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**AGRICULTURAL DEVELOPMENT SYSTEMS
EGYPT PROJECT**

UNIVERSITY OF CALIFORNIA, DAVIS

FOOD CONSUMPTION AND DISTRIBUTION: AN OVERVIEW

by

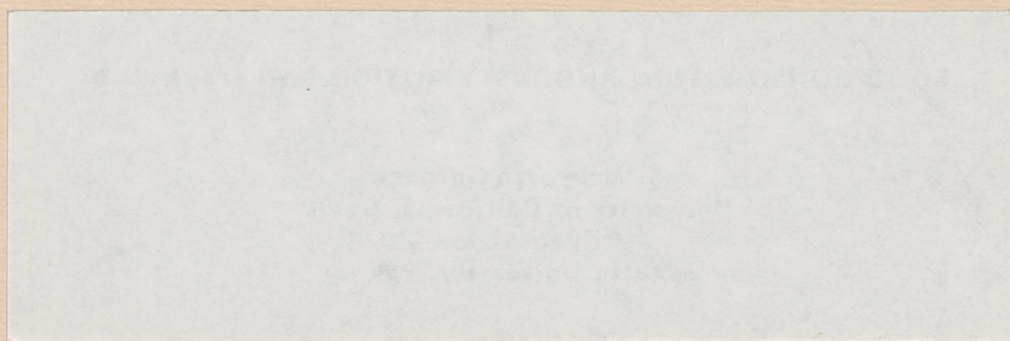
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Assistance from the Agricultural Development Systems Project of the University of California, Egyptian Ministry of Agriculture, and USAID, is gratefully acknowledged, but the author is solely responsible for the views expressed in this paper.

Economics
Working Paper Series
No. 89

Note: The Research Reports of the Agricultural Development Systems: Egypt Project, University of California, Davis, are preliminary materials circulated to invite discussion and critical comment. These papers may be freely circulated but to protect their tentative character, they are not to be quoted without the permission of the author(s).

August, 1982

**Agricultural Development Systems:
Egypt Project
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FOOD CONSUMPTION AND DISTRIBUTION: AN OVERVIEW*

B. Delworth Gardner** and Dyaa Abdou***

Introduction

Nearly everyone concedes that Egypt is faced with a serious food problem. The Egyptian agricultural sector is unable to feed the increasing and more affluent population. In 1980, agricultural output was estimated to be increasing by about 2.0 percent annually, whereas the country's annual population growth rate was estimated at about 2.3 percent. If the difference in these growth rates continues, Egypt must increase imports each year just to maintain per capita consumption at the present level [3].

Indeed, Egypt's dependence on outside suppliers to feed its people shows a dramatic upward trend. For example, if present trends continue, by year 2000 the wheat gap between consumption and domestic production will reach about 7.0 million tons (from about 3.2 million tons in 1975), and the meat deficit will be 13.0 times the 1975 level. The rice trade balance will change from a surplus of about 151,000 tons in 1975 to a deficit of about 1.0 million tons. Vegetable oil and pulse imports will be almost double the 1975 level. These levels of projected imports might be unattainable if Egypt does not have the production capacity to create the foreign exchange needed. Also, considering resource availability and the productivity of the agricultural sector, as well as developments in factors affecting the demand for food,

*Paper presented at Agricultural Policy Workshop, sponsored by Agricultural Development Systems, Cairo, September 18-19, 1982. The authors express appreciation to Carole F. Nuckton for her expert editorial assistance.

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indications are that the situation is unlikely to be self-correcting unless there are some radical changes in the policies that price and allocate agricultural products.

Since 1960, heavy governmental intervention in nearly all aspects of the Egyptian agricultural economy occurred, especially in pricing and distributing basic foodstuffs [6, 7]. A rationing system for basic food staples was originally introduced in 1945 to deal with price controls and shortages growing out of World War II. Since then, several commodities and services have been heavily subsidized, creating a considerable burden on the government budget.

Much of the structure of food subsidies, rationing, and fixed producer prices and mandatory production quotas has resulted from deliberate governmental policy to redistribute income and wealth, especially in favor of the low-income urban population. There are powerful incentives, particularly political incentives, to shape policy toward these kinds of equity goals. When the distribution of income and wealth gets out of reasonable balance according to some equity criterion, governmental intervention is brought to bear to benefit disadvantaged groups. This is often countered by other policies to benefit still others now relatively disadvantaged. The end result is often massive interference with market forces and the distortion of market signals in the form of relative prices.

Economic efficiency is achieved when a country's resources are utilized so that the net value of national output is maximized. This is roughly equivalent to maximization of per capita income, probably the most important component in the standard of living. Thus, economically efficient use of resources is also a tremendously important goal of national policy, particularly for a developing country such as Egypt where per capita incomes

are relatively low. If an economy is predominantly market oriented, its markets must transmit signals (prices) accurately if it is to be economically efficient. That is, on the demand side prices should represent consumer marginal valuations of traded commodities. On the supply side, prices should reflect relative marginal opportunity costs.

A major hypothesis growing out of work reported in this paper is that the policies to achieve equity referred to above (food subsidies, rationing, etc.) are largely incompatible with economic efficiency and may be causing significant welfare losses to the economy as a whole. This is not to say that equity goals are unimportant. But it should be known what the efficiency costs are of achieving equity goals. Only then can the decision makers judge whether the equity goals are worth the cost.

Several ADS activities have been concerned with these and other consumption issues. Many working papers have been produced and distributed. We see our purpose at this meeting as reviewing the significant findings of these papers in three principal areas: (1) income and price elasticities and distribution of the primary food commodities, (2) food subsidies and their impacts on distribution, and implications for efficient resource allocation, and (3) economic efficiency costs of price and allocation policy to the economy as a whole. We shall also attempt to point out knowledge gaps that continue to exist.

Food Distribution and the Relevant Elasticities

The existing food distribution system that supplies consumers in Egypt is complex. It is primarily a combination of private grocers and government food stores. In theory, each neighborhood is to have one private grocer authorized

to handle rationed commodities. Each family is registered with this designated grocer in the neighborhood, receives a ration book, and buys the rationed food from this store. Presently, quantities are guaranteed (per individual) at a subsidized price for sugar, cooking oil, tea, and rice. The private grocer has other nonrationed items, which anyone can buy. Families can also buy extra quantities from government food stores through the ration book but at higher prices, and the quantity available depends upon supply. Bread has a different distribution channel and is sold at private and government bakeries in all urban and in many rural areas.

Currently, the rationed items are distributed as follows:

1. Sugar is rationed at 750 grams per person per month at L.E. 0.10/kg. (unbagged). Additional sugar quantities can be bought at government and private food stores for L.E. 0.30 -0.35/kg. depending upon quality.
2. Cooking oil is rationed at 450 grams per person monthly at L.E. 0.10/kg. Additional limited quantities (per family) can be bought at government stores at about L.E. 0.33/kg. Imported oils are available in private stores at L.E. 1.55/litre provided by private importers.
3. Low-quality rice is rationed at 1 kg./person/month at L.E. 0.05/kg. Additional quantities of generally better quality can be bought from government food stores or private grocers at L.E. 0.14/kg. when it is available.
4. Tea is rationed at 80 grams/person/month at L.E. 0.055/40 grams. Additional tea is sometimes available at government food stores, and prices depend upon quality.

Government food stores offer other less strictly rationed (semirationed) food items such as wheat flour, beans, lentils, imported frozen meat, and poultry. Prices of these items are also fixed at subsidized levels, but quantities per family depend upon the supply available. Government food stores also offer nonrationed items such as jams, cheese, canned fish, and eggs, but prices are free to seek their equilibrium levels.

Wheat and wheat flour are probably the most heavily subsidized. Balady (native) bread made of 93 percent extraction rate flour is sold at 0.5 P.T. per 135 gram loaf, while shammy bread made of 72 percent extraction rate flour is supposed to be sold at 1.0 P.T. per 148 gram loaf. Flour is made available to the bakeries at heavily subsidized prices, and bread quantities are generally unlimited in urban areas. Extraction rates of this flour have varied from one period to another according to governmental administrative rules and decrees.

In sum, the existing distribution system covers three general types of commodities. The first is subsidized and rationed food commodities where quantities per individual are guaranteed. The major food commodities under this category are cooking oils, sugar, rice (especially in urban areas), and tea. The second is subsidized and semirationed (loosely rationed where quantities per family are guaranteed except in times of supply shortages). Commodities under this category are beans, lentils, frozen beef, poultry, and flour. The third category is subsidized but not rationed, where quantities bought are unrestricted. Bread is the major item under this category. Also, the government distribution system deals with nonsubsidized food commodities such as some vegetables and fruits.

The data base for most studies of consumption is the Family Budget Surveys taken in the 1950s, 1960s, and 1970s [4]. The paper by Ismail, Gardner, and Abdou [9] attempts to provide answers to three questions: (1) Does per capita consumption of a given commodity vary among income classes and between urban and rural areas? (2) Did the per capita consumption of various commodities change over the decade 1964-65 to 1974-75? (3) Is the distribution of consumption related to the pricing and rationing policies of the government?

In the Family Budget Surveys [4], rural and urban families were sampled in each governorate in each season. Urban families were sampled in both the capital city and in other cities, roughly proportional to the distribution of population. In rural areas, 2 percent of the villages was selected at random in every governorate, with the sample size in each village proportionate to the population. Consumption expenditures were reported along with physical amounts of various commodities in the consumption bundle.

In constant 1959-1960 Egyptian pounds, total per capita expenditures in 1964-65 were L.E. 42.54 in urban areas and L.E. 25.38 in rural areas. By 1974-75, these real expenditures had increased to L.E. 55.91 and L.E. 34.39, respectively; a 31.4 percent increase for urban areas and 35.5 percent for rural areas. In 1964-65, rural per capita total expenditures were about 60 percent of those in urban areas; whereas in 1974-75, they were nearly 62 percent.

As a proportion of per capita total expenditures, per capita food expenditures were relatively larger for rural than for urban areas. In 1964-65, rural per capita expenditures for food were about 62 percent of total expenditures; in urban areas, about 50 percent. In 1974-75, the corresponding figures were almost identical. In 1964-65, food expenditures in rural areas were nearly 75 percent of those in urban areas; in 1974-75, just over 75 percent.

Real per capita food expenditures increased 32.5 percent in urban areas and 34.4 percent in rural areas between 1964-65 and 1974-75. Thus, expenditures for food increased at almost the same rate as the increase in total expenditures (31.4 percent in urban areas and 35.5 percent in rural).

Since expenditures are derived from both prices and quantities purchased, it is impossible to determine whether the higher expenditures in 1974-75 than

in 1964-65 resulted from greater quantities of food purchased, from higher quality food commanding higher prices, or simply from increases in the relative prices of food. More data are needed to search out the true explanations.

The Relationship Between Per Capita Consumption and Expenditure Class

From the Family Budget Survey of 1974-75, Ismail et al. [9] calculated the per capita annual consumption in physical terms for various commodities in both urban and rural areas (see Table 1). The Survey reported detailed consumption data for 16 total expenditure classes. Because of sampling problems, however, there were inconsistencies and anomalies in the data, so total expenditure classes were grouped into three broad classes: families spending from 0 to 200 L.E. (low-income class); those spending from 200 to 800 L.E. (middle income class); and those spending over 800 L.E. (high income class).

From the data in Table 1, the relative importance of various commodities in the Egyptian diet can be established, for both urban and rural areas. Urban people consume much more ready-made purchased bread than do rural people, who substitute wheat, wheat flour, corn, and sorghum. Rice is an important food in both areas. In the two upper expenditure classes, macaroni is consumed in large quantities in rural areas. Beef, milk, poultry, fish, eggs, white cheese, and margarine are relatively more important in urban than in rural areas, whereas local cheese, vegetable oils, butter, and butter oils are relatively more important in rural areas. Beans, lentils, sugar, tea, and coffee appear to be approximately equally important in urban and rural areas.

These data show per capita quantities of foodstuffs actually acquired by consuming families in 1974-75. They do not indicate actual disposition.

Table 1. Per Capita Consumption of Basic Food Commodities
in Urban and Rural Areas of Egypt in 1974-75a

Food Item	URBAN AREAS				RURAL AREAS			
	L.E. of Annual Expenditures			Total	L.E. of Annual Expenditures			Total
0 < 200	200 < 800	Over 800	0 < 200		200 < 800	Over 800		
Wheat	7.11	7.47	8.66	7.69	33.50	58.81	101.14	59.05
Wheat Flour	24.72	27.17	19.01	25.30	42.00	40.40	41.58	40.74
Bread	122.88	136.62	146.49	137.86	31.61	16.04	21.34	18.77
Macaroni	1.46	1.40	1.42	1.41	2.52	11.47	39.94	12.79
Corn	5.01	5.72	6.07	5.75	35.14	46.34	51.11	45.17
Sorghum	5.50	1.61	1.35	1.78	18.26	10.70	6.46	11.40
Rice	20.22	24.05	29.63	24.90	20.27	26.81	39.93	27.07
Beans -nongranulated	1.79	2.06	3.01	2.23	2.07	2.69	5.57	2.86
granulated	2.46	2.08	1.96	2.08	1.40	1.51	2.38	1.56
Lentils-nongranulated	1.51	1.46	1.52	1.47	0.83	0.75	1.18	0.80
Beef -fresh	4.08	7.02	18.28	9.15	5.61	5.80	11.62	6.31
frozen	0.68	0.76	0.68	0.74	0.04	0.03	0.03	0.03
Poultry	0.85	2.31	7.27	3.24	1.44	2.64	6.28	2.80
Fish	3.88	5.37	8.92	6.01	3.13	4.46	7.28	4.53
Eggs (number)	15.03	28.99	87.98	40.22	23.48	33.99	70.55	35.83
Milk	6.00	15.61	33.27	18.67	2.78	8.42	21.71	8.83
White Cheese	0.59	1.52	4.22	2.02	0.25	1.03	3.31	1.13
Local Cheese	4.16	3.00	2.28	2.92	6.16	6.23	7.89	6.34
Vegetable Oils	4.20	3.76	4.58	3.95	4.56	5.06	8.57	5.30
Margarine	3.96	4.03	4.30	4.08	2.78	2.38	2.69	2.47
Butter	0.25	0.64	1.66	0.83	0.75	1.45	2.14	1.42
Butter Oil	0.34	0.95	3.04	1.34	0.86	1.74	3.17	1.75
Sugar	9.46	11.70	18.63	12.98	12.31	13.26	15.73	13.35
Tea	0.66	0.74	0.83	0.75	0.55	0.68	0.85	0.67
Coffee -unmilled	0.01	0.34	0.14	0.05	0.01	0.02	0.04	0.02
milled	0.07	0.94	0.35	0.15	0.02	0.05	0.13	0.05

aIn kg. except eggs, which are given in number of eggs.

Source: Family Budget Survey in Egypt, 1974-75 [4].

Allegations are prevalent that the heavy subsidies, particularly for bread and flour, have made these products so cheap that they are utilized in "unintended" uses, such as for livestock feed. In order to determine the validity of these allegations, a project of the Price Policy and Subsidy Activity of ADS has surveyed households in Cairo and Zagazig, representing urban areas, and neighboring rural areas as well, to determine acquisitions and dispositions of commodities. These data are presently being analyzed.

In the Ismail et al. study [9], the following commodities were superior goods¹ in both urban and rural areas: wheat, corn, rice, nongranulated beans, fresh beef, poultry, fish, milk, white cheese, butter, butter oil, sugar, and tea. Of these the animal products (fresh beef, poultry, fish, milk, white cheese [contains butterfat], butter, and butter oil) are strongly superior, i.e., as total expenditures rise, per capital consumption rises sharply. The plant foods (wheat, corn, rice, nongranulated beans, sugar, and tea) are only weakly superior.

Sorghum is the only food that is inferior² in both urban and rural areas. Sorghum, granulated beans, granulated lentils, and local cheese are inferior in urban areas, while only sorghum is inferior in rural areas. Macaroni, wheat flour, vegetable oils, and coffee are superior goods in rural areas but are neither clearly inferior or superior in urban areas. Bread and margarine are superior in urban areas but are not in rural areas. Wheat flour, nongranulated lentils, and frozen beef cannot be unambiguously classified as superior (or inferior) in either area since consumption did not increase

¹Per capita consumption increases with income class.

²Per capita consumption decreases as income class rises.

(or decrease) monotonically with increases (decreases) in income categories.

In the Moustafa, Green, and Blaylock paper [12], data from the 1974-75 Family Budget Survey were divided into 16 expenditure classes and rather thoroughly analyzed. Engel functions for various wheat products were estimated by utilizing several functional forms: linear, double logarithmic, semi-logarithmic, and Box-Cox. Maximum likelihood estimates were made and likelihood ratio tests were performed between Box-Cox and each of the other three functional forms. Box-Cox generally outperformed the others.

The principal results are that wheat is a superior good in both rural and urban areas. Wheat flour, classed as ambiguous in [9], turns out to be inferior in urban areas and superior in rural areas. This result was not unexpected. The explanation seems to be that in rural areas as income rises people substitute wheat flour for cheaper maize flour. In urban areas, as income rises, people buy rather than make their bread and so purchase less wheat flour. Macaroni was superior in both areas, but bread was inferior in rural areas. This finding is probably due to the fact that subsidized ready-made bread was not available in all rural areas, so people make their own bread. As incomes rise they purchase more bread-making flour and buy even less ready-made bread.

Another study that estimated expenditure elasticities is de Janvry, Siam, and Gad [5]. Their primary focus was to study the economic impacts of forced deliveries of wheat and rice in the form of mandatory quotas on the distribution of income. They classified rural households into three income groups: the poorest 44 percent (Class I), the middle 53 percent (Class II), and the richest 3 percent (Class III). Their data came from the 1976 Farm

Management Survey rather than the Family Budget Surveys. They divide commodities into those that are home-produced and those that are purchased.

The signs of the expenditure elasticities for the various commodities--home-produced wheat, purchased wheat, flour, macaroni, bread, purchased rice, and home-produced rice--were all positive (though in a few cases not statistically significant), indicating that each of these commodities is a superior good in each of the income classes and for the total across classes.

Abdou and Green [1], in another ADS working paper, utilize data from the Family Budget Survey of 1974-75 to examine whether or not per capita consumption of various commodity groups varied by household size. The reported family sizes were: one individual, 2-3 individuals, 4-6 individuals, and 7 or more individuals. Sixteen family income categories ranged from less than L.E. 50 annually to over L.E. 2,000 for both urban and rural areas. The major food groups considered were: grains and starches, legumes (dry), vegetables (fresh and preserved), fruits (fresh and preserved), meat and poultry, eggs, milk and dairy products, and sugar. Per capita expenditures were calculated.

The hypothesis to be tested for each food group was that per capita consumption decreases as family size increases. If so, government policies that distribute commodities on a per capita basis may be inequitable in favoring large families. The empirical results confirmed the hypothesis. In nearly all cases, economies of scale in consumption expenditures existed: the larger the family size the lower the per capita expenditures.

Expenditure elasticities for the eight major food groups were estimated by family size for the urban and rural areas. In all cases, the elasticity

estimates indicated that the food groups were superior goods. If there were inferior goods in any of the groups, they were hidden in the group aggregates.

Of course, estimates of the magnitude of income elasticities vary in these studies because of different groupings of commodities, different functional forms utilized in analyses, and different data sets. This is to be expected, but detailed analyses of these differences did not seem appropriate for this paper.

This may be the place to raise the question of why all this attention in these studies has been given to income-consumption relationships and so little to price-quantity relationships, which are equally important for policy analysis, if not more so. The answer is complex. The Family Budget Surveys and the Farm Management Survey have been important sources of data for Engel-type estimates. Cross-sectional price data of similar quality do not exist. Prices are controlled at so many levels, and consumers are often not free to adjust quantities consumed to desired levels. This means that price may not reflect the marginal valuation of consumers. Under these circumstances it is difficult to see how price elasticities could be reliable in predicting consumer behavior in response to price changes. Thus, perhaps analysts have seen these problems and have concluded that the effort is not worth making, but, nevertheless, we are left with a critical paucity of price elasticities needed by analysts and policy makers.

Other findings concerning consumption distribution are of significance. Ismail et al. [9] made a major effort to assess the distribution of consumption of various commodities by expenditure class and by geographic area. Families were classified according to the magnitude of their per capita

consumption expenditures into 16 groups, and the classes were arrayed from lowest to highest. Gini coefficients¹ were calculated for total expenditures, food expenditures, and for the physical units of various food commodities consumed (see Table 2).

From the 1964-65 Survey, Gini coefficients for per capita total expenditures were .23 for urban and .18 for rural areas, respectively, suggesting a more unequal distribution in urban areas. By 1974-75, the coefficient for urban areas had risen to .28 while for rural areas it rose only slightly to .19. It would be interesting to know precisely the reasons for the greater inequality of distribution in urban areas and why the urban inequality increased relative to rural from 1964-65 to 1974-75. These questions merit further research.

There were also significant differences between urban and rural areas in the distribution of per capita food expenditures with the greater concentration (more unequal distribution) in urban areas. The Gini coefficients were lower for food expenditures than for total expenditures, confirming the view that food is more income inelastic than nonfood. It is also noteworthy that the concentration of per capita food expenditures did not change at all for urban families from 1964-65 to 1974-75 and only slightly (from .12 to .14) for rural families. This result is interesting because it shows that the increasing concentration of total expenditures in urban areas was attributable to a less equal distribution of nonfood expenditures through time.

¹Gini coefficient values lie between zero and one. A value near zero indicates a nearly equal distribution of the commodity in question across income classes. A value near one indicates a very high concentration, i.e., a very low percentage of the population (those who are wealthiest) consume most of the available supply.

Table 2. Gini Coefficients for Total Expenditure, Food Expenditure and Food Commodities in Urban and Rural Areas, Egypt, 1964-65 and 1974-75

Item	1964-65		1974-75	
	Urban Areas	Rural Areas	Urban Areas	Rural Areas
Total Expenditure	0.23	0.18	0.28	0.19
Food Expenditure	0.20	0.12	0.20	0.14
<u>Subsidized and rationed</u>				
Sugar	0.06	0.04	0.11	0.04
Tea	0.06	0.05	0.03	0.06
Vegetable Oils	0.04	0.05	0.05	0.10
Rice ^a	0.08	0.13	0.07	0.11
<u>Subsidized but not rationed</u>				
Wheat Flour	0.11	0.06	0.06	0.06
Bread	0.07	0.20	0.02	0.21
<u>Subsidized and sometimes rationed</u>				
Beans -nongranulated	0.07	0.12	0.09	0.17
granulated	0.05	0.12	0.06	0.09
Lentils-nongranulated	0.04	0.11	0.04	0.08
granulated	0.04	0.04	0.04	0.06
Imported frozen beef	0.07	0.30	0.08	0.29
<u>Neither subsidized, nor rationed</u>				
Wheat	0.04	0.11	0.11	0.17
Macaroni	0.19	0.27	0.05	0.43
Corn	0.08	0.10	0.07	0.26
Sorghum	0.24	0.12	0.27	0.17
Beef, fresh	0.22	0.11	0.25	0.13
Poultry	0.35	0.20	0.44	0.24
Fish	0.10	0.11	0.15	0.14
Eggs	0.30	0.13	0.30	0.18
Milk	0.24	0.29	0.23	0.31
White Cheese	0.27	0.24	0.30	0.42
Local Cheese	0.14	0.07	0.10	0.04
Margarine	0.06	0.13	0.02	0.16
Butter	0.27	0.15	0.30	0.16
Butter Oil	0.25	0.14	0.35	0.25
Coffee -nonmilled	0.41	0.26	0.36	0.32
milled	0.36	0.36	0.36	0.31

^aRice was subsidized in both periods but rationed only in the second.

Source: Family Budget Surveys in Egypt, 1964-65 and 1974-75 [4].

It is expected that consumption concentration of individual commodities would vary between urban and rural areas and through time. Tastes and preferences vary as do prices, incomes, supplies available, etc. Of special interest are the distributive impacts of rationing and subsidy policies. We would hypothesize that rationing would produce a more equal distribution if the rationing program is effective, since a ration card gives the same entitlement to all holders. The expected effects of a subsidy policy are less clear, although there are at least two reasons for believing a subsidy might also reduce inequality of consumption. First, the relative price decline of a subsidized good compared to one with no subsidy will usually result in the substitution of the former for the latter. For low income families this substitution response is likely to be stronger than for high income families--a fact which might well reduce the inequality of consumption. Second, a heavy subsidy would effectively mean that income would be reduced as a barrier to consumption of that good; and, of course, the income constraint is more binding on low income than high income families.

For purposes of comparing Gini coefficients, commodities were placed into four groups:

1. Those subsidized and rationed (sugar, tea, and vegetable oil, rationed in both periods; and rice, rationed only in urban areas in 1974-75).
2. Those subsidized but not rationed (wheat flour and bread).
3. Those subsidized and sometimes rationed depending on availability (beans, lentils, and imported frozen beef).
4. Those neither subsidized nor rationed.

All food commodities in the first category of subsidized and rationed have low Gini coefficients as hypothesized, in both rural and urban areas. Most Gini coefficients are below .10 showing very low concentration. Rice had

a slightly lower coefficient in urban areas in 1974-75 when it was rationed than in 1964-65 when it was not.

The Gini coefficients are also low for those in the second category of subsidized but not rationed commodities (wheat flour and bread) with the important exception of bread in rural areas. There is a very good reason for the exception. Ready-made bread is not generally available in rural Egypt. Most of the commercial bakeries are in urban areas. Also, bread is not made available in rural areas partly because its price is so low that it might be used as a cheap livestock feed, were it obtainable. Consequently, rural residents tend to make their own bread.

In urban areas for 1974-75, the Gini coefficient for bread is only .02. Since bread is the most subsidized of all commodities, it is not surprising that the Gini coefficient for bread is lower than for all other commodities in urban areas.

Those commodities in the third category of subsidized and sometimes rationed (beans, lentils, and frozen beef) have Gini coefficients that tend to be low in urban areas, higher in rural areas. This may mean that the subsidy and rationing policies are not very effective in the rural areas for these commodities.

The major unsubsidized, unrationed food items in category four generally have relatively high Gini coefficients in both urban and rural areas. This is especially true for animal products (fresh beef, poultry, eggs, milk, and white cheese).

A most interesting comparison can be made between subsidized imported frozen beef and unsubsidized local fresh beef. The subsidization policy seems to have had a strong effect at equalizing urban imported beef consumption. Very little frozen beef is consumed in rural areas. Unsubsidized fresh beef

is more equally distributed in the country than in the city as revealed by its respective Gini coefficients for both time periods.

Although not related to the government subsidy program an interesting comparison can be made between butter and margarine, both unsubsidized. Butter, a luxury item, has high coefficients in urban areas; they are lower in rural areas where butter is produced. The low coefficients on margarine in the cities capture the fact that it is an inexpensive butter substitute. The effect of government subsidies can be clearly seen by comparing the high coefficients for unsubsidized butter oil with the low ones for subsidized vegetable oils. The same point applies when comparing unsubsidized coffee coefficients with those for subsidized tea.

Evidence in support of the hypothesis that subsidies have served to equalize the distribution of consumption can be found in comparison of Gini coefficients among various staple commodities. Per capita consumption of wheat flour, wheat, corn, and sorghum is much higher in the country than in the cities where bread is available (recall Table 1). Only the subsidized commodity, however--wheat flour--exhibits a low Gini coefficient in rural areas.

Another pattern of some consequence is that most of the nonrationed, nonsubsidized commodities have higher Gini coefficients in 1974-75 than in 1964-65 in both rural and urban areas. These commodities include wheat, fresh beef, fish, poultry, white cheese, butter, and butter oils.¹ The explanation, probably lies in substitution through time of cheaper subsidized commodities in the consumption patterns of low income households, whereas in high income

¹Sorghum also has a higher urban-area Gini coefficient in 1974-75 than in 1964-65 but is not used much in urban areas so the result is an anomaly.

households the substitution would not be so extensive. This conclusion is corroborated by the fall in the Gini coefficient for bread in the urban areas between 1964-65 and 1974-75.

The conclusion of this study seems inescapable: the subsidy and rationing policies are clearly associated with commodities that are more equally distributed in consumption than those commodities that are not rationed and subsidized. If a more equal distribution of consumption was a desired goal of the subsidy and rationing policies, it is apparent that they have been successful. Of course, what the impacts have been on resource use efficiency and the size of the national income are not known and need to be studied.

Another ADS activity that is concerned with the distribution of consumption is that of El-Shennawy et al. [8]. The target group was the rural poor fellahin owning five or fewer feddans of land. Instead of relying on data from the Family Budget Surveys, as most other consumption studies have, this study collected data from ten representative rural villages during the period April 1, 1981--March 31, 1982. Interviewers asked what was eaten in the past 24 hours for one day in August and one day in October.

The principal findings were:

1. Food rationing reduces variability in consumption among income and landholding classes. Vegetable oils, tea, and sugar (all rationed) show the least variation. The pulses (semirationed) show much more variation.
2. Consumption in any given region is more heavily influenced by what is grown in that region than differences in price or income. An exception to this generalization is wheat, which is often sold in the local markets in order to purchase other commodities, including animal feed. The family then meets its consumption requirements for bread by purchasing subsidized bread and/or flour.
3. Animal producers eat more meat but also sell much of their production.

4. Cereal consumption was quite stable across income levels.
5. More red meat and milk were consumed by large landholders than small ones.

None of these findings appears to contradict those in other ADS studies reviewed, such as Ismail et al. [9].

Food Subsidies and Economic Implications

Few issues centering on the Egyptian economy have received more attention and discussion than subsidies, particularly subsidies to consumers of basic foodstuffs. Several ADS working papers have alluded to them as part of the food security problem, the fiscal-budget problem for the GOE, the foreign exchange trade problem, and the resource allocation problem within the agricultural sector and between this and other sectors. Most often the subsidy is analyzed from the viewpoint of a given government ministry, e.g., what the costs are of procuring and distributing wheat and wheat flour to the Ministry of Supply versus what consumers pay for products made from these raw materials. Often neglected is a broader analysis of the impacts of the subsidy system on the efficiency of the economy as a whole.

One thing is clear: No matter how measured, the total commodity subsidies in Egypt are increasing sharply through time. They amounted to about L.E. 2.0 million in 1960 and reached L.E. 510.6 million in 1976. About 80 percent was for food commodities. By 1979, total government subsidies for commodities and services reached L.E. 1.2 billion. Total commodity subsidies amounted to L.E. 885.0 million in that year, of which 93 percent was for food commodities. From official government statistics, over L.E. 700.0 million were allocated for wheat and wheat flour alone (79 percent) with the rest allocated for other rationed food items such as tea, sugar, and cooking oils.

Of course, it must be stated at the outset that the existing system has favorable as well as unfavorable impacts. After all, the policies must have been implemented to meet some perceived social need. The major benefits of the system seem to consist of the following:

1. Guarantee some level of basic nutrition for the bulk of the population and thus redistribute income from high to low income consumers.
2. Eliminate extreme shortages in basic foodstuffs that may exist without significant governmental intervention.
3. Control the spatial distribution of these basic foodstuffs in the different regions of the country in order to balance consumption with availability.
4. Protect Egyptian consumers against large world price fluctuations that would be especially catastrophic for poor people.
5. Curb consumption growth and ensure an equitable distribution by rationing basic food items.
6. Provide social and political stability.

These objectives are not static and therefore change over time as conditions change. But the fact remains that, relative to most other countries, food is cheap in Egypt, and no "serious" regional shortages occur. It is certainly widely believed that the existing policy helps in achieving social and political stability.

Still, some indications exist that the current food distribution and pricing system for basic subsidized foodstuffs may not be achieving all the goals desired for it. There are complex and contradictory impacts on the government and trade accounts, utilization patterns, consumption levels, income distribution, saving and income transfers, and the general agricultural development of the country that need to be sorted out. Unfortunately, we can only begin that process here.

Let us now look more deeply into some of the possibly unfavorable consequences of the current policies.

1. The high growth rate in consumption of basic subsidized food items.

The government policy of subsidizing basic foodstuffs has caused dramatic increases in the demand for these staple food commodities. Consumption of bread, tea, rice, sugar, and cooking oil is estimated to have increased by 5 to 8 percent annually in recent years. This rate is two to three times faster than the population growth rate.

Food distribution through the rationing system seems to be sufficient to cover most of the per capita consumption requirements for some commodities, but not all. For example, data from the latest Family Budget Survey of 1974-75 [4] indicate that per capita rice consumption averages about 27.07 kg. in urban areas and 24.9 kg. in rural areas. The rationed rice quantity covers only 44 percent and 48 percent of these quantities, respectively. Sugar consumption per capita averages about 13.35 kg. to 12.98 kg. in rural and urban areas, respectively. The ration entitlement seems to cover about 67 percent and 69 percent of sugar consumption in rural and urban areas, respectively. The per capita quantities of cooking oils distributed through rationing seem to cover all consumption in rural and urban areas with the exception of the coastal regions.

What is inefficient about this policy? If commodities must be subsidized, it implies that the prices to consumers are lower than the real supply costs to the economy as a whole. At the margin, it is quite likely that consumers value resources going into the supply of subsidized commodities at a lower level than if they had been used for the supply of alternative commodities. The end result is a misallocation of resources and a lower standard of living.

This is doubly true if the subsidy policy to consumers is combined with a policy of fixed prices to producers below world market levels on mandatory quotas delivered to the government. Under these conditions, the calculated subsidy will understate the "true" subsidy when considered from the vantage point of the economy as a whole. For example, suppose the border FOB price of rice is L.E. 150 per ton and the price on forced deliveries on quota from producers is L.E. 100 per ton. Further suppose that handling and distribution costs to the Ministry of Supply are L.E. 10 per ton. What is the subsidy to consumers who pay L.E. 50 per ton for rationed rice? Ministry costs are L.E. 110 and the subsidy from its point of view is L.E. 60 per ton. But since rice can be exported at L.E. 150, the opportunity cost of domestic consumption to the economy as a whole is L.E. 150 per ton and the consumer subsidy is L.E. 100 per ton.

In this connection, a policy of paying rice producers, who are generally poor, far below world market prices as part of a policy to subsidize relatively better-off urban consumers is hardly consistent with an equitable income distribution policy.

We shall have more to say later about the efficiency costs of subsidy and producer price policy.

2. Increasing dependency on imports.

The government policies generally favor consumers at the expense of producers. The availability of food at low prices to consumers and the lack of price incentives to producers lead to greater and greater dependency on foreign suppliers through time (Table 3).

The continuation of these distribution and pricing policies for the basic foodstuffs, could lead to importation of over 7 million tons of wheat,

Table 3. Imported Quantities and Value of Some Major Subsidized Food Items in Egypt

Year	Wheat		Wheat Flour		Maize		Vegetable Cooking Oils	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	1000 tons	1 million L.E.	1000 tons	1 million L.E.	1000 tons	1 million L.E.	1000 tons	1 million L.E.
1960-61	438.7	9.3	422.4	10.2	55.3	1.1	19.9	2.0
1965-66	1220.3	37.0	510.3	18.3	187.8	5.5	5.6	42.4
1973	1489.9	55.1	226.9	10.6	67.0	2.5	11.3	78.0
1975	2686.6	213.0	551.4	46.5	417.6	27.1	113.1	324.8
1977	2419.0	128.6	615.2	49.4	590.9	30.0	5.7	21.5
1978	3001.4	169.6	959.7	74.8	730.1	38.0	28.8	74.4
1979	2251.9	174.3	704.3	68.4	493.9	31.3	64.0	191.1

Source: Central Agency for Public Mobilization and Statistics.

325,000 tons of sugar, 657,160 tons of oils, 586,260 tons of red meat, and 110,100 tons of poultry by 2000 in order to cover domestic consumption [3]. Whether or not Egypt can generate foreign exchange needed to purchase this volume of food imports is problematical and will depend on prospects for guest worker remittances, revenues from the Suez Canal, oil exports, and other sources.

Also, the inclusion of rice in the rationing system may lead to the elimination of this traditional crop from the list of Egypt's agricultural commodity exports. Rice exports decreased from 366,093 M.T. in 1960-61 to about 94,878 M.T. in 1979. Indications are that Egypt might well soon become a net importer of rice and could require imports up to 1.0 million tons by year 2000 to cover domestic consumption [3].

3. Unintended consequences of price subsidies.

The partial distribution and pricing policy of controlling and subsidizing prices of specific commodities in urban areas while the prices of the same commodity or close substitutes in rural areas are determined in the free market has some unfavorable consequences. Some features of the unintended utilization are:

- a. A considerable quantity of subsidized low-priced bread and wheat flour are used in poultry and livestock feeding. The shortages and high prices of roughage and concentrates make this practice very profitable.
- b. Because some food items, especially bread, are so cheap, there is little incentive to prevent consumption "waste."
- c. There is a continuous shifting from high-priced nonsubsidized substitutes to subsidized goods when the latter are available. This shifting increases government expenditures on subsidies and raises administrative costs.
- d. Some reselling of rationed and semirationed subsidized food items occurs, principally by low income groups and usually at a very low

profit margin. They prefer cash over specific food items, particularly at certain times. Even though an unintended use, this trading may actually increase levels of well-being of all traders.

As discussed earlier, as the data on acquisition and disposition of foodstuffs from a 1981 survey become available, we should be able to quantify some of these unintended uses.

It is very difficult to control the distribution of subsidies, and often unintended groups benefit. Moustafa, Abdou, Gardner, and Green [11] discuss an interesting example. A ministerial decree requires the bakers to use 75 percent of the subsidized flour for making bread, which has a controlled price, and 25 percent in pastries and similar products which do not. The price bakers pay for flour depends on its ultimate use and more is paid for flour used in pastry and macaroni manufacture than for bread. In 1981, for example, the subsidized flour prices were L.E. 70.70 per ton if used for bread, L.E. 82.10 for macaroni, and L.E. 120,80 for pastries. The bakers can capture part of the subsidy intended for consumers by shifting flour that is supposed to be used for bread to pastries and macaroni. So far as we know, no studies have been made that quantify the extent of this practice, but it is alleged to be a problem of some significance.

Another way the bakers may diminish the subsidy intended for bread consumers is to not have supplies of bread on hand when shoppers call for it. Shoppers then may shift to products whose prices are not controlled rather than search elsewhere for available bread. There are also widespread, but largely unsubstantiated, allegations that bakers divert supplies of bread from the shops, where the price per loaf is controlled at 1 piaster per loaf to the streets where it may be sold for as much as 2 piasters per loaf. A final way that bakers can capture some of the subsidy is to cheat on the weight of the loaf that is sold at controlled prices.

4. Eligibility to participate in the system not limited to the poor.

In practice, the distribution system is not exclusively for the low income segments of the population. In January 1979, the number of issued ration books was about 7.0 million serving about 37.0 million individuals. This encompasses over 95 percent of the resident population.

In addition, cheap bread can be bought by all urban residents, and quantities are generally unlimited. Also, relatively poorer rural people eat much less ready-made subsidized bread, probably because it is not available. Even though the subsidy policy seems to have been initiated as an anti-poverty device, its extension to encompass nearly the entire urban population may well have solidified political support for its perpetuation.

5. Costs of regulation enforcement.

Penalties for violations of the rationing, production quota, and price control policies were fixed long ago in 1945 and 1950. In many cases, these penalties, usually in the form of fines, are low compared to the benefits derived from violating the rules. For example, the fine paid for every nondelivered ton in the compulsory rice quota is L.E. 50.0. The fine for onion is L.E. 20.0 per ton (with maximum of L.E. 500.0). Given the existence of open markets for these commodities where they may be sold at much higher prices, it may be profitable for producers to ignore the quota, sell in the open market, and pay the penalty. Also, the more isolated rural population may be unfamiliar with the government policy, especially as related to the availability of semirationed consumer items. Local administrators and distributors of the supply may profit from redirecting available supplies. In any case, the very existence of quotas, rationing, and price fixing on such a large scale means that enforcement will be costly if the rules are to be

obeyed, enforcement requiring resources that might have been utilized in other valuable ways.

6. Creation of uncertainty and irregular buying habits.

The distribution of basic (semirationed and nonrationed) subsidized food items depends upon available supply. Excess demand is a chronic condition. Consumer uncertainty about the timing and availability of supply leads to the hoarding of stocks. Long queues are nearly always observed near government food stores, indicating temporary availability of one item or another. Consumers tend to buy as much as allowed, either to minimize the time lost in queues at the government food stores or in order to resell the purchased food items at some profit margin. This phenomenon prevents the intended equal distribution of subsidized food items since those who value their time highly will not wait in queues. If the price is not increased, the existence of queues indicates either the need to increase the number of selling points for these basic food items, to restrict even more the quantities purchased, or to stabilize the supply so that purchases can always be made. All of these remedies for the long queues will probably increase government costs, but may be more than offset by reduced queuing and storage costs by individual consumers.

7. Misallocation of resources within the agriculture sector.

As already suggested, fixing the consumer prices of the basic subsidized food items at a low level creates a heavy burden on the government which must supply these commodities. The government attempts to mitigate this burden by reducing procurement costs. One way of doing this is by paying low prices to farmers, especially for crops marketed through the cooperative system. This

practice creates disincentives for producing these major food items domestically and forces the country to increase its imports to meet consumption requirements.

In an attempt to mitigate the impact of fixing farm prices at unprofitable levels, subsidized inputs and services are provided to producers to be used for the basic food and export crops. The quota quantities delivered to the government of the major subsidized food items are presented in Table 4. These quantities generally represent only a portion of the produced quantities. The rest is either consumed by the farm family or is sold in the local free market if one exists.

It is generally profitable for the Egyptian farmers to produce nonsubsidized commodities, even if they must pay the fines associated with violating the laws relating to quotas and areas planted specified by the government for the basic subsidized agricultural commodities. There is little doubt that the present system of administrative controls and low farm prices is seriously misallocating resources and is violating the principle of comparative advantage. It is easy to show that when commodities are both imported and grown domestically, the real cost to the economy of keeping domestic prices low is the price paid for imports. So long as domestic production costs are below border import prices, scarce resources could be saved in the economy as a whole if they were utilized in low-cost domestic production rather than to buy more costly imports.

8. Creation of unbalanced sector growth.

It is argued here that farm prices are depressed by administrative decrees in order to provide urban consumers with food subsidies. Prices in other sectors of the economy are increasing in real terms relative to those in

Table 4. Quota Delivered to the Government and Its Percentage of Total Production for Some Food Commodities, 1975-76/1979-1980

Year	Quantity Delivered and Percent							
	Wheat		Rice		Beans		Lentils	
	1000 tons	Percent	1000 tons	Percent	1000 tons	Percent	1000 tons	percent
1975-76	405.5	20	1165.5	48	36.3	15	4.2	9
1976-77	320.0	16	1085.9	45	52.1	21	12.4	32
1977-78	172.0	10	1053.9	46	52.5	20	11.1	36
1978-79	125.0	6	1107.3	47	34.3	15	4.8	24
1978-1980	197.0	11	1305.0	52	80.5	34	6.8	--

Source: Ministry of Supply.

agriculture, creating unfavorable terms of trade between agriculture and other sectors. This policy seriously retards growth in the agricultural sector and imposes unfair welfare losses on farm families compared to their urban counterparts. It is no accident that other nonsubsidized sectors are growing while the penalized agricultural sector is comparatively stagnant.

We turn finally to report some findings of the welfare costs incurred by existing subsidy and distribution policies.

Some Estimates of Resource Misallocation from Existing Subsidy,
Distribution, and Procurement Policies

Our ADS activity has produced three working papers that attempt to quantify the annual welfare losses suffered by the economy as a whole that result from government intervention in the markets for three crops: wheat, which is heavily subsidized but not rationed (see Moustafa, Abdou, Gardner, and Green [11]); rice, which is subsidized and rationed (see Ali and Gardner [2]); and beans, which are subsidized and semirationed (see Moustafa and Gardner [10]). Space limitations prevent a full discussion of the methods employed here. Essentially, our approach compares resource allocation under existing policies with that which would exist if prices were free to adjust to consumer demands, producer cost, and world prices. Egypt is assumed to be a price taker in world markets for these commodities and the world price represents the opportunity cost of domestic consumption to the Egyptian economy. Domestic demand curves represent marginal valuations by Egyptian consumers and supply curves represent the marginal opportunity costs faced by domestic producers.

Welfare losses may originate from either the demand side or the supply side of the market. In the case of wheat products: (1) demand-side welfare

losses occur because imports are available to consumers at marginal valuations that are below the real resource costs to the economy of those imports and (2) supply-side losses occur because producer opportunity costs are lower than the cost of imports, occasioned by producer prices being held below world market levels. In the case of rice: (1) demand-side welfare losses are suffered by the economy because exports of rice are foregone in order to make rice available to domestic consumers where marginal valuations are below the world price and (2) supply-side losses occur because at the margin, even in the free domestic rural market, producer prices are below world market levels and thus Egypt could add to its real national income by increasing rice production and exporting it. Finally, in the case of broadbeans:

(1) demand-side welfare losses occur because not enough is imported to equate marginal valuations of consumers to the world market price and (2) supply-side losses occur because the marginal costs of domestic producers are above the opportunities to import at the world price.

These demand- and supply-side welfare losses for wheat products are presented in Table 5 at various assumed values for elasticities of demand and supply. The estimates in Table 5 indicate that if the upper end of the ranges of elasticities of demand and supply considered are assumed, the welfare cost of existing programs exceeded 237 million pounds in 1980. This amounts to resource misallocation of approximately 6 L.E. per capita that could have gone into increased living standards.

Exact equity impacts were not quantified in this analysis, but it is not difficult to identify gainers and losers of the subsidy and producer price policy for wheat and wheat products. Compared to a free market alternative, consumers of wheat products are benefitted, particularly urban consumers who

Table 5. Welfare Losses of Subsidy and Producer Price Programs for Wheat, 1980

Supply-side Losses		Demand-side Losses		Total Social Welfare Loss L.E.
Assumed Price Elasticities Of Supply	Welfare Loss L.E.	Assumed Price Elasticities Of Demand	Welfare Loss L.E.	
0.66	59,456,000	-0.50	177,740,000	237,196,000
0.50	41,344,000	-0.50	177,740,000	219,084,000
0.25	18,344,000	-0.35	133,153,000	151,497,000
0.10	6,873,000	-0.10	41,749,000	48,622,000

grow no wheat. Producers of wheat suffer the supply-side losses. The government sector is paying much more for commercial imports at world market prices than the wheat is worth. The opportunity costs to the economy are what these expenditures might have been worth if the budget had been used for something else, either in the public sector or in the private sector if the resources had been utilized there. The wheat imports that come in under highly favorable concessionary arrangements, such as PL-480, however, might well be valued higher than costs to the economy and no doubt reduce the government's budgetary deficit on handling wheat and wheat flour.

For rice, the situation is quite different, since rice is a traditional export crop and is both subsidized and rationed. In addition, in the rural areas particularly, a "free" market for rice exists that is quite significant for both consumers and producers. Since the free market price is above the government procurement price on quota deliveries by producers, the marginal returns are enhanced by the existence of this market. This reduces the supply-side welfare losses to producers. By the same token, rural rice consumers can satisfy part of their demand from this market and the marginal disparity between the free market price and the world price is lower than if the free market did not exist, thus reducing the welfare losses to the economy from foregoing further exports. Table 6 shows estimates by Ali and Gardner [2] of welfare losses in urban and rural areas for rice at assumed elasticities of demand and supply. They are much lower than for wheat.

Broadbeans are both heavily subsidized and rationed in Egypt. Additional quantities are also sometimes available with the ration book and are referred to as "semirationed." This commodity is also imported in large quantities and the farm price on quota deliveries is held far below world market levels. The working paper by Moustafa and Gardner [10] reports estimates of the subsidy

Table 6. Welfare Losses of Subsidy and Rationing Programs for Rice, 1980

Supply-side Losses		Demand-side Losses		Total Urban and Rural Welfare Loss L.E.
Assumed Price Elasticities Of Supply	Welfare Loss L.E.	Assumed Price Elasticities Of Supply	Welfare Loss L.E.	
0.10	370,000	-0.12	urban 268,000	893,000
0.25	944,000		rural 625,000	
0.44	1,667,000	-0.31	urban 677,000	2,254,000
0.50	1,900,000		rural 1,577,000	
0.75	2,913,000	-.059	urban 1,042,000	3,945,000
			rural 2,903,000	

received by consumers and analyzes the welfare cost of the pricing and trade policies (Table 7).

We were not satisfied with the data on prices received by farmers in the free market for beans. So far as we know, no systematic study of this market has been made. As with elasticities of demand and supply, we simply used the information we had and assumed numbers that seemed reasonable.

The welfare losses calculated get to be sizeable at the higher elasticities of demand. If the demand curve is more elastic, the quantity that would be demanded at the world price below the free market price is larger than would be the case if the demand curve were less elastic. This would increase the sum of the disparities between the marginal valuations of consumers as represented by the demand curve and the world price.

It should be evident how these estimates of welfare losses depend on accurate price data and elasticities of demand and supply. We believe these data are relatively weak for Egypt, particularly price data in the free domestic markets. It appears that other ADS projects will improve our understanding of supply response and will generate better numbers for supply elasticities. We would like to see a similar effort on demand price elasticities.

Summary and Conclusions

The review of several ADS working papers having to do with food consumption and distribution in Egypt established several important points. For our purposes, two are especially important. First, based on expenditure elasticity estimates, all but a very few goods were classed as superior; sorghum being one notable exception. That is, as incomes increase in Egypt, people tend to eat more and better food. Given that most foodstuffs are thus

Table 7. Welfare Losses of Pricing and Trade Policy for Broadbeans, 1980

Assumed Price Elasticities of Supply	Supply-side Losses			Demand-side Losses	
	Assumed Free Market Price to Farmers			Assumed Price Elasticities of Demand	Welfare Loss L.E.
	500 L.E./ton	400 L.E./ton	235 L.E./ton		
-----L.E.-----					
.25	2,364,000	697,000	476,000	-.10	1,871,000
.50	4,432,000	1,309,000	952,000	-.22	3,447,000
.75	6,402,000	1,891,000	1,462,000	-.50	10,244,000
				-.75	16,449,500

classified, a policy to lower costs of certain of these superior goods by means of subsidies is one way of increasing consumer's incomes and thereby their nutrition levels.

The Gini coefficient analysis established rather clearly that those commodities which are subsidized and/or rationed are more equitably distributed across income classes, particularly in urban areas. For these commodities, the goal of an equitable distribution seems to be close to being accomplished.

The question is, however, at what cost to the economy? Is it even possible that everyone in Egypt, including the urban poor, whom the policies tend to favor, would be better off without the subsidies? The benefits and costs of Egyptian food policy were described in the second section of this review paper. Although certain benefits clearly have been achieved, the costs and other problems need to be reiterated here in order to demonstrate that society may in fact be worse off than it would be without those policies. The redistribution of income from the wealthy to the poor by means of well-intended government intervention may sometimes result in the poor being worse off than before. A remention of the problems is in order here:

--Subsidies have rapidly increased the consumption rate of particular commodities. If consumers value resources going into the supply of these chosen commodities lower than if these resources had been used to produce a preferred commodity, their standard of living is thereby lowered.

--The government's favoring consumers over producers has led to producer disincentives, lower domestic production, and a greatly increased dependence on imports. So long as domestic production costs are below

import prices the nation's scarce resources are being squandered in choosing importation to meet demand.

--Price subsidies have had some unintended consequences, including waste of the subsidized commodity because it is so cheap.

--Although food policy may be intended to benefit the poor, in fact, rich and poor alike, particularly in urban areas, participate in the programs.

--Enforcement of any system of quotas, rationing, and price fixing is costly for the government to maintain. Resources going into such enforcement might have been used in other ways making everyone better off.

--Subsidization of basic foods has created excess demand for these items leading to chronic shortages, consumer queues, hoarding incentives, and other costly phenomena.

--Meanwhile, as other sectors of the Egyptian economy are growing, agriculture is stagnating. Thus penalizing agriculture may decrease the efficiency in the entire economy.

It is one matter to discuss these various dangers of the system, but it is quite another to provide quantitative measures of the magnitude of the welfare loss to society. Much needs to be done in this area. Only three studies [11, 2, and 10] have attempted to provide some estimates of the loss in L.E. associated with subsidy programs for wheat, rice, and broadbeans, respectively.

Better data and better estimates of the elasticities of supply and demand for the particular commodities will help determine a correspondingly more accurate measure of the welfare losses involved. Only then can it be

answered whether the policy favoring equity is "worth it" in terms of efficiency loss to the economy.

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