils, and rice (both rationed and open market). Declines in aggregate food consumption, especially among poorer consumers, appear likely.

There is some evidence that the structure of demand for wheat products has changed to include increased per capita consumption of specialty wheat products (such as pastries, cookies, cakes, pies, and macaroni).<sup>14</sup>

### **Other Rationed Commodities**

Sugar, tea, cooking oil, rice, beans, and lentils are part of a widely available ration system using ration books available to up to 90 percent of the population.<sup>15</sup> These commodities have been provided in fixed quantities at a low subsidized price through cooperatives administered by the Ministry of Supply. Additional quantities may be produced at higher but still subsidized prices at the cooperatives, subject to availability. As the comprehensive IFPRI study demonstrated, the availability of rationed commodities, and the waiting time for obtaining them, have been important in determining their use by different income groups.<sup>16</sup> Nevertheless, most eligible families utilized the ration system to some extent.

The ration system has not officially changed, although availability of commodities under it, and the degree of subsidization provided, have changed incrementally. Subsidies on sugar and rice have been reduced sharply, while those on pulses (beans and lentils) have been eliminated.<sup>17</sup> Real prices for these commodities had been stable for most of the 1960-80 period (Figure 8).

**Table 5**  
**Egypt: Trend in Consumer Bread Prices, Annual 1975-90**

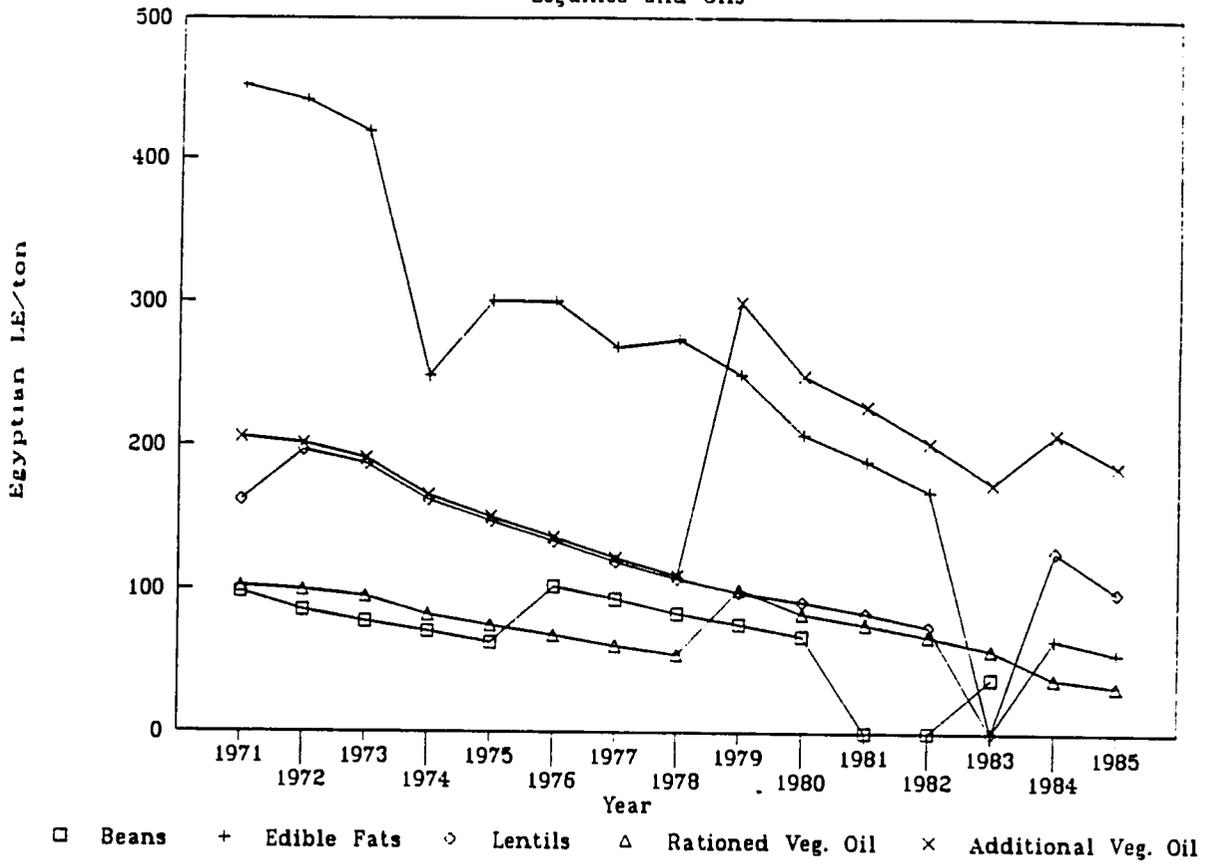
Year	Price per loaf	Average Loaf Size	Loaves per kg	Price per kg	U.S.cents per kg	Open Mark Exchange
	piasters	grams	number	piasters		
1975	1	182	5.5	5.5	7.75	0.71
1976	1	182	5.5	5.5	7.43	0.74
1977	1	182	5.5	5.5	7.64	0.72
1978	1	182	5.5	5.5	7.64	0.72
1979	1	182	5.5	5.5	7.33	0.75
1980	1	182	5.5	5.5	7.24	0.76
1981	1	182	5.5	5.5	6.25	0.88
1982	2	169	5.9	11.8	11.35	1.04
1983	2	169	5.9	11.8	10.63	1.11
1984	2	169	5.9	11.8	9.83	1.2
1985	2	169	5.9	11.8	8.43	1.4
1986	2	165	6.06	12.1	6.76	1.79
1987	2	165	6.06	12.1	5.50	2.2
1988	2	165	6.06	12.1	5.24	2.31
1989	5	135	7.4	37	14.29	2.59
1990	5	135	7.4	37	13.86	2.67

SOURCES: Ministry of Supply and Home Trade, Cairo, FAS and ERS estimates.  
NOT OFFICIAL USDA DATA

Figure 8

### Real Food Prices, 1971-85

Legumes and Oils



Source: Dethier, 1989

Note: Deflated by Egyptian CPI, 1979 = 100

Frozen meat, fish and poultry were also subsidized, albeit at only one price level. Both the meat and poultry subsidies depended heavily on low cost imports of frozen beef and frozen poultry. Since 1988, imports of frozen poultry have been banned, effectively eliminating the ration program for poultry. In 1989 the price of rationed beef was increased substantially.

Empirical analysis of the magnitude and evolution of consumer subsidies found that they increased significantly after 1972, coinciding with the sharp increase in overall consumption. The only exception is sugar, where consumer taxes declined after 1972, but persisted throughout the period (Table 6).

How important were subsidized prices in shaping the demand for commodities covered by the ration system? None of the studies reviewed answered this question directly. There are, however, some suggestive findings. Alderman and von Braun found that while the income elasticity for bread was generally low (or even negative), the higher price elasticity suggested that consumers would readily substitute it for other commodities when the price fell. It seems likely, then, that the sharp declines in real bread and flour prices--not income growth--accounted for much of the consumption increase. On the other hand, some rationed commodities such as sugar and rice were price inelastic, but had positive income elasticities. Here it seems more likely that income effects drove demand. Frozen meat--the commodity provided by the ration shops--was an inferior good for all but the lowest income urban households. Fresh meat was a superior good, but highly responsive to price. Again it seems likely that the lower price was responsible for consumption expansion. On the other hand, frozen poultry had a slightly higher income elasticity than fresh poultry, as well as a significant price elasticity. Clearly, providing subsidized frozen poultry provided a significant stimulus to an income-driven demand.<sup>18</sup>

While not part of the formal food subsidy system, other commodities, including fruits and vegetables, have sometimes been subject to retail price controls, although not to producer price controls. According to Alderman and von Braun's elasticity estimates, fruit was a superior good for urban consumers, and vegetables had a higher income elasticity than poultry.<sup>19</sup> Income growth clearly fueled the expansion in fruit and vegetable consumption, which was all provided from domestic production. Rising demand stimulated farmers to shift from controlled crops to more lucrative fruits and vegetable production (Table 7). In 1985 retail prices for fruits and vegetables were decontrolled, leading to significant increases in local prices, and an increase in some high valued exports such as citrus.

The impact of recent policy changes and price increases has been reflected in very substantial price increases for food in general, and many subsidized products in particular. The most recent data on prices and annual price increases is presented in Table 8.

Table 6  
Average Rates of Nominal Protection for Consumers, Egypt

Period I	Period II	Period III
1960-72	1973-79	1980-85

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DIRECT INTERVENTIONS.

Cotton	-26%	-50%	-32%
Rice	-16%	-54%	-55%
Wheat	- 1%	-54%	-69%
Maize	17%	- 1%	-23%
Sugar	91%	39%	43%

TOTAL INTERVENTIONS.

Cotton	-50%	-63%	-55%
Rice	-38%	-65%	-70%
Wheat	-32%	-63%	-81%
Maize	-12%	-22%	-46%
Sugar	32%	1%	12%

\*\*Period I data for rice and maize is from 1965-72.

SOURCES: Tables 3-2 and 3-5. Dethier (1989)

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Egypt: Index of Agricultural Production, Annual 1977-88

Commodity	Price Weight	1977	1978	1979	1980	1981	1982	--1000 MT--							
								1983	1984	1985	1986	1987	1988	1989	1990
		-dollars-													
Wheat	137	1697	1933	1856	1796	1938	2917	1996	1815	1874	1927	2722	2839	3183	4000
Rice, paddy	146	2272	2351	2510	2384	2236	2438	2442	2336	2312	2445	2495	2132	2600	2610
Barley	151	111	132	122	107	103	121	120	144	145	152	137	109	170	170
Sorghum	155	648	656	635	643	653	596	622	540	551	606	552	570	599	600
Corn	155	2724	3117	2938	3230	3232	3347	3507	3698	3699	3619	4088	4287	4524	4600
Broad beans	292	270	231	236	213	208	260	295	305	302	448	499	362	406	400
Lentils	429	24	16	9	7	5	6	6	10	13	15	18	17	19	21
Soybeans	393	27	79	106	92	130	166	162	143	140	133	134	130	94	125
Cotton	1374	399	438	484	530	499	461	419	399	435	401	351	306	293	320
Cottonseed	137	690	736	792	844	786	738	674	680	698	647	561	487	440	530
Peanuts	561	30	33	33	32	24	20	21	23	21	21	23	27	32	34
Tomatoes	172	1967	2198	2421	2468	2454	2657	2862	2993	3576	4456	4921	4212	3997	4400
Sweetpotato	80	68	63	104	86	86	125	115	112	130	132	111	63	67	68
Potatoes	183	1010	772	1019	1214	1195	1105	1095	1250	1478	1400	1673	1725	1657	1840
Onions	66	723	599	560	611	654	631	619	643	653	877	897	1009	1040	1100
Cabbage	57	340	348	360	353	374	389	384	374	392	414	431	452	450	465
Vegetables†	195	3421	3850	4059	3995	3941	3549	3567	3669	3790	4103	4398	4370	4350	4380
Lemons	268	46	58	64	72	64	111	115	117	120	122	121	122	125	127
Oranges	172	671	834	1050	921	895	1201	1263	1182	1168	1234	1387	1400	1357	1425
Sugar, raw	216	668	635	638	662	711	725	780	740	767	887	909	955	949	975
Grapes	228	248	274	242	299	298	306	344	357	395	435	510	540	621	710
Tangerines	92	76	85	98	70	78	118	120	104	106	108	109	110	112	120
Dates	199	461	377	406	446	391	440	470	474	509	528	491	542	560	570
Other fruit	214	549	547	556	579	587	603	677	626	632	660	715	729	740	770
Meats	2660	436	436	446	472	493	510	521	558	588	646	697	594	633	696
Milk	327	1780	1801	1830	1865	1982	2013	2080	2235	2341	2400	2630	2660	2680	2700
Eggs	980	79	81	83	93	105	109	111	112	118	146	152	142	143	145
Wool	2287	4	4	4	4	4	5	5	5	5	5	5	5	5	5
Aggregates of Production															

21

Percent Change

Change from previous year	4.64	5.17	3.60	0.41	1.69	1.59	2.99	5.70	7.09	6.18	-6.35	2.51	5.51
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Sources. CAPMAS, Ministry of Agriculture and Land Reclamation, Agr. Counselor, Cairo and ERS estimates

Beef								338	339	345		368	361	360	350
Mutton & goat								58	61	60		64	57	58	55
Lamb								1	1	1		1	1	1	1
Camel								21	20	21		26	21	22	20
Pork								3	3	3		3	3	3	3
Red Meat total								421	424	430		462	443	444	429
Poultry								192	205	202		216	135	170	250
Rabbit								13	13	14		19	16	19	17
Total meat								626	642	646		697	594	633	696
Eggs								112	118	146		142	144	143	145

Table 8  
Representative Retail Food Prices, Egypt 1/

Item	Price	% Change
Bread (Pita-style 165 gm)	.05	150
Rice (Rationed)	.40	8
Rice (Non-rationed)	1.20	200
Pasta (Public sector)	.60	20
Pasta (Private sector)	1.80	20
Meat (Frozen, Govt Coops)	5.50	120
Meat (Fresh, Private Shops)	6.50	0
Beef (Private Shops)	12.00	20
Chicken (Frozen, Govt Coops)	3.80	19
Chicken (Frozen, Private Shops)	5.50	28
Chicken (Live)	5.50	0
Milk (Powdered)	.88	46
Milk (Fresh)	1.40	17
Cheese (White, Govt Coops)	3.75	50
Cheese (Feta, Private Shops)	3.90	18
Cheese (Greek, Imported)	13.50	55
Cheese (Cheddar, Imported)	9.00	38
Butter (Unsalted, Imported)	6.00	56
Butter Oil (Canned)	7.25	56
Vegetable Oil (Rationed)	.31	27
Vegetable Oil (Non-rationed, Coops)	1.80	125
Vegetable Oil (Non-rationed, Shops)	2.65	231
Oranges (Medium quality)	.72	16
Tomatoes	1.50	275
Potatoes	.45	80
Onions	.65	225
Garlic	2.00	300
Beans (Fava)	1.20	50
Lentils	2.80	124
Sugar (Rationed)	.35	74
Sugar (Non-rationed)	1.00	43
Cigarettes (Domestic)	1.00	10
Cigarettes (Foreign Brands)	2.50	28
Cloth	1.10	10
Washing Soap	.68	0
Detergent	2.00	0

Source: FAS, Agricultural Situation Report, 1990

1 All prices are unofficial and were recorded during December, 1989, in Egyptian pounds (L.E. 2.58 = \$1.00 as of February, 1990) per kilogram unless noted otherwise. Percent change in prices measured between from January to December, 1989.

#### 4. SECTORAL AND MACROPOLICIES

Egyptian agricultural policy has two broad objectives: to provide an adequate supply of staples to the entire population, and to seek self-sufficiency in strategic crops (other than wheat).<sup>20</sup> As the previous analysis demonstrates, until recently the first objective clearly dominated the second. The Egyptian government has traditionally intervened heavily in the agricultural sector. The instruments for policy intervention are summarized briefly below.<sup>21</sup>

- **Marketing Boards**

Until the 1987 policy reforms, the Council of Ministers and the Ministry of Agriculture and Land Reclamation directly or indirectly fixed the prices for cereals, industrial crops, and oilseeds. Producers of regulated commodities generally had to deliver some (their quota) or all of their crop to government marketing institutions. Free markets determined the farmgate prices of vegetables, fruits, fish, clover, meats, eggs, and dairy products.

- **Input Supply**

To help sustain low procurement prices for controlled crops, the Ministry of Agriculture and Land Reclamation and the Ministry of Irrigation, as well as the Principal Bank for Agricultural Development (PBDAC) subsidizes selected farm inputs, including improved seeds, fertilizer, pesticides, irrigation water, machinery, credit, and electricity.

- **Exchange Rate**

Egypt has maintained a complex system of multiple exchange rates (reduced from 7 to 3 by the 1987 reforms), which has resulted in the persistent overvaluation of the Egyptian pound. Different exchange rates were applied to different categories of inputs, with the most overvalued exchange rate applied to the import of essential goods, such as food.

- **Trade Policy**

The Ministry of Supply and Home Trade has a monopoly of the import of wheat, and until recently, on the import of corn. All rationed commodities except rice were imported by the General Authority for Supply Commodities (GSAC), acting as the international purchasing agent for the Ministry of Supply.

There have also been periodic bans on imports of agricultural commodities, including a range of high-valued products set by the Import Rationalization Committee in the early 1980s and the total ban on poultry imports in 1988.

As Table 9 demonstrates, the effect of price and exchange rate policy controls was to significantly tax producers of cotton, maize, and rice, while supporting sugarcane producers.<sup>22</sup> Subsidized pesticides and fertilizer did not compensate for the effects of low procurement prices.

More recent attempts to analyze the impact of policy interventions have focused on calculating the producer subsidy equivalent (PSE) of these policies--in essence, the worth of the combined collection of policies to the producer. The findings of this analysis suggest that while there was substantial taxation of cotton and rice producers, there was only modest taxation of wheat producer... Corn producers received a modest production subsidy, while sugarcane producers received a very substantial production subsidy (Table 10).

The PSE analysis, like earlier work, finds that price controls, trade restrictions and an overvalued exchange rate taxed producers. It accounts more completely, however, for the range of services provided to producers--including free irrigation water, improved seed, and credit. With these elements included, the analysis found that cotton and rice production were the most heavily taxed over the 1982-87 period. Wheat was moderately taxed. Corn was moderately subsidized, and sugar was heavily subsidized (Table 10).

No quantitative estimates of producer subsidies in livestock products has been produced. However, IFPRI's research indicates that prior to 1984, livestock producers were subsidized, primarily through the substantial feed subsidies (Table 11).<sup>23</sup> The removal of the feed subsidy, coupled with significant de facto restrictions on corn imports has undoubtedly reversed this pattern over the past two years.

Since 1987, a variety of policy changes have been put in place in the agricultural sector. Most appear to have had an indirect effect on consumption, with the exception of policy changes regarding subsidized feed which appear to have contributed (in 1988) to a significant decline in per capita meat and poultry availability.

Quotas and fixed price procurement were eliminated for 10 agricultural crops--wheat, beans, lentils, winter onions, garlic, potatoes, sesame, groundnuts, corn, and soybeans. A recent survey found that farmers were aware of the policy changes, and responded positively for most of the crops.<sup>24</sup>

A series of policy changes have also been undertaken to increase wheat production. Land reclamation has accelerated. Reclaimed land previously held by the Government has been sold to private farmers at auction (with a limit of 312 acres per buyer). The result has been a significant increase in wheat production on these lands by relatively large farmers. Increased mechanization and fertilizer use has increased yields.<sup>25</sup> The positive production effects of these policies have provided a viable alternative to small farmer delivery quotas. Farmgate prices of wheat increased significantly (Table 2). The increase in wheat production reduced Egypt's wheat import dependence slightly, from a high of 82 percent in 1985 to 71 percent in 1989.

Table 9  
Average Rates of Protection for Producers, Egypt

NRP	Period I		Period II		Period III	
	1964-72		1973-79		1980-85	
	ERP	NRP	ERP	NRP	ERP	
-----						
DIRECT INTERVENTIONS						
Cotton	-31%	-59%	-48%	-120%	-30%	-50%
Rice	-47%	-54%	-64%	-58%	-39%	-46%
Wheat	-2%	-6%	-27%	-22%	-33%	-38%
Maize	-7%	-12%	-12%	-3%	-10%	-3%
Sugar	--	--	245%	--	--	--
TOTAL INTERVENTIONS						
Cotton	-51%	-57%	-62%	-65%	-54%	-56%
Rice	-64%	-69%	-74%	-78%	-65%	-70%
Wheat	-27%	-35%	-42%	-44%	-55%	-63%
Maize	-30%	-35%	-28%	-24%	-36%	-36%
Sugar	--	--	-26%	-12%	2%	66%

Data for sugarcane not available when border prices are negative.

SOURCE: Table 3-9. (Dethier 1989)

Table 10  
Egyptian Policy Transfers and PSE'S by Commodity

ITEM:	UNIT	1982	1983	1984	1985	1986	1987	AVG.
<b>WHEAT:</b>								
Policy Transfers:								
Marketing Board	MIL LE	- 7	- 2	- 3	0	6	- 1	- 1
Fertilizer	MIL LE	27	29	26	27	29	41	30
Improved Seed	MIL LE	33	36	39	46	52	82	48
Pesticide	MIL LE	0	0	0	0	3	4	1
Credit	MIL LE	2	2	2	3	5	6	3
Irrigation	MIL LE	9	11	10	12	13	14	12
Trade Control	MIL LE	-51	- 19	5	58	95	310	66
Exchange Rate (quota)	MIL LE	- 3	- 2	- 9	- 9	-16	- 21	-10
Exchange Rate (non-quota)	MIL LE	-21	- 55	-84	-146	-219	-105	-105
PSE	Percent	- 6	.3	- 7	- 3	- 10	4	- 4
<b>COTTON:</b>								
Policy Transfers:								
Marketing Board	MIL LE	-48	-37	-83	-56	-34	- 9	- 45
Fertilizer	MIL LE	28	26	26	29	26	24	27
Improved Seed	MIL LE	7	8	8	9	11	14	10
Pesticide	MIL LE	74	65	66	80	89	83	76
Credit	MIL LE	8	8	8	8	12	10	9
Irrigation	MIL LE	7	8	8	11	11	10	9
Exchange Rate	MIL LE	-87	-97	-225	-405	-407	-403	-271
PSE	Percent	- 2	- 4	- 39	-47	- 44	- 28	-27
<b>CORN:</b>								
Policy Transfers:								
Fertilizer	MIL LE	41	51	55	58	63	72	57
Improved Seed	MIL LE	26	36	36	35	29	36	33
Pesticide	MIL LE	0	0	0	9	6	7	4
Credit	MIL LE	3	3	3	5	7	8	5
Irrigation	MIL LE	13	14	17	19	20	17	17
PSE	Percent	20	18	17	16	20	16	18
<b>SUGARCANE:</b>								
Policy Transfers:								
Marketing Board	MIL LE	64	84	147	167	204	224	148
Fertilizer	MIL LE	17	21	22	24	29	29	24
Improved Seed	MIL LE	23	28	33	36	39	39	33
Credit	MIL LE	0	0	0	1	1	1	.5
Irrigation	MIL LE	2	2	2	2	3	2	2
Exchange Rate	MIL LE	- 7	-18	-12	-36	-93	-147	-52
PSE	Percent	99	119	193	194	182	148	156
<b>RICE:</b>								
Policy Transfers:								
Marketing Board	MIL LE	-25	1	6	20	19	1	4
Fertilizer	MIL LE	15	15	15	14	17	17	16
Improved Seed	MIL LE	79	64	66	62	71	71	69
Pesticide	MIL LE	0	0	0	3	8	9	3
Credit	MIL LE	2	2	2	2	4	4	3
Irrigation	MIL LE	7	8	8	9	11	10	9
Trade Control (non-quota)	MIL LE	-62	-44	-68	-223	-197	-119	-119
Exchange Rate (quota)	MIL LE	-14	-37	-62	-73	-194	-288	-111
Exchange Rate (non-quota)	MIL LE	-15	-40	-63	-100	-224	-435	-146
PSE	Percent	15	46	29	-113	-65	-84	-29
AGGREGATE PSE	Percent	25	36	39	9	17	11	23

Table 11  
 Components of the Total Welfare Losses by Producers, Egypt 1965-80  
 (in percentage of total loss)

Year	Wheat	Maize	Rice	Beans & Lentils	Meat Milk & Feed	Sugar	Cotton
1965	6.1	11.2	18.0	3.7	-1.2	6.0	55.7
1966	6.9	12.9	20.9	5.6	-1.9	-.1	55.5
1967	8.7	11.4	33.6	1.8	-9.8	-3.9	58.0
1968	3.6	10.6	34.0	2.3	2.7	-3.4	50.2
1969	3.1	8.3	24.3	2.5	2.5	1.4	57.6
1970	5.0	12.0	17.0	2.4	-3.8	3.4	63.7
1971	5.4	7.8	14.5	2.1	2.9	-2.6	69.7
1972	4.7	8.9	13.2	2.6	4.3	.3	65.5
1973	10.8	11.3	17.4	5.4	2.7	8.3	44.0
1974	7.2	7.7	35.1	1.3	-7.2	16.7	39.0
1975	7.8	8.8	40.6	1.6	-10.4	11.7	39.6
1976	10.0	11.4	35.2	2.6	-23.0	7.0	56.4
1977	4.3	2.0	19.7	3.1	-25.0	.6	95.0
1978	7.1	6.2	43.6	1.9	-58.0	-5.3	104.2
1979	18.0	20.2	40.0	3.4	-54.1	-1.9	74.2
1980	19.3	4.1	37.4	2.5	-73.0	24.2	85.4

SOURCE: Von Braun and de Haen (1983), table 28.

NOTE: Rows add up approximately to 100, which equals the total welfare loss of the agricultural sector.

In 1987 the Government decided not to increase the nominal value of farm input subsidies, including credit. This decision resulted in a small increase over 1986 nominal subsidy levels (350 million LE, 2 percent higher than in 1986), but a significant (24 percent) decline in real subsidy values.<sup>26</sup> The aggregate figures mask significant differences among input subsidies, however. Increases in the nominal subsidies for fertilizer, credit and pest control benefitted crop producers. Sharp decreases in feed subsidies offset this, leaving the aggregate nominal subsidy rates relatively constant. Real subsidy reduction was, therefore, concentrated in the livestock and poultry industry.

From 1986-88, feed subsidies were reduced by 128 million LE, 67 million for animal feed subsidies and 61 million for poultry feed.<sup>27</sup> Poultry subsidies declined another 26 million LE between 1988 and 1989.<sup>28</sup> Most of the subsidy decline was associated with the elimination of subsidies on yellow corn in 1987 and price increases for cottonseed meal.

Some liberalization in the trade regime has also occurred. In 1987 private imports of corn were permitted, although it has been difficult for private importers to establish a firm hold in the market for a variety of reasons.

Private sector importers have made greater gains in meat. The share of meat imports handled by the private sector increased significantly from approximately 15 percent in 1975 to over 80 percent in 1987. Imports dropped significantly, however, in 1988, apparently because of import restrictions.<sup>29</sup> In addition, the government monopoly on feedlots for government procurement (e.g. Ministry of Defense) has been reduced, although not significantly.

In late 1986 the government removed restrictions on the private export of citrus, with oranges the most significant citrus crop. Since 1987 the private sector has been encouraged to export citrus, although the public sector company (El Wadi) still dominates exports. Citrus exports increased in 1988, despite a 20 percent decline in production. Private sector exports increased slightly more rapidly than public sector exports.<sup>30</sup> Consumer prices rose significantly.

## 5. POLICY IMPACTS ON DEMAND

While it is clear that government policies have significantly affected consumption patterns, it is necessary to look more carefully at the extent to which policies have contributed to the effective management of demand. There is widespread agreement that the ration system was, for a number of years, an effective instrument for supplying low income people with adequate diets. Through the mid-1980s Egypt had the lowest levels of malnutrition of any country in its per capita income category.<sup>31</sup> Neither the ration system, nor the associated complex of sectoral and macro policies, was effective in "managing" the demand transformations associated with income growth. The impacts of recent reforms illustrate just how difficult it is to manage demand in a country where agricultural marketing, trade and processing are increasingly important components of the overall agricultural economy. The impacts also illustrate the increasingly complex tradeoffs between domestic consumption and foreign exchange management which characterize the recent reform period. These themes will be illustrated by analyzing the impact of recent policy changes on the demand for three key commodities: feed, meat, and cotton textiles.

### Feed

In 1987 the Egyptian Government ended the Ministry of Supply's monopoly on corn imports. It also planned to eliminate the subsidy on feed, which covered over half the price of imported corn purchased by feedlot operators. The policy reforms were designed to increase efficiency, stimulate competition, and support the Government's attempt to increase domestic corn production. Institutional weaknesses, the timing of the reforms, and subsequent trade bans made it difficult to achieve these objectives simultaneously, however.

Private importers found it difficult to deal effectively with Egyptian institutions, primarily those involved in issuing letters of credit. They also lacked experience in international feed markets, and found it difficult to develop effective marketing practices. During the same period the public sector held back on imports (until after the scheduled price increase government supplied corn scheduled for June 1988). As a result, Egyptian corn imports fell from 2.25 million metric tons in 1987 to 1.5 million tons in 1988 (Table 12). By June, the price of government supplied corn was 220 Egyptian pounds, compared with 60 a year earlier.<sup>32</sup>

By the summer of 1988, the poultry and meat industries were devastated, and consumer prices for these commodities soared. (See discussion in the next section.) Corn prices on the open market soared, as did the price of meat and poultry. Despite price increases and scarcities, however, there was no government intervention to maintain domestic meat consumption--through either price controls or imports. There was a clear tradeoff between the grain and livestock sector (resolved in favor of grains), as well as between domestic consumption and foreign exchange conservation (resolved in favor of foreign exchange considerations). At the same time, the official producer price of corn was doubled between 1987 and 1989 to stimulate increased production. (Table 12) Production increased significantly (from 3.6 million tons in 1987 to 4.5

million in 1989). Domestic use rebounded, despite much higher prices, and imports stabilized at a significantly lower level.

## **Meat**

The shortage of corn in mid 1988 devastated the Egyptian poultry industry. During August 1988 about 80 percent of the commercial broiler operations near Alexandria closed down because of the shortage of imported feed.<sup>33</sup> Domestic poultry production declined by 19 percent, while the overall output of livestock products fell 10 percent. Consumer prices for beef rose to 14 Egyptian pounds per kilo, poultry to 4 pounds per kilo.

Egypt has generally been regarded as a high cost producer of meat.<sup>34</sup> More realistic domestic feed prices, combined with increased inputs, might have permitted agricultural resources to be reallocated to producing other commodities in which Egypt would have a comparative advantage. This did not occur, however. Poultry imports were banned, and beef imports curtailed. As the analysis in Section II demonstrated, per capita meat consumption dropped, and remains depressed. In this protected environment, domestic production recovered somewhat, and the higher feed costs were passed on to consumers.

## **Cotton textiles**

Cotton policy has generally been dominated by the twin objectives of maintaining low clothing prices (part of the social security program) and maintaining export earnings. These objectives increasingly came into conflict as cotton production stagnated. The Egyptian Government has to date been unwilling to liberalize cotton production and marketing or to significantly increase domestic textile prices. Nevertheless, there has been a de facto change in policy. Since 1987, Egypt has imported significant quantities of cheaper low-staple cotton, much of it from the United States. This cotton is used both to produce low-cost (but lower quality) textiles for the domestic market, and to support a recent increase in textile exports.<sup>35</sup> Efforts are underway to increase production of higher value, extra-long, staple cotton for export.

In this instance, neither foreign exchange nor domestic consumption objectives were sacrificed. The "give" came from a shift away from self-sufficiency in cotton toward an economically more rational policy of self-reliance. This policy shift also permitted the continued taxation and heavy regulation of cotton producers.

Despite their ability to produce partial successes, piecemeal reforms leave significant gaps, particularly for middle-income countries such as Egypt where agricultural growth increasingly depends on effective performance beyond the farmgate. As the feed example illustrates, removing specific trade restrictions is often not enough to induce improved market performance. Wider macroeconomic and institutional changes are often required. In the Egyptian case, some of these have been made, although again in a piecemeal fashion. Egyptian banks have begun programs to provide credit to private corn importers and to facilitate their effective operation.

Table 12  
Egypt: Corn Supply and Distribution, Annual 1966-90

Year	Area 1000 ha	FAO	ERS	Calc. Yield ton/ha	Beg. Stocks	End Stocks	Aid Imports	Total Imports	Exports	Total Avail. 1000 MT	Feed Use	Seed Use	Waste	Non- Food	Consump- tion	Prod. Price (govt) local/ton	Indices Popula- tion 1,000	Growth Rate (%)	Per cap. Consump. kg
		Prod. 000 MT (T-1)	Prod. 000 MT (T-1)																
66	662	2,376	2,376	3.59	925	900		167	1	2,567	525	57	254	836	1,731	22,380	30,508	---	56.7
	628	2,167	2,167	3.45	900	950		202	1	2,318	430	59	237	726	1,592	27,800	31,222	2.31	51.0
	655	2,300	2,300	3.51	950	1,100		133		2,283	450	56	243	750	1,533	28,929	31,903	2.16	48.1
	626	2,368	2,368	3.78	1,100	1,200		52		2,320	449	57	242	748	1,572	32,714	32,560	2.04	48.3
70	633	2,397	2,397	3.79	1,200	1,300		73	0	2,370	472	50	247	777	1,593	33,500	33,197	1.94	48.0
	639	2,344	2,342	3.57	1,300	1,400		41	0	2,283	470	58	238	766	1,517	33,429	33,840	1.92	44.8
	646	2,421	2,421	3.75	1,400	1,500		94	0	2,415	440	63	252	754	1,661	36,786	34,496	1.92	48.1
	696	2,508	2,508	3.60	1,500	1,677		180	0	2,511	458	66	269	793	1,718	45,071	35,179	1.96	48.8
	735	2,641	2,641	3.59	1,677	1,721		465	0	3,062	679	69	311	1,059	2,003	50,786	35,937	2.13	55.7
75	769	2,781	2,782	3.62	1,721	1,595		511	0	3,419	983	71	329	1,384	2,035	50,821	36,769	2.29	55.4
	794	3,047	3,047	3.84	1,595	1,517		644	0	3,769	1,150	67	369	1,586	2,183	50,250	37,674	2.43	58.0
	741	2,725	2,724	3.68	1,781	1,452	377	591	0	3,644	1,200	76	332	1,607	2,037	61,535	38,654	2.57	52.7
	839	3,117	3,117	3.72	1,452	1,567	482	808	0	3,810	1,300	72	393	1,765	2,045	70,591	39,713	2.70	51.5
	803	2,936	2,930	3.65	1,567	1,452	266	494	0	3,547	1,450	72	343	1,865	1,682	74,070	40,891	2.92	41.1
80	802	3,231	3,231	4.03	1,452	1,567	320	988	0	4,104	1,387	72	422	1,881	2,223	122,900	42,135	3.00	52.8
	801	3,309	3,308	4.13	1,743	1,205	476	1,384	0	5,230	2,700	73	469	3,242	1,988	93,790	43,365	2.88	45.8
	815	3,347	3,347	4.12	1,205	877	350	1,297	0	4,972	3,100	68	464	3,632	1,340	124,900	44,600	2.81	30.0
	756	3,509	3,509	4.64	877	600	538	1,600	0	5,466	4,000	75	400	4,475	991	167,600	45,851	2.77	21.6
	829	3,170	3,698	4.46	600	300	345	1,723	0	5,721	4,200	72	542	4,814	907	172,800	47,765	2.73	19.0
85	804	3,982	3,699	4.60	300	200	320	1,912	0	5,711	4,300	58	561	4,919	792	209,300	49,133	2.69	16.1
86	643	3,801	2,910	4.54	200	100	480	2,140	0	5,158	4,100	80	540	4,720	438	219,000	50,525	2.69	8.7
87	789		3,619	4.59	100	50	450	2,250	0	5,919	4,800	80	550	5,430	489	254,650	51,930	2.62	9.4
88	925		4,287	5.20	50	30	400	1,491	0	5,798	4,600	99	500	5,199	599	445,000	53,244		11.3
89	643		4,524	5.37	30	40	700	1,600	0	6,114	4,950	120	530	5,500	614	530,000	54,350		11.3
90	850		4,600	5.41	40	45	650	1,900	0	6,495	5,250	125	560	5,935	560	528,000	55,700		10.1

Sources: CAPAS, FAO, FAS and EKS estimates

In addition, partial liberalization accompanied by countervailing restrictions distorts both supply and demand patterns. Protecting domestic livestock producers encourages the allocation of resources toward an activity in which Egypt almost certainly lacks any comparative advantage. It prevents more significant shifts in cropping patterns (in particular the reduction of acreage devoted to fodder). It also curtails the dietary transition by making foods such as meat less available than they would be in a more liberal trade environment.

Finally, partial liberalization does not necessarily support the development of more effective domestic markets for the liberalized commodity. Despite significant increases in corn production, commercial poultry producers still find imported corn a more reliable source of feed. Given the protection in place for poultry, farmers find it attractive to retain feed on their farms and use it to support small-scale poultry production rather than to participate more fully in national corn markets. The high corn price, in conjunction with high poultry and livestock prices, has also significantly expanded the feed use of wheat (Table 2 ).

## 6. CONCLUSIONS

Egypt provides a fascinating look at both the impact of demand management regimes and the difficulties involved in adapting them to changing conditions. The interaction among Egypt's ration system (originally designed to provide a consumption floor), high income growth, and a permissive import policy led to extraordinary changes in the country's demand pattern between the mid-1970s and mid-1980s. It provides an almost classic example of an import-intensive demand management system. The interaction of untargetted consumer subsidies for the key elements of the traditional diet (especially bread) led to an expanding demand for these staples (which have a very low income elasticity of demand) at the same time that rapid income growth provided the impetus for increased consumption of more preferred commodities such as meat, fruits, and vegetables. The result was an "overlay" of new consumption on a traditional diet, rather than the dietary "transition" from starchy staples to more preferred foods which is more characteristic of economic development.

Egypt's demand management regime has begun to change. While Egypt has postponed structural adjustment longer than many other developing countries, reduced growth and a deteriorating external balance have put increasing pressure on its consumption-oriented demand management regime. Even without a formal structural adjustment program, changes in the demand management regime are evident. The devaluation of the Egyptian pound, coupled with a partial reform of the multiple exchange rate system, induced changes in the macroeconomic policy which contributed most extensively to the subsidization of consumers and the maintenance of an import oriented demand management regime. Agricultural sectoral liberalization has been reflected in higher consumer prices in open markets, and piecemeal adjustments to the ration system.

In short, partial reforms in sectoral and macroeconomic policies affect consumption patterns, but without creating the capacity to "manage" demand. It remains to be seen whether more comprehensive economic reforms will emerge as an alternative to this pattern for change.

## ENDNOTES

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3. C.E. Overton, "Trends in World Food Consumption" in National Food Review 13:2 (April-June 1990), pages 6-12.
4. For a discussion of both policy regimes and trade patterns in OPEC countries during the period of rapid income growth, see James Coyle et al., Food Import Demand of Eight OPEC Countries, FAER #182 (Washington D.C.: Economic Research Service, USDA), 1983.
5. Goldman, op. cit., pages 11-12.
6. Ibid.
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8. For a discussion of the general components of this policy shift, see Khalid Ikram, Egypt: Economic Management in a Period of Transition (Washington, D.C.: World Bank), 1980, pages 25-28.
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10. Dethier, op. cit., pages 207-8.
11. Harold Alderman, Joachim von Braun, Sakr Ahmed Sakr, Egypt's Food Subsidy and Rationing System: A Description, Research Report #34 (Washington, D.C.: IFPRI), October 1982 provides a comprehensive description of the system as it operated before the policy changes introduced in the late 1980s.
12. Harold Alderman and Joachim von Braun, The Effects of the Egyptian Ration and Subsidy System on Income Distribution and Consumption, Research Report #45 (Washington D.C.: IFPRI), July, 1984, pages 78-79.
13. Ibid., page 79. Positive cross elasticities define substitutes. In several cases, balady flour cross elasticities were used as a proxy for bread cross elasticities. Elasticities were for rural areas.
14. USDA, ERS, Market Fundamentals, Egyptian Wheat, April 1989.
15. Alderman and Braun, op. cit., page 16.
16. Ibid., pages 13-90.

17. John Parker, Market Fundamentals: Egyptian Wheat, (Washington, D.C.: USDA/ERS), April 1986.
18. Elasticity estimates are found in Alderman and von Braun, op. cit., pages 73-80.
19. Ibid.
20. A detailed description of Egyptian agricultural policy is beyond the scope of this paper. For a good analysis of this subject, see Dethier, op. cit.
21. The discussion of these instruments follows USDA/ERS, "Government Intervention in Egyptian Agriculture" (mimeo), August 1990.
22. Negative nominal protection rates indicate that producers are being taxed. Negative effective protection rates indicate that producers are being taxed even when the value of subsidized inputs are considered.
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24. Youssef Wally, "Conference on Agricultural Policy Reform in Egypt: Current Status and Future Strategy," June 24-25, 1989 (Cairo, Egypt), page 13.
25. Parker, op. cit.
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28. Egypt, Ministry of Agriculture and Land Reclamation, Undersecretariat for Economics and Statistics, "Confirmation and Evaluation of Tranche 3 Benchmarks for Agricultural Production and Credit Project," July 1989, page 9.
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31. IFPRI, Dethier.
32. USDA/ERS, Market Fundamentals: Egyptian Coarse Grains, April 1989.
33. ERS, op. cit.
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## **APPENDIX**

# Egypt, Consumption Growth Rates

	Cereals ex. beer	Wheat	Rice (husked equ	Barley ex. beer	Maize	Millet	Cereals, other	Starchy roots	Potatoes	Swt pot. & yams
1961-74										
Feed	2.3%	3.6%		-2.5%	2.9%	1.8%				
Seed	-0.6%	-0.2%	2.2%	-3.9%	-4.2%	3.2%		4.1%	4.1%	
Waste	3.3%	4.9%	2.7%	-6.1%	2.2%	1.4%		4.2%	5.0%	-1.5%
Processed	3.5%			3.7%	3.4%					
Food	2.8%	3.1%	3.0%	-13.5%	2.5%	1.2%		4.8%	6.4%	-1.5%
Oth. uses	15.6%		21.8%		7.5%					
1975-88										
Feed	4.6%	5.3%		1.9%	6.3%	-2.3%	3.1%			
Seed	1.3%	0.6%	2.2%	2.6%	0.7%	0.6%		4.5%	4.6%	
Waste	3.3%	4.0%	21.8%	-1.3%	3.9%	-2.3%		5.0%	5.3%	1.5%
Processed	2.4%			2.5%	2.5%					
Food	4.1%	5.3%	2.1%	5.5%	2.9%	-2.0%		5.2%	5.7%	1.9%
Oth. uses	-10.6%		-33.6%		2.0%			35.4%	35.4%	
1961-88										
Feed	4.8%	5.0%		1.0%	7.7%	-0.7%	11.5%			
Seed	1.4%	0.4%	4.4%	0.5%	-0.7%	0.8%		3.8%	3.8%	
Waste	3.5%	4.5%	-33.6%	-2.8%	3.9%	-1.6%		5.3%	5.7%	0.5%
Processed	2.3%			3.4%	2.2%					
Food	3.6%	4.7%	2.6%	-5.7%	2.6%	-2.5%		5.9%	6.7%	0.4%
Oth. uses	1.0%		-2.2%		3.7%			19.5%	19.5%	

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1981

Egypt, Consumption Growth Rates

	Roots, other	Sugar crops	Sugar cane	Sugar beets	Sweeteners	Pulses	Beans	Peas	Pulses, other	Treenuts
1961-74										
Feed						0.6%			0.6%	
Seed	3.5%	3.3%	3.3%			-1.8%	10.5%		-2.1%	
Waste	4.3%	4.8%	4.8%			-0.0%	20.7%		-0.6%	
Processed		3.8%	3.8%		-16.6%					
Food	5.1%	9.0%	9.0%		4.6%	1.5%	12.5%	14.2%	1.1%	-4.6%
Oth. uses					-16.6%					
1975-88										
Feed		16.7%		16.7%		1.3%			1.3%	
Seed	1.8%	1.0%	1.0%			3.0%	-0.3%	-3.1%	3.1%	
Waste	3.3%	2.1%	2.1%			2.4%	-6.0%		3.2%	-3.1%
Processed		2.7%	1.8%	27.4%	-12.3%					
Food	3.4%	1.5%	1.5%		6.5%	3.5%	5.0%	0.9%	3.3%	4.0%
Oth. uses					-12.3%					
1961-88										
Feed		14.9%		14.9%		-0.0%			-0.0%	
Seed	3.7%	1.2%	1.2%			0.3%	3.9%	10.0%	0.1%	
Waste	5.6%	1.3%	1.3%			0.8%	6.8%		0.2%	10.0%
Processed		3.4%	3.1%	17.6%	-8.4%					
Food	5.9%	2.9%	2.9%		6.2%	1.5%	8.5%	4.7%	0.9%	4.1%
Oth. uses					-8.4%					

A-2

Egypt, Consumption Growth Rates

	Oilcrops	Soyabeans	Groundnuts Shld	Sunflowerseed	Cottonseed	Sesameseed	Olives	Oilcrops, other	Vegetable oils	Soyabean oil
1961-74										
Feed										
Seed	3.5%		0.0%		3.5%			4.5%		
Waste	0.3%		0.0%		0.3%	0.0%		0.7%		
Processed	1.6%			38.6%	1.6%			4.2%		
Food	-1.4%	35.1%	-8.2%		-7.3%	3.2%	-2.0%		6.5%	8.9%
Oth. uses	7.7%							7.7%	0.5%	
1975-88										
Feed										
Seed	-10.4%		15.4%		-10.8%			-4.7%		
Waste	-1.6%		-21.5%		-3.2%	0.0%	33.8%	4.2%		
Processed	-0.2%	16.0%		4.4%	-3.0%			5.5%		
Food	3.9%	2.0%	2.3%		-0.4%	-2.4%	16.5%	25.0%	6.2%	4.7%
Oth. uses	-2.0%							-1.8%	2.6%	
1961-88										
Feed										
Seed	-0.4%		-6.3%		-0.5%			2.1%		
Waste	0.2%		-5.4%		-0.7%	0.0%	19.2%	3.5%		
Processed	1.6%	14.7%		10.7%	0.4%			5.1%		
Food	1.9%	10.8%	-3.2%		6.2%	-0.7%	4.9%	17.0%	6.2%	5.4%
Oth. uses	4.5%							4.6%	5.2%	

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# Egypt, Consumption Growth Rates

	Sunflower oil	Rape/must oil	Cottonseed oil	Palm kernel oil	Palm oil	Copra oil	Olive oil	Maize germ oil	Veg oils, other	Vegetables
1961-74										
Feed										
Seed										
Waste										3.0%
Processed										
Food	17.4%		5.3%			3.4%	-7.2%		-3.1%	3.3%
Oth. uses		3.1%	5.5%		-2.4%				-0.2%	
1975-88										
Feed										19.5%
Seed										
Waste										4.8%
Processed										
Food	15.1%		2.2%	23.8%	26.3%	4.1%	14.5%	24.9%	24.0%	5.0%
Oth. uses		18.2%	0.9%		-14.9%				9.2%	
1961-88										
Feed										15.6%
Seed										
Waste										3.8%
Processed										
Food	11.1%		4.6%	16.6%	17.3%	-1.1%	6.3%	16.9%	15.7%	4.1%
Oth. uses		10.5%	6.4%		1.1%				6.1%	

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Egypt, Consumption Growth Rates

	Tomatoes	Onions	Vegetables, other	Fruit ex. wine	Oranges, etc.	Lemons & limes	Grapefruit	Citrus, other	Bananas	Apples ex cider
1961-74										
Feed										
Seed										
Waste	4.6%	-0.6%	3.0%	3.3%		2.2%			5.1%	-2.5%
Processed				3.6%						
Food	4.6%	0.2%	3.2%	2.8%	8.7%	2.7%			5.6%	-0.2%
Oth. uses					6.5%					
1975-88										
Feed			19.5%							
Seed										
Waste	7.7%	0.3%	2.7%	3.7%		11.9%			7.9%	4.0%
Processed				1.7%						
Food	7.8%	1.0%	2.7%	4.1%	4.6%	11.8%	13.8%	-1.8%	7.8%	5.3%
Oth. uses				18.9%	5.7%					
1961-88										
Feed			15.6%							
Seed										
Waste	5.7%	0.5%	2.8%	3.3%		4.7%			5.6%	6.7%
Processed				-3.2%						
Food	5.8%	1.9%	3.0%	3.3%	5.0%	4.7%	14.2%	10.3%	5.8%	7.8%
Oth. uses				15.4%	5.0%					

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Egypt, Consumption Growth Rates

	Dates	Grapes ex. wine	Fruits, other	Stimulants	Spices	Alcoholic bev.	Meat	Meat, bovine	Meat sheep/goat	Pigmeat
1961-74										
Feed										
Seed										
Waste	-1.3%	5.0%	2.0%		6.0%					
Processed		3.6%								
Food	-0.5%	5.1%	2.0%	-4.2%	1.7%	2.1%	2.3%	2.6%	2.2%	4.6%
Oth. uses						-8.4%	8.9%			
1975-88										
Feed										
Seed										
Waste	2.3%	6.2%	2.2%		3.3%					
Processed		1.7%								
Food	2.6%	6.2%	2.4%	7.8%	3.5%	3.0%	5.8%	6.4%	2.3%	3.7%
Oth. uses			18.9%			9.2%	12.5%	26.5%	13.0%	
1961-88										
Feed										
Seed										
Waste	1.0%	6.4%	2.3%		4.2%					
Processed		-3.2%								
Food	1.2%	6.7%	2.4%	3.8%	2.5%	3.6%	4.2%	4.5%	1.2%	5.2%
Oth. uses			15.4%			1.0%	7.2%	17.3%	14.0%	

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# Egypt, Consumption Growth Rates

	Poultry meat	Meat, other	Offals	Animal fats	Milk ex. butter	Eggs	Fish, seafood
1961-74							
Feed					7.2%		22.5%
Seed						3.7%	
Waste					4.1%	5.3%	
Processed					1.6%		
Food	1.9%	1.9%	4.2%	3.9%	3.1%	4.6%	-1.1%
Oth. uses		8.9%		3.8%	33.8%		
1975-88							
Feed					1.5%		14.2%
Seed						6.8%	
Waste					2.7%	6.7%	
Processed					1.0%		
Food	5.0%	7.4%	6.1%	5.0%	3.5%	6.9%	4.4%
Oth. uses		11.4%		1.1%	17.2%		
1961-88							
Feed					3.6%		13.6%
Seed						4.8%	
Waste					2.9%	5.4%	
Processed					1.2%		
Food	4.7%	3.6%	4.7%	5.2%	3.8%	5.4%	4.0%
Oth. uses		6.8%		6.1%	13.4%		

Source: FAO