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THE IMPACT OF POPULATION GROWTH AND URBANIZATION ON FOOD CONSUMPTION PATTERNS IN EGYPT

A JOINT PROJECT OF THE UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA) AND THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, REGIONAL OFFICE FOR THE NEAR EAST (FAO/RNEA)

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PREFACE

This study deals with the impact of population growth and urbanization on food consumption patterns in Egypt and comprises six chapters. The first and second chapters provide an analysis of the food situation and food consumption policies in the 1980s, while the third and fourth deal with population growth and urbanization and their relationship to food consumption patterns and the changes in these patterns in urban and rural areas. The fifth chapter analyses the factors affecting food consumption patterns, and the last chapter provides a summary and conclusions.

This study was initiated by the Regional Food and Nutrition Officer of the Food and Agriculture Organization of the United Nations/Regional Office for the Near East (FAO/RNEA) and the Economic Affairs Officer of the Joint ESCWA/FAO Agriculture Division (JNEA), and was undertaken as a joint activity between FAO and ESCWA. The study was prepared by Mr. Ali M. Hadhoud, and reviewed by the two officers.

It is hoped that this document will provide decision makers and senior officials concerned with population, food and agriculture issues with a better understanding of the impact of population growth and urbanization on food demand and consumption.

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Two dots (..) indicate that data are not available or are not separately reported.

A hyphen (--) indicates that the amount is nil or negligible.

An em dash (—) indicates that the item is not applicable.

A minus sign (-) before a figure indicates a deficit or decrease, unless otherwise indicated.

The opinions, figures and estimates set forth in this paper are the responsibility of the author, and should not necessarily be considered as reflecting the views or carrying the endorsement of the United Nations.

Bibliographical and other references have, wherever possible, been verified.

INTRODUCTION

Consumption expenditure is considered one of the most important items of national expenditure in most developing countries, and Egypt is no exception. Final consumption expenditure constituted about 97.35 per cent of the Egyptian growth national product (GNP) in 1991/1992. There are two important reasons for studying consumption expenditure: first, this item represents a high proportion of national expenditure; and second, the welfare of the Egyptian people is closely correlated with this variable—i.e., welfare is measured in terms of consumed quantities of commodities and services. Economic policies should be based on achieving equilibrium between consumption-related targets and the objectives of economic and social development; this, in turn, implies the need for greater mobilization of domestic saving capacities in order to ensure the investments required for the implementation of a socio-economic development plans which aims at increasing the well-being of people in the future.

The aims of this study are to investigate and provide a better understanding of the major factors and variables affecting food consumption patterns in Egypt—i.e., population growth and urbanization, developments in income and income distribution, overall economic policies (including food-consumption-related policies), foreign trade policies, pricing policies, and agricultural policies.

Sources of data for this study include publications of the Central Agency for Public Mobilisation and Statistics (CAPMAS) especially those dealing with food consumption, the 1981/1982 Household Budget Survey, and primary data derived from 1990/1991 research on income, expenditure and consumption in Egypt, as well as available data from the Ministry of Supply and Internal Trade and the Ministry of Agriculture and Land Reclamation have been utilized as well. The study is also based on more recent research conducted by the author and others on food consumption in Egypt. A number of descriptive and quantitative statistical methods and procedures have been used to achieve the main objectives of study; specifically, simple and multiple regression analysis and annual growth rate have been used to evaluate the major variables, which cover the 1980s period.

The study includes six chapters, including a summary and conclusion. The first chapter analyses the food situation in Egypt during the 1980s, including sources of food supply, certain aspects of food demand at both the individual commodities and food groups levels, and an overview of domestic production, net foreign trade, human consumption and self-sufficiency rates. Per capita consumption of major food commodities during the 1980s is also presented and discussed.

Chapter II is devoted to a discussion of food consumption policies in Egypt during the 1980s—namely, developments (i.e., variations and fluctuations) in rationed commodities and per capita rations (distribution) of these commodities over the 1980s period. Developments in food subsidies and food aid for Egypt over the 1980s are also discussed.

Chapter III deals with population growth and urbanization as they relate to Egyptian food consumption patterns. Basic topics of this chapter include rates of annual growth for the rural and urban population, internal migration and its effect on the urbanization process, and the effect of population distribution on food consumption patterns.

Chapter IV discusses variations in food consumption patterns according to per capita income for rural and urban areas in Egypt. The following topics are discussed: developments in national

income and national consumption, income and expenditure distribution, variations in income at the urban/rural regional and governorate levels, and finally, the impact of income increase on the consumption of food in specific food groups.

Chapter V discusses the major factors affecting Egyptian food consumption patterns, including pricing policies, the seasonality of agricultural production, the appearance of new social groups or strata, and finally, values and traditions.

I. AN ANALYSIS OF THE EGYPTIAN FOOD SITUATION IN THE 1980s

This chapter deals with the Egyptian food supply. Indicators for major food sources include local production, net foreign trade, and stock changes for both individual food commodities and major food groups. Certain aspects of food demand in Egypt are also discussed, including human consumption, industrial uses, animal feed, and losses for each of the two levels (single commodities and food groups) mentioned above. Rates of self-sufficiency and changes in per capita consumption over the 1980s are also computed and discussed for individual commodities and major food groups.

Most of the data have been obtained from CAPMAS publications, especially the *Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991*. A time period covering 1980/1981 to 1989/1990 is divided into two subperiods; the first covers 1980/1981 to 1984/1985, and the second 1985/1986 to 1989/1990. Both subperiods as well as the whole 1980s period are analysed to identify major changes related to each of the food sources.* Certain aspects of food demand and rates of self-sufficiency for individual commodities and major food groups, as well as changes in per capita consumption for the major food commodities, are also recorded.

The relative importance of food sources and uses and the structure of food supply and relevant aspects of food demand are measured using regression analysis to estimate annual growth rate, using the following regression model (formula):

$$(\text{Log } Y_i) = \alpha + B\ X_i + E_i$$

Where:

$(\text{Log } Y_i)$ = logarithm of the dependent variable, for which annual growth rate is computed;
X_i = time where i = 1, 2 ... 10 throughout the 1980s;
E_i = random error;
α, B = parameters.

Using the model, annual growth rate equals (B-1) — i.e., this rate is positive when $B > 1$ and negative when $B < 1$.

A. Evaluating food supply, demand, and self-sufficiency in Egypt

1. Sources of food supply

The sources of food supply in Egypt are local production and net foreign trade (imports minus exports). It should be noted that Egypt imports wheat, wheat flour, maize, lentils, red meat, poultry, beef, fish, eggs, vegetable oil, ghee, sugar and tea, while it exports whatever exceeds domestic consumption—i.e., rice, potatoes, and some varieties of vegetables and fruits (including

* For sections A-D of this chapter, the two subperiods cover the five-year fiscal periods just described; for section E, the two subperiods cover calendar years (i.e., 1981-1985 and 1986 to 1990).

citrus fruits). For any commodity, stock change means the difference between beginning stock and year-end stock.

2. Aspects of food demand

Human consumption is considered one of the most important aspects of food demand for commodities in Egypt. Feed for livestock involves significant quantities of maize and broad beans only, while maize, white rice (milled), eggs, and vegetable oil are the most important items for industrial use. The data have also shown losses for all commodities except red meat, poultry, fish, fresh milk, vegetable oil, ghee, and sugar. Seed (for planting) constitutes one aspect of demand for wheat, maize, rice, broad beans, lentils, other legumes, potatoes, and other vegetables.

3. Self-sufficiency rates

For any commodity, the self-sufficiency rate is equal to local production divided by total available supply for consumption; less than 100 per cent self-sufficiency means that imports necessarily constitute one source of available supply, whereas more than 100 per cent self-sufficiency indicates that there is an excess which can be exported.

B. The status of various food groups and their aggregate budgets

1. Food grains group

The grains group includes wheat, wheat flour, maize and white rice. In this subsection, sources of supply, aspects of demand, and self-sufficiency rates for each of the four commodities are discussed. It should be noted that this group also includes barley and sorghum—commodities of lesser importance in terms of foreign trade, which are used mainly for animal feeding and industrial uses. Throughout the 1980s, average barley and sorghum production was about 129,250 and 612,940 tons, respectively—or 1.5 and 7.09 per cent—of total grain production (8,640,570 tons).

(a) Wheat

Average yearly local production of wheat throughout the 1980s is estimated to have been 2,457,980 tons, or 28.45 per cent of total annual average food grain production (estimated at 8,640,570 tons) for the same period. For the first half of the 1980s (1980/1981 to 1984/1985), average yearly local production of wheat was estimated at 1,927,810 tons; by the second half of the decade, this figure had increased by about 1,060,340 tons, or 55 per cent (table 1).

Egypt's annual imports of wheat averaged, throughout the first half of the 1980s, an estimated 4,422,720 tons—or 70.2 per cent of the total available supply for consumption. Average annual imports increased by about 932,770 tons, or 21.09 per cent, during the second half of the decade, for a total of about 5,355,490 tons a year, on average. In general, it can be said that wheat imports constituted about two thirds of total available supply throughout the 1980s.

Average annual human consumption of wheat was estimated at 5,953,670 tons for the first half of the 1980s and about 7,913,510 tons for the second half—an increase of about 1,959,840 tons, or 32.92 per cent. Other uses, including losses and seed, respectively, constituted only about 4.06 and 1.43 per cent of total available supply throughout the 1980s.

The preceding discussion indicates that self-sufficiency for wheat increased from 30.59 per cent in the first period to about 35.7 per cent in the second, in terms of total available supply for consumption, meaning that local production of wheat satisfied only one third of total consumption needs.

(b) Imported wheat flour

Egypt's average annual imports of wheat flour were estimated at 1,511,430 tons during the first half of the 1980s, and about 1,303,400 tons for the second—a decrease of about 208,030 tons, or 13.76 per cent. It should be noted that 98.27 per cent of this imported wheat flour was used for human consumption, and 1.73 per cent was considered losses (table 1).

(c) Maize

As shown in table 1, average yearly local production of maize throughout the 1980s is estimated to have been 3,750,330 tons, equal to about 43.4 per cent of the corresponding total average annual grain production. The average yearly production of maize was estimated at 3,512,210 tons for the first half and 3,988,460 tons for the second half of the 1980s, an increase of about 467,250 tons, or 13.56 per cent.

Egypt's average annual maize imports increased from about 1,478,800 tons in the first half of the same period to about 1,664,630 tons in the second half, an increase of about 185,830 tons, or 12.57 per cent between the two periods. Overall, Egypt's imports constituted about 29.44 per cent of the total available maize supply for consumption throughout the 1980s.

Average annual human consumption was estimated at about 3,212,480 tons for the first half of the 1980s and 3,695,910 tons for the second half, an increase of about 483,430 tons or 15.1 per cent. The annual average for other uses (starches and glucose) were estimated at 106,540 tons throughout the 1980s, or about 2 per cent of the available supply. Other uses, including animal feed, seed, and losses, constituted about 29.73, 2.5, and 1.06 per cent of the available supply, respectively, for a collective total of about 33.29 per cent.

The self-sufficiency rate for maize was about 70.13 per cent for the first period and 70.37 per cent for the second, for a combined average annual rate of about 70.26 per cent for the entire period. Data showed that Egypt's maize imports were equal to the quantities of maize used for animal feeding—i.e., local production were sufficient for human consumption, starch and glucose, losses, and seed throughout most of the 1980s.

Table 1. Average annual supply and demand distribution for major food grain commodities between 1980/1981 and 1989/1990*

Commodity and period	Quantity and proportion	Supply			Total available supply (4)	Demand		
		Local production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5+6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Wheat								
1980/1981-1984/1985	(Thousands of tons)	1 927.81	-48.05	4 422.72	6 302.48	5 953.67	--	348.81
	(Percentage)	30.59	-0.76	70.17	100	94.47	--	5.53
1985/1986-1989/1990	(Thousands of tons)	2 988.15	26.27	5 355.49	8 369.91	7 913.51	--	456.40
	(Percentage)	35.70	0.32	63.98	100	94.55	--	5.45
1980/1981-1989/1990	(Thousands of tons)	2 457.98	-10.89	4 889.11	7 336.20	6 933.59	--	402.61
	(Percentage)	33.50	-0.15	66.64	100	94.51	--	5.49
Wheat flour								
1980/1981-1984/1985	(Thousands of tons)	--	-12.82	1 511.43	1 498.61	1 472.38	--	26.23
	(Percentage)	--	-0.85	100.85	100	98.25	--	1.75
1985/1986-1989/1990	(Thousands of tons)	--	8.42	1 303.40	1 311.82	1 289.52	--	22.30
	(Percentage)	--	0.64	99.36	100	98.30	--	1.70
1980/1981-1989/1990	(Thousands of tons)	--	-2.20	1 407.42	1 405.22	1 380.95	--	24.27
	(Percentage)	--	0.16	100.16	100	98.27	--	1.73
Maize								
1980/1981-1984/1985	(Thousands of tons)	3 512.21	16.79	1 478.80	5 007.80	3 212.48	98.04	1 697.28
	(Percentage)	70.13	0.34	29.30	100	64.15	1.96	33.89
1985/1986-1989/1990	(Thousands of tons)	3 988.46	14.83	1 664.63	5 667.92	3 695.91	115.06	1 856.95
	(Percentage)	70.37	0.26	29.27	100	65.21	2.03	32.76
1980/1981-1989/1990	(Thousands of tons)	3 750.33	15.82	1 571.71	5 337.86	3 454.20	106.54	1 777.12
	(Percentage)	70.26	0.30	29.44	100	64.71	2.00	33.29
White rice								
1980/1981-1984/1985	(Thousands of tons)	1 610.04	-10.09	-54.30	1 545.65	1 429.00	46.33	70.32
	(Percentage)	104.16	-0.65	-3.51	100	92.45	3.00	4.55
1985/1986-1989/1990	(Thousands of tons)	1 770.11	-16.36	-61.91	1 691.84	1 538.75	77.83	75.26
	(Percentage)	104.63	-0.97	-3.66	100	90.95	4.60	4.45
1980/1981-1989/1990	(Thousands of tons)	1 690.07	-13.22	-58.10	1 618.75	1 483.87	62.09	72.79
	(Percentage)	104.41	-0.82	-3.59	100	91.67	3.83	4.50
Food grains group (total)								
1980/1981-1984/1985	(Thousands of tons)	7 050.05	-54.15	7 358.65	14 354.55	12 067.52	144.39	2 142.64
	(Percentage)	49.11	-0.38	51.26	100	84.07	1.00	14.93
1985/1986-1989/1990	(Thousands of tons)	8 746.72	33.17	8 261.60	17 041.49	14 437.69	192.88	2 410.92
	(Percentage)	51.33	0.19	48.48	100	84.72	1.13	14.15
1980/1981-1989/1990	(Thousands of tons)	7 898.38	-10.44	7 810.08	15 698.02	13 252.61	168.63	2 276.78
	(Percentage)	50.31	-0.07	49.75	100	84.42	1.07	14.50

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

(d) White rice

Table 1 shows that average annual production of white rice throughout the 1980s was estimated at 1,690,070 tons or 19.56 per cent of total average annual food grain production (which was estimated at 8,640,570 tons for the same period). Average yearly production increased from 1,610,040 tons for the first half to about 1,770,110 tons for the second half of the 1980s, an increase of about 160,070 tons or 9.94 per cent. It should be mentioned that white rice was the one food grain commodity for which local production exceeded aggregate consumption. Average annual exports of white rice throughout the 1980s were estimated at 58,100 tons, or 3.59 per cent of total available supply for consumption.

Average annual human consumption of white rice was estimated at 1,429,000 tons for the first half of the 1980s, and at 1,538,750 tons for the second half, an increase of about 7.68 per cent. Average annual industrial uses were estimated at 62,090 tons, or 3.83 per cent of available supply throughout the 1980s, while average annual seed and losses constituted about 2.54 and 1.96 per cent of available supply, respectively, for the same period.

Based on the preceding analysis, self-sufficiency rates for white rice increased from 104.16 per cent in the first half of the 1980s to about 104.64 per cent in the second half, for a total combined average of about 104.41 per cent for the entire period.

2. Supply of and demand for food grains

This part focuses on the supply and demand for wheat, wheat flour, maize, and white rice as a group. These four commodities collectively constituted about 91.41 per cent of the total production of food grains in Egypt for the 1980-1990 period, whereas barley and sorghum together represented about 8.59 per cent of food grain production throughout the 1980s.

Average yearly production for the four commodities mentioned above was estimated at 7,050,050 tons during the first period and 8,746,720 tons during the second period, an increase of about 1,696,670 tons, or 24.07 per cent. It should be mentioned that wheat flour was an imported commodity, so the increased production during the second period was reflected in increases in the other three commodities—i.e., about 1,060,340; 476,250 and 160,070 tons of wheat, maize and white rice, respectively.

Average annual net foreign trade (imports minus exports) for the four commodities was estimated at 7,358,650 tons for the first period and 8,261,600 tons for the second period, an increase of about 902,950 tons or 12.27 per cent. Most of this increase stemmed from wheat imports, which increased by about 932,770 tons over the 1980s period.

Average annual human consumption of the four commodities increased from about 12,067,520 tons in the first period to about 14,437,690 tons in the second period, an increase of about 2,370,170 tons, or 19.64 per cent. Specifically, out of the total increase in human (grains) consumption, wheat constituted 82.69 per cent, while maize and white rice constituted 20.4 and 4.63 per cent respectively; human consumption of wheat flour decreased by about 7.72 per cent of the total increase just mentioned. Overall, human consumption of (i.e., demand for) the four

commodities represented about 84.42 per cent of the available supply for consumption throughout the 1980s; industrial uses represented about 1.07 per cent, and other aspects of demand, including animal feed, seed, and losses, represented about 14.5 per cent.

The figures above indicate that the available supply of the four commodities over the 1980s was more or less equally divided between local production (50.31 per cent) and net foreign trade (about 49.75 per cent).* Adding average annual production of barley and sorghum in the 1980s to the corresponding production of the four commodities results in an average annual production of about 8,640,570 tons of food grains, or about 52.56 per cent of the total available supply of grains in Egypt (i.e., average annual production was about 16,440,210 tons over the entire period). In other words, in terms of self-sufficiency in food grains, Egyptians were able to meet just over one half of their needs.

3. Dry legumes group

This group includes broad beans, lentils, and other legumes (dry peas, dry common beans, dry cow-peas, fenugreek, lupines, and chick-peas). The following points should be noted at the outset: first, Egypt's foreign trade statistics for broad beans and other legumes show exports and imports together at the same time; second, lentils have been an imported commodity (i.e., some of the country's requirements have been met through imports); and third, broad beans is the only crop within this group showing animal feed as one aspect of its demand.

4. Supply of and demand for dry legumes

As indicated in table 2, average annual production of dry legumes was estimated at 336,730 tons for the first period, but rose to about 453,590 tons in the second half of the 1980s, an increase of about 116,860 tons or 34.7 per cent. Out of the production increase in the second half, 87.83 per cent was attributed to broad beans, while 5.3 per cent and 6.87 per cent were attributed to lentils and other legumes, respectively.

Net foreign trade for the dry legumes group (imports minus exports) was estimated at 86,710 tons as an annual average for the first period, but this amount decreased to about 46,730 tons in the second period—by about 39,980 tons, or 46.11 per cent.

Average annual human consumption of dry legumes was estimated at 335,630 tons in the first period of the 1980s, rising to about 393,060 tons in the second period, an increase of about 57,430 tons or 17.11 per cent. Overall, human consumption of dry legumes constituted about 77.59 per cent of the total available supply for consumption, with other aspects of demand, including animal feed (for broad beans only), losses, and seed, collectively constituting the remaining 22.41 per cent for the entire 1980s period.

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* Stock changes account for the failure of the two figures to add up to 100 per cent; the same is true for the remaining sections of this chapter.

Table 2. Average annual supply and demand distribution for dry legumes between 1980/1981 and 1989/1990*

Commodity and period	Quantity and percentage	Average annual supply			Average annual total available supply (4)	Average annual demand		
		Local production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5+6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Broad beans								
1980/1981-1984/1985	(Thousands of tons)	267.06	1.28	27.25	295.59	214.71	--	80.88
	(Percentage)	90.35	0.43	9.22	100	72.64	--	27.36
1985/1986-1989/1990	(Thousands of tons)	369.70	10.57	-1.66	378.61	273.38	--	105.23
	(Percentage)	97.65	2.79	-0.44	100	72.21	--	27.79
1980/1981-1989/1990	(Thousands of tons)	318.38	5.93	12.79	337.10	244.04	--	93.06
	(Percentage)	94.44	1.76	3.80	100	72.39	--	27.61
Lentils								
1980/1981-1984/1985	(Thousands of tons)	08.38	2.89	59.46	70.73	66.90	--	3.83
	(Percentage)	11.85	4.09	84.06	100	94.58	--	5.42
1985/1986-1989/1990	(Thousands of tons)	14.57	0.64	48.43	63.64	57.92	--	5.72
	(Percentage)	22.89	1.01	76.10	100	91.01	--	8.99
1980/1981-1989/1990	(Thousands of tons)	11.47	1.77	53.95	67.19	62.41	--	4.78
	(Percentage)	17.07	2.63	80.29	100	92.89	--	7.11
Other legumes								
1980/1981-1984/1985	(Thousands of tons)	61.29	--	--	61.29	54.03	--	7.26
	(Percentage)	100	--	--	100	88.15	--	11.85
1985/1986-1989/1990	(Thousands of tons)	69.32	--	-0.04	69.28	61.76	--	7.52
	(Percentage)	100.06	--	-0.06	100	89.15	--	10.85
1980/1981-1989/1990	(Thousands of tons)	65.31	--	-0.02	65.29	57.90	--	7.39
	(Percentage)	100.03	--	-0.03	100	88.62	--	11.32
Legumes group (total)								
1980/1981-1984/1985	(Thousands of tons)	336.73	4.18	86.71	427.62	335.63	--	91.99
	(Percentage)	78.75	0.97	20.28	100	78.49	--	21.51
1985/1986-1989/1990	(Thousands of tons)	453.59	11.22	46.73	511.54	393.06	--	118.48
	(Percentage)	88.67	2.19	9.14	100	76.84	--	23.16
1980/1981-1989/1990	(Thousands of tons)	395.16	7.70	66.72	469.58	364.35	--	105.23
	(Percentage)	84.15	1.64	14.21	100	77.59	--	22.41

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

Self-sufficiency rates for dry legumes were estimated at 78.75 per cent for the first period and 88.67 per cent for the second period, for a combined average of 84.15 per cent for the decade. It should be noted that the lowest self-sufficiency rate was shown for lentils (17.07 per cent); rates were much higher for broad beans (94.44 per cent) and other legumes (an estimated 100 per cent) throughout the 1980s.

5. Fresh vegetables group

This group includes potatoes, watermelons and other melons, and other vegetables (i.e., all fresh vegetables except those just mentioned). For potatoes, trade involved both exports and imports (with the former exceeding the latter), while trade for watermelon, other melons and other vegetables involved exports only. With respect to demand for fresh vegetables, human consumption predominated, while other aspects of demand (including seed and losses) were incidental. The CAPMAS Bulletin (1992a) does not include any data related to industrial or animal feed uses.

6. Supply of and demand for fresh vegetables

As indicated in table 3, average annual production of all vegetables increased from about 8,611,940 tons in the first period of the 1980s to about 10,820,840 tons in the second period, an increase of about 2,208,900 tons, or 25.65 per cent. This increase was attributable to various crops, as follows: 21.34 per cent for potatoes, 4.67 per cent for watermelon and other melons, and 73.99 per cent for other vegetables.

Average annual net trade (exports minus imports) showed an increase of about 6,680 tons for potatoes, and a decrease of about 750 and 16,680 tons for melons/watermelon and other vegetables, respectively. The average annual supply and demand for all vegetables thus showed a decrease of about 10,750 tons, or 6.07 per cent in terms of net trade.

Average annual human consumption of vegetables increased from 7,389,520 tons in the first period to about 9,311,070 tons in the second period, an increase of about 1,921,550 tons, or 26 per cent. Overall, average annual human consumption of vegetables in Egypt represented about 87.49 per cent of the total available quantity for consumption throughout the 1980s with losses and seed together representing about 12.51 per cent.

7. Fruits group

This group includes citrus fruits (oranges, mandarins, limes, lemons, rough lemons, citrons and others), fresh grapes, and other fruits (apricots, plums, pears, mangoes, bananas, figs, pomegranates, olives, gauvas, dates, peaches, prickly pears and others). For citrus fruits and fresh grapes, the data show that exports exceeded imports, while imports exceeded exports for the other fruits throughout the first period of the 1980s. For the second period, net trade was completely opposite to the corresponding net trades in the first period. Overall, it can be stated that exports exceeded imports for the period as a whole; it should be noted that human consumption and losses are the only aspects of demand listed in the CAPMAS data utilized (i.e., industrial and other uses are not indicated).

8. Supply of and demand for fruits

As shown in table 4 average annual production for the fruits group as a whole increased from 2,792,390 tons in the first period to about 3,926,630 tons in the second period, an increase of about 1,134,240 tons, or 40.62 per cent. It should be noted that this increase of about 1,134,240 tons

Table 3. Average annual supply and demand of distribution for fresh vegetables between 1980/1981 and 1989/1990*

Commodity and period	Quantity and percentage	Supply			Total available supply (4)	Demand		
		Local production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5 +6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Potatoes								
1980/1981-1984/1985	(Thousands of tons)	1 228.20	--	-102.00	1 126.20	833.68	--	292.52
	(Percentage)	109.06	--	-9.06	100	74.03	--	25.97
1985/1986-1989/1990	(Thousands of tons)	1 699.60	--	-108.68	1 590.92	1 198.32	--	392.60
	(Percentage)	106.83	--	-6.83	100	75.32	--	24.68
1980/1981-1989/1990	(Thousands of tons)	1 463.90	--	-105.34	1 358.56	1 016.01	--	342.55
	(Percentage)	107.75	--	-7.75	100	74.79	--	25.21
Watermelon and other melons								
1980/1981-1984/1985	(Thousands of tons)	1 404.04	--	-14.60	1 389.44	1 249.66	--	139.78
	(Percentage)	101.05	--	-1.05	100	89.94	--	10.06
1985/1986-1989/1990	(Thousands of tons)	1 507.12	--	-13.85	1 493.27	1 342.45	--	150.82
	(Percentage)	100.93	--	-0.93	100	89.90	--	10.10
1980/1981-1989/1990	(Thousands of tons)	1 455.58	--	-14.23	1 441.35	1 296.05	--	145.30
	(Percentage)	100.99	--	-0.99	100	89.92	--	10.08
Other vegetables								
1980/1981-1984/1985	(Thousands of tons)	5 979.70	--	-60.40	5 919.30	5 306.18	--	613.12
	(Percentage)	101.02	--	-1.02	100	89.64	--	10.36
1985/1986-1989/1990	(Thousands of tons)	7 614.12	--	-43.72	7 570.40	6 770.30	--	800.10
	(Percentage)	100.58	--	-0.58	100	89.43	--	10.57
1980/1981-1989/1990	(Thousands of tons)	6 796.91	--	-52.06	6 744.85	6 038.24	--	706.61
	(Percentage)	100.77	--	-0.77	100	89.52	--	10.48
Vegetable group (total)								
1980/1981-1984/1985	(Thousands of tons)	8 611.94	--	-177.00	8 434.94	7 389.52	--	1 045.42
	(Percentage)	102.10	--	-2.10	100	87.61	--	12.39
1985/1986-1989/1990	(Thousands of tons)	10 820.80	--	-166.25	10 654.59	9 311.07	--	1 343.52
	(Percentage)	101.56	--	-1.56	100	87.39	--	12.61
1980/1981-1989/1990	(Thousands of tons)	9 716.39	--	-171.63	9 544.76	8 350.30	--	1 194.46
	(Percentage)	101.80	--	-1.80	100	87.49	--	12.51

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

was attributable to citrus fruits, other fruits, and fresh grapes, at about 39.4 per cent, 40.0 per cent, and 20 per cent, respectively.

Average annual net trade (exports minus imports) increased from 127,130 tons in the first period to about 142,860 tons in the second period, an increase of about 15,730 tons, or 12.37 per cent. It should be mentioned that most of this increase in exports (85 per cent) was attributable to other fruits; 16.21 per cent and -1.21 per cent were attributable to citrus fruits and fresh grapes, respectively.

Table 4. Average annual supply and demand distribution for fruits between 1980/1981 and 1989/1990*

Commodity and period	Quantity and percentage	Supply			Total available supply (4)	Demand		
		Local production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5+6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Citrus								
1980/1981-1984/1985	(Thousands of tons)	1 361.51	--	-135.50	1 226.01	1 093.22	--	132.79
	(Percentage)	111.05	--	-11.05	100	89.17	--	10.83
1985/1986-1989/1990	(Thousands of tons)	1 808.36	--	-138.05	1 670.31	1 481.56	--	188.75
	(Percentage)	108.26	--	-8.26	100	88.70	--	11.30
1980/1981-1989/1990	(Thousands of tons)	1 584.94	--	-136.78	1 448.16	1 287.39	--	160.77
	(Percentage)	109.44	--	-9.44	100	88.90	--	11.10
Fresh grapes								
1980/1981-1984/1985	(Thousands of tons)	339.89	--	-0.31	339.58	305.74	--	33.84
	(Percentage)	100.09	--	-0.09	100	90.04	--	9.96
1985/1986-1989/1990	(Thousands of tons)	566.71	--	-0.12	566.59	509.93	--	56.66
	(Percentage)	100.02	--	-0.02	100	90.00	--	10.00
1980/1981-1989/1990	(Thousands of tons)	453.30	--	-0.22	453.08	407.83	--	45.25
	(Percentage)	100.05	--	-0.05	100	90.01	--	9.99
Other fruits								
1980/1981-1984/1985	(Thousands of tons)	1 090.99	--	8.68	1 099.67	1 008.37	--	91.30
	(Percentage)	99.21	--	0.79	100	91.70	--	8.30
1985/1986-1989/1990	(Thousands of tons)	1 551.56	--	-4.69	1 546.87	1 418.48	--	128.39
	(Percentage)	100.30	--	-0.30	100	91.70	--	8.30
1980/1981-1989/1990	(Thousands of tons)	1 321.27	--	2.00	1 323.27	1 213.42	--	109.85
	(Percentage)	99.85	--	0.15	100	91.70	--	8.30
All fruits (total)								
1980/1981-1984/1985	(Thousands of tons)	2 792.39	--	-127.13	2 665.26	2 407.33	--	257.93
	(Percentage)	104.77	--	-4.77	100	90.32	--	9.68
1985/1986-1989/1990	(Thousands of tons)	3 926.63	--	-142.86	3 783.77	3 409.97	--	373.80
	(Percentage)	103.78	--	-3.78	100	90.12	--	9.88
1980/1981-1989/1990	(Thousands of tons)	3 359.51	--	-135.00	3 224.51	2 908.64	--	315.87
	(Percentage)	104.19	--	-4.19	100	90.20	--	9.80

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

Average annual human consumption of fruits rose from about 2,407,330 tons in the first period to about 3,409,970 tons in the second period, an increase of about 1,002,640 tons, or about 41.65 per cent. Data show that human consumption was mainly responsible for fruit demand (at 90.2 per cent); the remaining 9.8 per cent was considered losses.

The preceding estimates indicate that the self-sufficiency rate for fruits was about 104.77 per cent for the first period and 103.78 per cent for the second, for a combined average of 104.19 per cent for the whole decade. The high aggregate rate was due to the high rate for citrus fruits.

9. Meat, fish and eggs group

This group includes red meat, poultry, fresh fish, and eggs; however, it should be noted that each one of these commodities represents a separate group. They have been placed together here because they are all major sources of animal protein. For red meat, poultry, and fresh fish, human consumption represented the only use (according to the CAPMAS data), while eggs were in demand for both human consumption and other uses. The data for the following protein groups are to be found in table 5.

(a) Red meat

Average annual production of red meat was estimated at 410,000 tons during the first period of the 1980s, rising to about 528,000 tons in the second half of the 1980s, an increase of about 118,000 tons, or 28.78 per cent. The combined annual average for the whole period was estimated at 469,000 tons, or about 77.98 per cent of the total available quantity for consumption.

Average annual net trade (imports minus exports) was estimated at about 125,160 tons in the first period, rising to about 137,440 in the second period, an increase of about 12,280 tons, or 9.81 per cent. Overall, imports provided about 21.83 per cent of the total available quantity for consumption for the 1980s period as a whole.

Average annual human consumption of red meat was estimated at 531,120 tons for the first half of the 1980s, rising to about 671,680 tons in the second half of the decade, an increase of about 140,560 tons, or 26.46 per cent. This indicates that self-sufficiency rates for red meat were an estimated 77.2 per cent, 78.61 per cent and 77.98 per cent for the first period, second period, and entire decade, respectively.

(b) Poultry

As indicated in table 5, average annual poultry production for the first half of the 1980s was estimated at 308,820 tons, increasing in the second half to about 464,820 tons, an increase of about 156,000 tons or 50.51 per cent. The combined annual average for the entire period was estimated at about 386,820 tons, or 88.87 per cent of the total available quantity for consumption over the entire 1980s period.

Average annual net trade (imports minus exports) for poultry was estimated at 67,480 tons in the first period, decreasing to about 28,850 tons in the second period, a drop of about 38,630 tons, or 57.25 per cent. Overall, Egyptian poultry imports constituted about 11.06 per cent of the total available quantity for consumption for the 1980s period as a whole.

Average annual human consumption of poultry was an estimated 373,510 tons for the first period of climbing to about 497,050 tons in the second period—an increase of about 123,540 tons, or 33.08 per cent. For the whole period, average annual human consumption totalled an estimated 435,280 tons, or about 100 per cent of the total quantity available, for consumption.

Table 5. Average annual supply and demand distribution for meat, fish and eggs between 1980/1981 and 1989/1990*

Commodity and period	Quantity and percentage	Supply			Total available supply (4)	Demand		
		Domestic production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5+6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Red meat								
1980/1981-1984/1985	(Thousands of tons)	410.00	-4.04	125.16	531.12	531.12	--	--
	(Percentage)	77.20	-0.76	23.56	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	528.00	6.24	137.44	671.68	671.68	--	--
	(Percentage)	78.61	0.39	20.46	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	469.00	1.10	131.30	601.40	601.40	--	--
	(Percentage)	77.98	0.18	21.83	100	100	--	--
Poultry								
1980/1981-1984/1985	(Thousands of tons)	308.82	-2.79	67.48	373.51	373.51	--	--
	(Percentage)	82.68	-0.75	18.07	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	464.82	3.38	28.85	497.05	497.05	--	--
	(Percentage)	93.51	0.68	5.80	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	386.82	0.30	48.16	435.28	435.28	--	--
	(Percentage)	88.87	0.07	11.06	100	100	--	--
Fresh fish								
1980/1981-1984/1985	(Thousands of tons)	165.86	-1.09	103.16	267.93	267.93	--	--
	(Percentage)	61.90	-0.41	38.50	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	255.31	0.49	111.73	367.53	367.53	--	--
	(Percentage)	69.47	0.13	30.40	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	210.59	-0.30	107.44	317.73	317.73	--	--
	(Percentage)	66.28	-0.10	33.82	100	100	--	--
Eggs								
1980/1981-1984/1985	(Million of eggs)	2 304.20	--	119.70	2 423.90	2 071.01	288.71	64.18
	(Percentage)	95.06	--	4.94	100	85.44	11.91	2.65
1985/1986-1989/1990	(Million of eggs)	3 385.20	--	40.39	3 425.59	2 976.15	365.17	84.27
	(Percentage)	98.82	--	1.18	100	86.88	10.66	2.46
1980/1981-1989/1990	(Million of eggs)	2 844.70	--	80.04	2 924.74	2 523.58	326.94	74.22
	(Percentage)	97.20	--	2.74	100	86.28	11.18	2.54

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

Self-sufficiency rates for poultry meat were estimated to be 82.68 per cent for the first period; this rate increased to about 93.51 per cent in the second period for a combined average of 88.87 per cent for the whole period.

(c) Fresh fish

Average annual production of fresh fish was estimated at 165,860 tons in the first period, rising to about 255,310 tons in the second period—an increase of about 89,450 tons, or 53.93 per

cent. Overall, average annual fish production for the whole period was estimated at 210,590 tons, which represented about 66.28 per cent of the total available quantity for consumption.

Average annual net trade for fresh fish (imports minus exports) was estimated at 103,160 tons for the first period, increasing to about 111,730 tons for the second period—an increase of about 8,570 tons, or 8.3 per cent. It should be noted that Egyptian fish exports increased continuously throughout the 1980s, even though imports exceeded exports by about 107,440 tons, and therefore constituted about 33.82 per cent of the total available quantity for consumption for the 1980s period as a whole.

Average annual human consumption was estimated at 267,930 tons for the first period, rising to about 367,530 tons in the second period, for an increase of about 99,600 tons, or 37.17 per cent. Overall, average annual human consumption of fresh fish for the entire 1980s period was estimated at 317,730 tons. The preceding discussion indicates that self-sufficiency rates for fresh fish were an estimated 61.9, 69.47 and 66.28 per cent of the total available quantity for consumption for the first period, second period, and whole period of the 1980s, respectively.

(d) Eggs

Average annual production of eggs was estimated at 2,304.2 million eggs for the first period, rising to about 3,385.2 million eggs in the second period—an increase of about 1,081 million eggs, or 46.91 per cent. Overall, average annual egg production throughout the 1980s period was estimated to have been 2,844.7 million eggs, or 97.26 per cent of the total available quantity for consumption.

With regard to net trade, average annual Egyptian imports exceeded exports by about 119.7 million eggs in the first half of the 1980s and 40.39 million eggs in the second half, for a combined annual average of 80.04 million eggs for the whole decade. For the 1980s as a whole, average annual net trade (imports minus exports) represented about 2.74 per cent of the total quantity available for consumption; this quantity was distributed as follows: 86.28 per cent for human consumption, 11.18 per cent for industrial uses, and 2.54 per cent for losses.

Self-sufficiency rates for eggs were estimated at 95.06, 98.82 and 97.26 per cent for the first half, second half, and entire decade of the 1980s, respectively; this indicates that the self-sufficiency rates for eggs was higher than those for other sources of animal protein.

10. Miscellaneous food groups

This part deals with the most important commodities in some of the remaining food groups—namely, milk (from the milk and dairy products group), vegetable oil and ghee (from the oils and fats group), and sugar (from the sugar commodities group) (see table 6 for data pertaining to the above).

11. Oils and fats group

This group includes vegetable oil and ghee. It should be noted that the entire available supply of ghee was used for human consumption, as was most of the vegetable oil, though a certain amount of the latter was used in the shortening/ghee industry.

(a) Vegetable oil

As shown in table 6, average annual production of vegetable oil was estimated at 242,700 tons in the first half of the 1980s, rising to about 337,000 tons in the second half, for an increase of about 94,300 tons, or 38.85 per cent between the two periods.

Average annual net trade (imports minus exports) was estimated at 183,820 tons for the first period, but dropped to about 166,530 tons in the second period, a decrease of about 17,290 tons, or about 9.41 per cent. Overall, vegetable oil imports over the 1980s period constituted about 37.72 per cent of the total quantity available for consumption.

Average annual human consumption of vegetable oil was estimated at 271,130 tons for the first period, increasing to about 347,380 tons in the second period, a hike of 76,250 tons, or 28.12 per cent. The available quantity of vegetable oil for consumption was distributed as follows: 66.58 per cent for human consumption and 33.42 per cent for industry. It should be mentioned that the quantity directed to industrial use was approximately equal to the imported quantity, with a negligible amount used for the domestic production of ghee.

Self-sufficiency rates for vegetable oil ranged from 56.98 per cent in the first period to about 67 per cent in the second, for an average of about 62.4 per cent for the whole period.

(b) Ghee

Average annual production of ghee was estimated at 164,820 tons for the first period, increasing to about 166,190 tons in the second period—a hike of about 1,370 tons, or 0.83 per cent.

Egypt's average annual imports of ghee were estimated to be 38,450 tons, with this average decreasing to only about 3,000 tons a year in the second period—a sizeable decrease of about 35,450 tons. This decrease in imports of ghee had an impact on both supply and demand (i.e., total quantity available for consumption as well as average human consumption). Average annual human consumption decreased from 203,240 tons in the first period to about 169,560 tons in the second period—a drop of about 33,680 tons, or 16.57 per cent.

The preceding discussion indicates a trend of decreased Egyptian imports of both vegetable oil and ghee during the 1980s; this trend resulted in increased rates of self-sufficiency for both vegetable oil (67 per cent in the second period against 56.98 per cent in the first period) and ghee (98.01 per cent in the second period against 81.09 per cent in the first period).

Table 6. Average annual supply and demand distribution for miscellaneous food commodities between 1980/1981 and 1989/1990*

Commodity and period	Quantity and percentage	Supply			Total available supply (4)	Demand		
		Domestic production (1)	Stock change (2)	Net trade (3)	(4=1+2+3=5+6+7)	Human consumption (5)	Industry (6)	Losses, seed, feed (7)
Fresh milk								
1980/1981-1984/1985	(Thousands of tons)	2 008.20	--	2.57	2 010.77	2 010.77	--	--
	(Percentage)	99.87	--	0.13	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	2 158.40	--	0.03	2 158.40	2 158.40	--	--
	(Percentage)	100	--	--	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	2 083.30	--	1.30	2 084.60	2 084.60	--	--
	(Percentage)	99.94	--	0.06	100	100	--	--
Vegetable oil								
1980/1981-1984/1985	(Thousands of tons)	242.70	-0.58	183.82	425.94	271.13	154.81	--
	(Percentage)	56.98	-0.14	43.16	100	63.65	036.35	--
1985/1986-1989/1990	(Thousands of tons)	337.00	-0.53	166.53	503.00	347.38	155.62	--
	(Percentage)	67.00	-0.11	33.11	100	69.06	030.94	--
1980/1981-1989/1990	(Thousands of tons)	289.85	-0.56	175.18	464.47	309.25	155.22	--
	(Percentage)	62.40	-0.12	37.72	100	66.58	033.42	--
Ghee								
1980/1981-1984/1985	(Thousands of tons)	164.82	-0.03	38.45	203.24	203.24	--	--
	(Percentage)	81.09	-0.01	18.92	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	166.19	0.37	3.00	169.56	169.56	--	--
	(Percentage)	98.01	0.22	1.77	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	165.50	0.17	20.73	186.40	186.40	--	--
	(Percentage)	88.79	0.09	11.12	100	100	--	--
Refined sugar								
1980/1981-1984/1985	(Thousands of tons)	699.47	28.40	780.35	1 508.22	1 508.22	--	--
	(Percentage)	46.38	1.88	51.74	100	100	--	--
1985/1986-1989/1990	(Thousands of tons)	871.56	-0.50	666.04	1 537.55	1 537.55	--	--
	(Percentage)	56.68	--	43.32	100	100	--	--
1980/1981-1989/1990	(Thousands of tons)	785.52	14.18	723.19	1 522.89	1 522.89	--	--
	(Percentage)	51.58	0.93	47.49	100	100	--	--

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

* All figures represent average annual quantities.

(c) Refined sugar

As indicated in table 6, average annual production of sugar was estimated at 699,470 tons for the first period, rising to about 871,560 tons a year in the second period, an increase of about 172,090 tons, or about 24.6 per cent per year, on average. It should be noted that the increased domestic production was matched by a corresponding decrease in average annual Egyptian imports of sugar; average annual imports fell from 780,350 tons in the first period to about 666,040 tons in the second—a decrease of about 114,310 tons, or about 14.65 per cent.

Average annual human consumption of sugar totalled about 1,508,220 tons in the first period and about 1,537,550 tons in the second, indicating an increase of about 29,330 tons, or 1.94 per cent. In other words, policies implemented during the 1980s led to increased self-sufficiency rates for sugar—from about 46.38 per cent in the first period to about 56.68 per cent in the second period, meaning that domestic sugar production provided about 51.58 per cent of the total quantity available for consumption for the period as a whole.

(d) Fresh milk

As indicated in table 6, average annual production of fresh milk was estimated at 2,008,200 tons in the first period, rising to about 2,158,400 tons in the second period—an increase of about 150,200 tons a year, or about 7.48 per cent.

Average annual milk imports exceeded exports for the first half of the 1980s by about 2,570 tons, but this difference all but disappeared in the second period, where net average annual imports were equal to not more than 30 tons. For the 1980s as a whole, imports exceeded exports only very slightly (by about 1,300 tons), and thus constituted only about 0.06 per cent of the total quantity available for consumption.

Average annual human consumption was estimated at 2,010,770 tons for the first period, rising to about 2,158,400 tons in the second period, for an increase of about 147,000 tons, or about 7.34 per cent. It can be said that the locally produced quantity of fresh milk was approximately equal to human consumption of this commodity, which translates into a 100 per cent self-sufficiency rate.

C. Major changes in Egypt's food situation in the 1980s

This section provides a more concise summary of the major changes in domestic production, net foreign trade, human consumption, and rates of self-sufficiency in Egypt over the same two periods covered in the previous sections (i.e., 1980/1981 to 1984/1985 and 1985/1986 to 1989/1990). Changes are traced for the most important food commodities in order to determine and draw a clear picture of Egypt's food situation (see table 7 for a detailed account of these changes).

1. Domestic production

Domestic production showed high rates of increase for wheat (55 per cent), fresh fish (53.93 per cent), poultry (50.51 per cent), eggs (46.91 per cent), and vegetable oil (38.85 per cent). Commodities which showed a moderate increase in domestic production include white rice (9.94 per cent), fresh milk (7.48 per cent) and ghee (0.83 per cent).

2. Foreign trade

Major commodities for which imports increased from the first to the second period were wheat (21.09 per cent), maize (12.57 per cent), red meat (9.81 per cent), and fresh fish (8.31 per cent). Commodities which showed a decrease in imports include fresh milk (98.83 per cent), ghee

(92.2 per cent), eggs (66.26 per cent), poultry (57.25 per cent), sugar (14.15 per cent), imported wheat flour (13.76 per cent) and vegetable oil (9.41 per cent). The percentage of exports increased from the first to the second period for rice (14.01 per cent), potatoes (6.55 per cent) and citrus fruits (1.88 per cent).

Table 7. Major changes in domestic production, net foreign trade and human consumption, and rates of self-sufficiency for major food groups and commodities between the periods 1980/1981 to 1984/1985 and 1985/1986 to 1989/1990

Food group/commodity	Change in production	Change in exports or imports	change in human consumption	Self-sufficiency rate		
	(Percentage)			First period (1980/1981-1984/1985)	Second period (1985/1986-1989/1990)	Change (Percentage)
Food grains						
Wheat	55.00	+21.09 (imp.)	+32.90	30.59	35.70	5.11
Imported wheat flour	--	-13.76 (imp.)	-12.42	0.00	0.00	0.00
Maize	13.56	+12.57 (imp.)	+15.05	70.13	70.37	0.24
White rice	9.94	+14.01 (exp.)	+7.68	104.16	104.63	0.47
Total (average)	24.07	+12.27 (imp.)	+19.64	49.11	51.33	2.22
Dry legumes						
Broad beans	38.43	..	+27.33	90.35	97.65	7.30
Lentils	73.87	-18.55 (imp.)	-13.42	11.85	22.89	11.04
Other legumes	13.10	..	+14.31	61.29	69.32	8.03
Total (average)	34.70	-46.11 (imp.)	+17.11	78.75	88.67	9.92
Vegetables						
Potatoes	38.38	+6.55 (exp.)	+47.74	109.06	106.83	-2.23
Melon and watermelon	7.34	-5.14 (exp.)	+7.43	101.05	100.93	-0.12
Other vegetables	27.33	-27.62 (exp)	+27.59	101.02	100.58	-0.44
Total (average)	25.65	-06.07 (exp.)	+26.00	102.10	101.56	-0.54
Fruits						
Citrus	32.82	+1.88 (exp.)	+35.52	111.05	108.26	-2.79
Fresh grapes	66.73	-61.29 (exp.)	+66.78	100.09	100.02	-0.07
Other fruits	42.22	..	+40.67	99.21	100.30	1.09
Total (average)	40.62	+12.37 (exp.)	+41.65	104.77	103.78	-0.99
Red meat	28.78	+9.81 (imp.)	+26.46	77.20	78.61	1.41
Poultry	50.51	-57.25 (imp.)	+33.08	82.68	93.51	10.83
Fresh fish	53.93	+8.31 (imp.)	+37.17	61.90	69.47	7.57
Eggs	46.91	-66.26 (imp.)	+43.71	95.06	98.82	3.76
Milk	7.48	-98.83 (imp.)	+7.34	99.87	100.00	0.13
Vegetable oil	38.85	-9.41 (imp.)	+28.12	56.98	67.00	10.02
Ghee	0.83	-92.20 (imp.)	-16.57	81.09	98.01	16.92
Refined sugar	24.60	-14.15 (imp.)	+1.94	46.38	56.68	10.30

Source: Computed from tables 1-6 of the present study.

3. Human consumption

The following commodities showed a relatively large increase in human consumption rates between the first and second periods: potatoes (47.74 per cent), eggs (43.71 per cent), fresh fish (37.17 per cent), citrus fruits (35.52 per cent), poultry (33.08 per cent), wheat (32.92 per cent), and vegetable oil (28.12 per cent). Relatively lower rates of increase were observed for white rice (7.68 per cent) and fresh milk (7.34 per cent). Human consumption actually decreased for ghee (-16.75 per cent), lentils (-13.42 per cent) and wheat flour (-12.42 per cent).

4. Self-sufficiency rates

The following commodities showed rates reflecting less than 50 per cent self-sufficiency for the entire 1980s period: lentils (17.07 per cent) and wheat (33.5 per cent). Self-sufficiency ranged between one half and two thirds in the case of sugar (51.58 per cent), vegetable oil (62.4 per cent), and fresh fish (66.26 per cent).

Those commodities for which there was some improvement in self-sufficiency rates between the two periods included ghee (16.92 per cent), lentils (11.04 per cent), poultry (10.83 per cent), refined sugar (10.3 per cent), vegetable oil (10.02 per cent), other legumes (8.03 per cent), fresh fish (7.57 per cent), broad beans (7.3 per cent), and wheat (5.11 per cent). On the other hand, self-sufficiency rates decreased slightly in the second period in the case of certain fruits and vegetables: citrus fruits (-2.79 per cent), potatoes (-2.23 per cent), and other vegetables (-0.44 per cent); it is important to note that self-sufficiency for fruits and vegetables still exceeded 100 per cent.

D. Annual growth rates for major variables

Regression analysis is used here to estimate the time trend equation in the simple form described in the introduction to this chapter. These estimated equations are used in computing annual growth rates for domestic production, net foreign trade, available quantities for consumption, and human consumption (see table 8 for figures related to this section).

1. Domestic production

As shown in table 8, the following commodities achieved a high average annual growth rate between 1980/1981 and 1989/1990: poultry (13.16 per cent), lentils (12.28 per cent), fresh fish (8.42 per cent), wheat (8.39 per cent), broad beans (7.45 per cent), fresh eggs (7.27 per cent), and vegetable oil (6.83 per cent). It should be noted that these constitute the same set of commodities which showed the highest rate of relative change in domestic production between the first and second periods of the 1980s. The following commodities showed low average annual growth rates for the decade: milk (1.5 per cent), white rice (2.07 per cent), and other legumes as defined previously (2.52 per cent). Ghee was the only commodity which showed a negative average annual growth rate (-0.003 per cent).

2. Net foreign trade

The following commodities achieved a positive average annual growth rate for net trade in terms of imports minus exports: wheat (4.16 per cent), fresh fish (3.42 per cent), red meat (2.66 per cent), and maize (1.65 per cent). In terms of exports minus imports, the following commodities showed a positive average annual growth rate for net trade: citrus fruits (2.26 per cent) and potatoes (0.48 per cent). Other commodities showed a negative annual growth rate for net trade in terms of either imports minus exports or exports minus imports. The first case means a reduction in imports for the decade, and includes the following commodities: ghee (-75.16 per cent), eggs (-34.03 per cent), poultry (-25.78 per cent), lentils (-5.12 per cent), vegetable oil (-3.18 per cent), refined sugar (-2.37 per cent), and wheat flour (-2.14 per cent). The second case means a reduction in exports for the same period, and includes the following commodities: other vegetables (-8.96 per cent), melons and watermelon (-1.74 per cent), and white rice (-1.16 per cent) (see table 8).

3. Available quantities for consumption

Major commodities which showed high average annual growth rates in terms of quantities available for consumption include poultry (9.42 per cent), fresh fish (6.88 per cent), citrus fruits (6.61 per cent), egg (6.48 per cent), broad beans (6.05 per cent), red meat (5.88 per cent), and wheat (5.22 per cent); this was mainly due to the increased annual growth rate of production for such commodities. A negative average annual growth rate was observed for ghee (-3.92 per cent), lentils (-2.61 per cent) and imported wheat flour (-2.35 per cent). This decrease in available quantities was mainly due to reductions in imports.

4. Human consumption

Negligible or zero differences were observed between average annual growth rate in human consumption and the corresponding rate for available quantity for consumption for most commodities except vegetable oil. The regression in the annual growth rate in the available quantity of human food (independent variable) in simple linear form for all commodities (aggregate) showed:

$$Y_i = 0.033 + 1.016\,X_i \quad R^2 = 0.98, \quad F = 1223$$
$$(34.97)$$

Where Y_i and X_i are as defined before and values in parentheses are calculated for the regression coefficient.

The regression coefficient is the elasticity between available quantity for consumption and actual human consumption of the same commodity. According to the estimated elasticity, an increase of 100 per cent in available quantity would result in an increase of about 101.6 per cent in human consumption. This increase would mainly be due to a trend of decreased demand for other uses (industry, animal feed, seed, and losses) and a trend of increasing human consumption.

Table 8. Average annual growth rates for domestic production, net foreign trade, human consumption and quantities available for consumption between 1980/1981 and 1989/1990

Food commodity	Annual growth rates for major variables				Range for R^2	Level of significance for equations
	Domestic production (a)	Net foreign trade (b)	Available quantities (c)	Human consumption (d)		
Wheat	8.39	4.16	5.22	5.24	0.71-0.89	All equations at 1 per cent
Imported wheat flour	--	-2.14	-2.35	-2.33	0.14-0.15	All equations are insignificant
Maize	3.66	1.65	3.40	3.78	0.08-0.77	All equations at 1 per cent except(b)
White rice	2.07	-1.16[a]	2.12	1.74	0.00-0.03	All equations are insignificant
Broad beans	7.45	-54.78[b]	6.05	5.92	0.52-0.86	All equations at 1 per cent
Lentils	12.28	-5.12	-2.61	-3.25	0.03-0.64	All equations are insignificant except(a)
Other legumes	2.52	--	2.49	2.75	0.36-0.39	All equations are insignificant except(d)
Potatoes	6.02	0.48[a]	6.51	6.90	0.05-0.80	All equations at 1 per cent except(b)
Melons and watermelons	0.69	-1.74[a]	0.71	0.69	0.02-0.04	All equations are insignificant
Other vegetables	3.84	-8.96[a]	3.94	3.87	0.43-0.66	All equations at 1 per cent
Citrus	6.22	2.26[a]	6.61	6.46	0.15-0.75	All equations at 1 per cent except(b)
Fresh grapes	10.31	-54.59[a]	10.33	10.31	0.59-0.99	All equations at 1 per cent
Other fruits	7.30	-111.32[b]	7.10	7.10	0.48-0.92	All equations at 1 per cent
Red meat	6.63	2.66	5.88	5.88	0.14-0.68	All equations at 1 per cent except(b)
Poultry	13.16	-25.78	9.42	9.42	0.46-0.56	All equations at 1 per cent, 5 per cent
Fresh fish	8.42	3.42	6.88	6.88	0.31-0.92	All equations at 1 per cent except(b)
Fresh eggs	7.27	-34.03	6.48	6.86	0.56-0.78	All equations at 1 per cent
Fresh milk	1.50	-30.77[b]	1.48	1.48	0.68-0.96	All equations at 1 per cent
Vegetable oil	6.83	-3.18	3.51	5.48	0.02-0.89	All equations are insignificant except(a)
Ghee	-0.003	-75.16	-3.92	-3.92	0.00-0.45	All equations at 1 per cent except(a)
Refined sugar	4.35	-2.37	0.93	0.93	0.06-0.75	All equations are insignificant except(a)

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

a. Average annual growth rate (exports minus imports).
b. Actual values are used, and the coefficient equals $\frac{B}{Y} \times 100$.

E. Per capita consumption and growth rates for major food commodities in Egypt

Annual average per capita consumption of major food commodities in Egypt is derived by dividing the quantity of the commodity allotted for average yearly human consumption by Egypt's average population over the (first, second or entire) period of the 1980s.

This section presents and discusses average annual per capita consumption of major food commodities for 1981 to 1985, for 1986 to 1990, and for the entire 1980s period. In addition, average annual per capita growth rates for major food commodities consumption in Egypt are also computed and presented for the whole 1980s period (see table 9 for details).

Average yearly per capita consumption of wheat was estimated at about 137.1 kilograms (kg) for the first half of the 1980s, rising to about 156.1 kg in the second half, for an increase of about 19 kg, or 13.86 per cent. For the whole 1980s period, the average annual growth rate for per capita wheat consumption was an estimated 2.43 per cent.

Average yearly per capita consumption of imported wheat flour was estimated at 33.76 kg for the first period, but decreased to about 26.13 kg in the second period, a drop of about 7.63 kg, or 22.6 per cent. For the whole period, the average yearly growth rate for per capita consumption of imported wheat flour was negative—estimated at about -5 per cent.

For maize, yearly per capita consumption was an estimated 73.75 kg for the first period, rising to about 74.13 kg in the second period, an increase of about 0.38 kg, or 0.52 per cent. For the whole period, the average yearly growth rate for per capita maize consumption was about 1 per cent.

Average yearly per capita consumption of white rice was estimated at 32.92 kg for the first period, but fell to about 30.85 kg in the second period—a decrease of about 2.07 kg, or 6.29 per cent. For the whole period, average yearly (negative) growth rate for per capita consumption of white rice was an estimated -1 per cent.

Average yearly per capita consumption of grains (i.e., the grains group as a whole) was estimated at 277.53 kg for the first period, increasing to about 287.21 kg in the second period—an increase of about 9.68 kg, or 3.49 per cent. It should be mentioned that the high per capita consumption of grains is mainly due to the high per capita consumption of both wheat and maize. At least this appears to be the case from the data provided; however, the estimates for maize and wheat (which cover human consumption and animal feed), appear disproportionately high, implying the need for further study to investigate such shares in real world situations.

Average yearly per capita consumption of dry legumes (as a group) was estimated at 7.71 kg, increasing to about 7.85 kg in the second period—a hike of about 0.14 kg, or 1.82 per cent. Average yearly per capita consumption of vegetables (as a group) was estimated at 169.91 kg during the first period, rising to about 187.59 kg in the second period—an increase of about 17.68 kg, or 10.41 per cent.

Table 9. Average annual per capita consumption (kilograms) and average annual growth rates (percentage) for major food commodities over the period 1981 to 1990

Commodity	Period	Per capita annual consumption (kilograms)	Average annual growth rate (Percentage)
Wheat	1981-1985	137.10	
	1986-1990	156.10	
	1981-1990	146.60	2.43%
Wheat flour	1981-1985	33.76	
	1986-1990	26.13	
	1981-1990	29.95	-5%
Maize	1981-1985	73.75	
	1986-1990	74.13	
	1981-1990	73.94	1%
White rice	1981-1985	32.92	
	1986-1990	30.85	
	1981-1990	31.89	-1%
Broad beans	1981-1985	4.93	
	1986-1990	5.47	
	1981-1990	5.20	3.1%
Lentils	1981-1985	1.54	
	1986-1990	1.14	
	1981-1990	1.34	-5.8%
Other legumes	1981-1985	1.24	
	1986-1990	1.24	
	1981-1990	1.24	0.01%
Potatoes	1981-1985	19.14	
	1986-1990	24.07	
	1981-1990	21.61	4%
Other vegetables	1981-1985	122.01	
	1986-1990	136.43	
	1981-1990	129.22	1.1%
Melons and watermelon	1981-1985	28.76	
	1986-1990	27.09	
	1981-1990	27.93	-2%
Citrus	1981-1985	25.12	
	1986-1990	29.67	
	1981-1990	27.40	3.6%
Fresh grapes	1981-1985	7.02	
	1986-1990	10.20	
	1981-1990	8.61	7.3%
Other fruits	1981-1985	23.18	
	1986-1990	28.38	
	1981-1990	25.78	4.2%
Red meat	1981-1985	12.14	
	1986-1990	13.51	
	1981-1990	12.83	3%
Poultry	1981-1985	8.49	
	1986-1990	10.02	
	1981-1990	9.26	6.4%
Fresh fish	1981-1985	6.15	
	1986-1990	7.37	
	1981-1990	6.76	4%
Eggs (number of eggs)	1981-1985	47.50	
	1986-1990	59.89	
	1981-1990	53.70	3.9%
Fresh milk	1981-1985	46.28	
	1986-1990	43.40	
	1981-1990	44.84	-1.3%
Vegetable oil	1981-1985	6.19	
	1986-1990	7.01	
	1981-1990	6.60	2.6%
Ghee	1981-1985	4.70	
	1986-1990	3.42	
	1981-1990	4.06	-6.4%
Sugar	1981-1985	34.62	
	1986-1990	30.99	
	1981-1990	32.81	-1.8%

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

Average yearly per capita consumption of fruits as a group was estimated at 55.32 kg for the first period, rising to about 68.25 kg in the second period, an increase of about 12.93 kg, or 23.37 per cent. Among the food groups studied, fruits showed the highest percentage of increase in average yearly per capita consumption over the 1980s period.

With respect to red meat, average yearly per capita consumption was estimated at 12.14 kg for the first half of the 1980s, increasing in the second period to about 13.51 kg—an increase of

about 1.37 kg, or 11.28 per cent. The average yearly growth rate for the per capita consumption of red meat was estimated at 3 per cent for the whole 1980s period.

Average yearly per capita consumption of poultry was estimated at 8.49 kg for the first period; this figure increased to about 10.02 kg in the second period, rising by about 1.53 kg, or 18.02 per cent. The average annual growth rate for per capita consumption of red meat was an estimated 6.4 per cent for the whole period.

For fresh fish, per capita consumption was an estimated 6.15 kg for the first period, increasing to about 7.37 kg in the second half of the 1980s—an increase of about 1.22 kg, or about 19.84 per cent. The average yearly growth rate for per capita consumption of fresh fish was estimated at 4 per cent for the whole period.

For eggs, average yearly per capita consumption was estimated at 47.5 eggs for the first period, rising to about 59.9 eggs in the second period—an increase of about 12.4 eggs, or 26.08 per cent. The average yearly growth rate for per capita consumption of eggs was estimated at 3.9 per cent for the whole 1980s period.

Average yearly per capita consumption of fresh milk was estimated at 46.28 kg for the first period but decreased to about 43.4 kg in the second period, a drop of about 2.88 kg, or 6.22 per cent. For the whole period, the average yearly (negative) growth rate for per capita consumption of milk was estimated at about -1.3 per cent.

For vegetable oil, average annual per capita consumption was an estimated 6.19 kg for the first period, rising to about 7.01 kg during the second period—an increase of about 0.82 kg, or 13.25 per cent. The average yearly growth rate for per capita consumption of vegetable oil was estimated at 2.6 per cent for the whole period.

For ghee, average yearly per capita consumption was estimated at 4.7 kg for the first half of the 1980s, decreasing to about 3.42 kg—a drop of about 1.28 kg, or 27.23 per cent. The average yearly (negative) growth rate for per capita consumption of ghee was estimated at -6.4 per cent for the whole period.

Average yearly per capita consumption of sugar was estimated at 34.62 kg for the first period, decreasing to about 30.99 kg in the second half of the 1980s, falling about 3.63 kg, or 10.48 per cent. The average annual (negative) growth rate for per capita consumption of sugar was estimated at -1.8 per cent for the whole period.

The data above indicate that the following commodities were characterized by high and positive average annual growth rates in per capita consumption: poultry (6.4 per cent), other fruits (4.2 per cent), potatoes (4 per cent), fresh fish (4 per cent), eggs (3.9 per cent), citrus fruits (3.6 per cent), broad beans (3.1 per cent) and red meat (3 per cent). A negative annual growth rate was observed for ghee (-6.4 per cent), lentils (-5.8 per cent), wheat flour (-5 per cent), sugar (-1.8 per cent), milk (-1.3 per cent) and white rice (-1 per cent). (All of these conclusions relate to average annual growth over the whole period of the 1980s.)

II. FOOD CONSUMPTION POLICIES IN EGYPT IN THE 1980s

This chapter discusses five dimensions or aspects of government policies in Egypt related to food consumption during the 10-year period covered by this study. The first dimension relates to changes and variations in food rationing over time, according to type of location (urban or rural) for major commodities (vegetable oil, sugar and tea) and supplementary commodities (rice, broad beans and lentils). Developments and variations in subsidy for such commodities at the per capita level are also discussed.

The second dimension concerns the policy of determining the rationed quantities of major food commodities for each governorate; per capita rations for each governorate are also discussed. These data should provide a clearer picture of the disparities among governorates.

The third dimension involves pricing policies over the 1980s period; the present study includes a comparison between consumer price and cost per ton—with subsidy per ton making up the difference between consumer price and cost per ton for the various commodities discussed. For this dimension, 18 locally produced and imported commodities have been analysed for two periods of the 1980s—namely, 1981 to 1985 and 1986 to 1990 (though in some cases the period is further divided). The main objective here is to understand the main aspects of and variations in pricing policy and food subsidy in the second period compared with the first period.

The fourth dimension relates to the subsidy system for food commodities in Egypt. Developments in the size (i.e., monetary amount) of subsidy for major food commodities and groups over the 1960s, 1970s and 1980s period are discussed. Emphasis is given to the 1980s period, which is analysed in more detail in order to identify and evaluate the major changes in subsidization over this period—including the elimination of subsidy for some commodities, reductions in subsidy for another set of commodities, and an increase in subsidy for a third group of commodities.

Finally, the fifth dimension deals with food aid over the 1980s. Two sources of food aid are identified: (a) European and other countries; and (b) organizations including the World Food Programme (WFP), Catholic Relief Services, and CARE. Within this dimension, relative importance of donors in terms of distribution rates is studied for the whole period of the 1980s. Data for this section were mainly obtained from the Ministry of Supply and Internal Trade, as well as from some recent scientific studies carried out on food consumption in Egypt.

A. Food rationing and subsidies

1. Trends in food rationing by geographic region

The rationing and subsidization of vegetable oil, sugar, and tea are traced over the period of the 1980s by type of area (see table 10). Two types of subsidy existed for these commodities—i.e., total and partial. Each type of subsidy involves a different per capita released quantity and a different price per unit.

Table 10. Developments in monthly per capita rations of commodities, prices by type of subsidy, and costs in urban and rural areas of Egypt between 1980 and 1990

Period	Commodity	Type of subsidy	Price (LE*/kilogram)		Urban areas					Rural areas				
			Ration price	Consumer price	Quantity per person (kilograms)	Cost at ration card price (LE)	Cost at consumer price (LE)	Subsidy per person (LE)	Subsidy to cost at consumer price (percentage)	Quantity per person (kilograms)	Cost at ration card price (LE)	Cost at consumer price (LE)	Subsidy per person (LE)	Subsidy to cost at consumer price (percentage)
1980-1986	Oil	Total	0.10	0.30	0.30	0.030	0.090	0.060	66.67	0.15	0.015	0.045	0.030	66.67
		Partial	0.30	0.30	0.10	0.030	0.030	--	--	0.15	0.045	0.045	--	--
	Sugar	Total	0.10	0.30	0.75	0.075	0.225	0.150	66.67	0.75	0.075	0.225	0.150	66.67
		Partial	0.30	0.30	0.75	0.225	0.225	0.000	00.00	0.75	0.225	0.225	--	--
	Tea	Total	1.375	6.00	0.04	0.055	0.240	0.185	77.08	0.04	0.055	0.240	0.185	77.08
		Partial	2.625	6.00	0.04	0.105	0.240	0.135	56.25	0.04	0.105	0.240	0.135	56.25
1987-1988	Oil	Total	0.10	0.80	0.30	0.030	0.240	0.210	87.50	0.15	0.015	0.120	0.105	87.50
		Partial	0.30	0.80	0.10	0.030	0.080	0.050	62.50	0.15	0.045	0.120	0.075	62.50
	Sugar	Total	0.10	0.70	0.75	0.075	0.525	0.450	85.71	0.75	0.075	0.525	0.450	85.71
		Partial	0.30	0.70	0.75	0.225	0.525	0.300	57.14	0.75	0.225	0.525	0.300	57.14
	Tea	Total	1.375	8.00	0.04	0.055	0.320	0.265	82.81	0.04	0.055	0.320	0.265	82.81
		Partial	2.625	8.00	0.04	0.105	0.320	0.215	67.19	0.04	0.105	0.320	0.215	67.19
1989-1990	Oil	Total	0.10	2.10	0.30	0.030	0.630	0.600	95.24	0.15	0.015	0.315	0.300	95.24
		Partial	0.30	2.10	0.10	0.030	0.210	0.180	85.71	0.15	0.045	0.315	0.270	85.71
	Sugar	Total	0.10	1.30	0.75	0.075	0.975	0.900	92.31	0.75	0.075	0.975	0.900	92.31
		Partial	0.30	1.30	0.75	0.225	0.975	0.750	76.92	0.75	0.225	0.975	0.750	76.92
	Tea	Partial	2.625	12.00	0.08	0.210	0.960	0.750	78.13	0.08	0.210	0.960	0.750	78.13

Source: Compiled and computed from records of the Egyptian Ministry of Supply and Internal Trade.

* LE = Egyptian pounds.

(a) Vegetable Oil

Subsidized per capita rations of vegetable oil for the whole 1980s period totalled an estimated 0.4 kg/month in urban areas; of this quantity, 75 per cent totally subsidized and 25 per cent partially subsidized. In rural areas, the same rations amounted to only about 0.3 kg/month, and only 50 per cent was covered by total subsidy. The subsidized price for vegetable oil was constant in both urban and rural areas over the 1980s period. The total monthly cost of vegetable oil equaled 0.06 Egyptian pounds (LE) per person for those in both areas—i.e., disparities in quantities and percentages of total and partial subsidy resulted in equal costs per person, regardless of area.

Subsidy per person for vegetable oil in urban areas increased from LE 0.06/month during the first period (1980 to 1986) to LE 0.26/month in the period 1987 to 1988, and to about LE 0.78/month in the period 1989 to 1990—a 13-fold increase over the 1980s period. In rural areas, subsidy per person increased from LE 0.03/month in the period 1980 to 1986, to about LE 0.18/month in the period 1987 to 1988, and to about LE 0.57/month in the 1989 to 1990 period—about a 19-fold increase over the 1980s.

(b) Sugar

Subsidized per capita rations of sugar were an estimated 1.5 kg/month, and remained constant throughout the 1980s, with no differences between urban and rural areas. Partially and totally subsidized sugar prices also remained constant over the 1980s period, so the cost of sugar per person remained at LE 0.30/month for the same period in both urban and rural areas. Continuous increases in consumer price in the 1980s resulted in an increase in a subsidy per person in both areas, from LE 0.15/month in the 1980 to 1986 period to about LE 1.65 per month during the 1989 to 1990 period—an 11-fold increase over the whole period.

(c) Tea

Partial and total subsidy systems continued from 1980 to 1988. In the 1989 to 1990 period, total subsidy was eliminated and only partial subsidy was retained. For both urban and rural areas, per capita rations of subsidized tea remained constant throughout the 1980s, and were estimated at about 80 grams/month. Subsidy per person more than doubled from LE 0.32 per month in 1980 to 1986 to about LE 0.75/month in the 1989 to 1990 period—an increase of 2.34 times over the 1980s.

2. Changes in per capita subsidy for rationed commodities

Table 10 indicates that per capita subsidy in urban areas for the rationed commodities (vegetable oil, sugar and tea) totalled about LE 0.53/month in the period 1980 to 1986, increasing to about LE 1.49/month in the 1987 to 1988 period, and to about LE 3.18/month in the 1989 to 1990 period—i.e, a sixfold increase over the 1980s period.

For rural areas, per capita subsidy for the rationed commodities (vegetable oil, sugar and tea) totalled about LE 0.5/month in the period 1980 to 1986, increased to about LE 1.41/month in the 1987 to 1988 period, and to about LE 2.97/month in the 1989 to 1990 period—an almost sixfold

(5.94 times) increase from the beginning to the end of the 1980s. Differences between urban and rural per capita subsidy were mainly due to disparities in per capita subsidized rations of vegetable oil only.

It should be mentioned that rationing and subsidies covered on an irregular basis, commodities such as soap, household cleaners, ghee, white rice, and lentils, though per capita rations of these commodities were different for urban and rural areas; furthermore, for both rural and urban areas, per capita rations of these commodities changed from the first to the second half of the 1980s, and were completely eliminated by 1989 in both areas.

A field survey conducted by Alderman and Braun in 1981/1982, covering urban and rural areas in Egypt (1984), is considered one of the most important studies of its kind in this area. A list of main basic and supplementary subsidized rations distributed during the field survey period (i.e., sugar, tea, vegetable oil, rice, broad beans, and lentils) are presented in table 11.

Table 11. Average monthly per capita distribution of major rationed commodities in 1981/1982, by source and type of area

Area and commodity	Basic rations		Supplementary rations		Other sources		Total	
	(grams/month)	(percentage)	(grams/month)	(percentage)	(grams/month)	(percentage)	(grams/month)	(percentage)
Urban areas								
Sugar	712	34.03	683	32.65	697	33.32	2 092	100
Vegetable oil	364	55.07	85	12.86	212	32.07	661	100
Tea	38	31.40	37	30.58	46	38.02	121	100
Rice	788	36.10	391	17.91	1 004	45.99	2 183	100
Broad beans	66	23.91	--	--	210	76.09	276	100
Lentils	22	14.86	--	--	126	85.14	148	100
Rural areas								
Sugar	687	35.07	662	33.79	610	31.14	1 959	100
Vegetable oil	175	36.46	120	25.00	185	38.54	480	100
Tea	37	33.33	35	31.53	39	35.14	111	100
Rice	388	17.45	98	4.41	1 738	78.15	2 224	100
Broad beans	85	31.48	--	--	185	68.52	270	100
Lentils	86	28.76	--	--	213	71.24	299	100

Source: Compiled and computed from: H. Alderman and J.V. Braun, "The effects of the Egyptian food ration and subsidy system on income distribution and consumption", Research Report No. 45 (Washington, D.C., International Food Policy Research Institute), July 1984.

The results of the Alderman and Braun study indicated some differences in the quantities of these rationed commodities in both rural and urban areas from the quantities mentioned in the preceding discussion. This may be due to the fact that some of the surveyed households failed to obtain their rations. Averages for wheat in the sample seemed to be lower than they should have been (however, the differences were very slight). The combined basic and supplementary monthly rations of sugar obtained (per capita) in urban and rural areas were estimated at 1.395 kg, and 1.349 kg respectively, constituting 93 and 90 per cent (for basic and supplementary quantities, respectively) of the corresponding estimates from the preceding discussion (i.e., 1.5 kg for each). In the case of vegetable oil, basic and supplementary per capita monthly rations obtained in urban

and rural areas totalled an estimated 0.449 kg and 0.295 kg, respectively, constituting 112.25 and 98.33 per cent, respectively, of estimates for the same basic and supplementary rations in the preceding discussion. With respect to tea, basic and supplementary per capita monthly rations obtained in urban and rural areas were estimated by 75 grams and 72 grams, respectively, constituting 93.75 and 90 per cent, respectively, of estimates for the same basic and supplementary rations in the preceding discussion.

Alderman and Braun (1984) stated that rice, broad beans and lentils were distributed regularly according to the rationing system at the beginning of the 1980s, and irregularly by the end of the 1980s. They also related that at least 50 per cent of the requirements from these commodities was provided by sources other than rations in both urban and in rural areas. For sugar, tea and vegetable oil, on the other hand, rations covered about two thirds of per capita requirements (i.e., one third was obtained from other sources).

Alderman and Braun (1984) also discussed the differences and variations between the cooperative and free prices for the major rationed commodities in the various areas of Egypt (see table 12). For urban areas as a group, the average free price constituted 111.14 per cent of the cooperative price for tea, and 133.88, 136.1, 144.64, 166.41, and 207.69 per cent for sugar, vegetable oil, rice, lentils and broad beans, respectively. The average free price in rural areas (as a group) constituted 118.23 per cent of the cooperative price for tea, and 190, 147.45, 146.67, 196.77, and 171.43 per cent for sugar, vegetable oil, rice, lentils and broad beans, respectively, the ratio of free prices to cooperative prices was higher in rural areas than in urban areas for the same commodities, except in the case of broad beans, because of the importance of this commodity in urban areas.

Table 12. Average cooperative and free prices for major rationed commodities in the urban and rural areas of various regions in Egypt in 1981/1982

(Egyptian pounds/kilogram)

Area and commodity	Cairo		Alexandria		Lower Egypt		Upper Egypt	
	Cooperative price	Free price	Cooperative price	Free price	Cooperative price	Free price	Cooperative price	Free price
Urban areas								
Sugar	31	37	30	32	30	41	30	52
Vegetable oil	34	50	33	34	33	51	33	46
Tea	506	598	560	515	451	514	503	523
Rice	14	18	14	17	14	26	14	20
Broad beans	19	39	15	31	18	33	13	32
Lentils	34	62	34	40	30	63	33	53
Rural areas								
Sugar					31	60	29	54
Vegetable oil					32	49	27	38
Tea					384	515	477	503
Rice					14	25	16	19
Broad beans					18	37	24	35
Lentils					26	66	36	56

Source: Compiled and computed from Central Agency for Public Mobilisation and Statistics, Bulletin of Production, Foreign Trade and Consumption for Some Commodities up to 1990/1991, Reference No. 93-14100-90, October 1992 (in Arabic).

3. Per capita rations

The Ministry of Supply and Internal Trade was (and still is) the main body responsible for determining the rations of major food commodities. Food rationing as a system varied according to geographic area and governorate and by urban and rural concentrations within these geographic areas and governorates. This part discusses the per capita disparities in rationed commodities between urban and rural areas and among geographic regions and governorates in order to clarify the Ministry policies towards the various regions and types of areas in this respect (see table 13).

Egyptian governorates can be divided into four geographic regions: the urban governorates include Cairo, Alexandria, Port Said, and Suez; the northern or Lower Egypt governorates (Bahary) include Damietta, Dakhalia, Sharkia, Kalyoubia, Kafr El-Sheikh, Gharbia, Menoufia, Behera, and Ismailia; the Upper Egypt governorates include Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, and Aswan; and the frontier governorates include the Red Sea, the New Valley, Matrouh and North Sinai and South Sinai.

In the following analysis (i.e., for the remainder of section A), the aggregate average for per capita rations of commodities for all of the regions is given a value of 100 (i.e., as an index); all other values for specific commodities in specific areas are relative to their corresponding indices of 100 (i.e., to the corresponding aggregate average).

According to table 13, the average annual per capita rations of baladi and fine wheat flour (or its equivalent from wheat) in 1985 totalled an estimated 146 kg (aggregate average for all regions), with some variations among regions. High averages were those of the frontier governorates (256.75 kg), urban governorates (198.25 kg), and Upper Egypt governorates (176.13 kg), with indices of about 175.86, 135.79, and 120.63 relative to the aggregate average (i.e., index=100) for all regions of Egypt in 1985. For the Lower Egypt governorates, the average was estimated at 120.56 kg, with an index of 82.57. It should be noted that the impact of the lower index for the Lower Egypt governorates was eliminated by the higher index for other regions (as the Lower Egypt governorates contain about 43.32 per cent of the total population in Egypt (CAPMAS, various years[a]; data for 1990).

Average annual per capita rations of rice were estimated at about 24.6 kg in urban governorates and 25.38 kg in frontier governorates, for an index of about 217.7 and 224.6, respectively, relative to the aggregate average for all regions. For the Lower Egypt and Upper Egypt governorates, this average was estimated at 11.19 kg and 8.01 kg, respectively, for an index of 99.02 and 70.88 for the two regions. It should be mentioned here that the percentage of total population in urban governorates was about 20.12 per cent, and 1.17 per cent in the frontier governorates; the sum for both regions was only about 21.29 per cent of the total population. Therefore, the high of per capita rations in these governorates was somewhat compensated for in the aggregate average, since the lower per capita averages in the other regions (Lower Egypt and Upper Egypt) applied to a much larger number of people (Lower and Upper Egypt together constituted about 78.71 per cent of Egypt's population in 1986).

Broad bean, lentils, vegetable oil and sugar rations pretty much followed the same patterns (i.e., the same Ministry policy) as those discussed for wheat and rice; in other words, average annual per capita rations of these commodities in the urban and frontier governorates exceeded the aggregate average for Egypt, whereas the opposite existed for the Lower and Upper Egypt

governorates. For broad beans, variations in per capita rations ranged from indices of 90 in the Upper Egypt governorates to 131.58 in the frontier governorates, and from 91.67 in Lower Egypt to 140 in the frontier goverates for lentils. The discrepancy increased for vegetable oil: per capita rations of this commodity in Upper Egypt had an index of only 49.1, while the index for urban governorates was 138.64.

With respect to sugar, per capita rations in the urban and frontier governorates had an index of 158.25, while the Lower and Upper Egypt indices were only 86.39 and 88.61, respectively.

There is no doubt that the aggregate average (index) for per capita rations at geographical level hid major disparities and variations existing within specific governorates in the same region. To clarify this point and specify these variations, the governorates are ranked according to their official Ministry-rationed quantities, with a comparison provided between the highest and lowest three governorates with respect to rations of the major food commodities already mentioned for the year 1985 (see table 14).

For wheat, the Red Sea, (both) Sinai, and Aswan governorates occupied the first three places (i.e., the highest rank), with average per capita ration indices of 245.21, 231.51 and 189.73, respectively, relative to the combined average for all governorates (i.e., index = 100). Kafr El-Sheikh, Sharkia, and Dakhalia were ranked the lowest in this respect (all are in Lower Egypt). It should be noted that per capita wheat rations in the Red Sea Governorate constituted about 526 per cent of the corresponding average for the Dakhalia Governorate. (For the great disparities and variations in per capita rations of wheat—and other commodities—among the Egyptian governorates, see table 14.)

Per capita rations of rice in Matrouh Governorate was about 6.6 times the corresponding per capita rations in the Suhag Governorate (note the high level of variation between the Upper Egypt and frontier governorates). Per capita rations of broad beans in the Sinai Governorate were about 2.46 times the corresponding per capita rations in the Suhag Governorate. Per capita rations of lentils in the Sinai Governorate were about 3.25 times the corresponding per capita rations in the Matrouh Governorate. Wide variations were also observed for vegetable oil: average per capita rations of vegetable oil in the Sinai Governorate were about 36.5 times the corresponding per capita rations in the Suhag Governorate. Per capita rations of sugar in the Red Sea Governorate were about 4.06 times the corresponding rations in the Behera governorate.

All of the preceding comparisons indicate and confirm the existence of great variations and disparities among the various governorates and regions in Egypt—especially the frontier and/or urban governorates in comparison with other regions, including both the Lower and Upper Egypt governorates. These disparities in rationed quantities tend to be even higher for the urban versus rural areas within the same governorate.

Table 13. Average annual per capita rations of major food commodities in Egypt in 1985, by geographic region

Region	Wheat		Rice		Broad beans		Lentils		Food oil		Sugar	
	(kg/yr*)	(index)	(kg/yr)	(index)	(kg/yr)	(index)	(kg/yr)	(index)	(kg/yr)	(index)	(kg/yr)	(index)
Urban governorates	198.25	135.79	24.60	217.70	2.38	125.26	1.48	123.33	5.25	238.64	30.58	157.63
Lower Egypt governorates	120.56	82.57	11.19	99.02	1.76	92.63	1.10	91.67	2.14	97.27	16.76	86.39
Upper Egypt governorates	176.13	120.63	8.01	70.88	1.71	90.00	1.12	93.33	1.08	49.10	17.19	88.61
Frontier governorates	256.75	175.86	25.38	224.60	2.5	131.58	1.68	140.0	4.98	226.36	30.70	158.25
Aggregate average for all areas of Egypt	146.0	100	11.30	100	1.90	100	1.2	100	2.2	100	19.40	100

Source: Compiled and computed from F. H. Rizk and M.S. El-Etriby, "Pricing policies and food consumption in the Arab Republic of Egypt", National Symposium on Agricultural Marketing and Pricing Policies, organized by the Egyptian Ministry of Agriculture and Land Reclamation with the Food and Agriculture Organization of the United Nations (FAO), and held in Cairo from 11 to 16 April 1987 (in Arabic).

* kg/yr = Kilograms per year.

Table 14. Per capita rations of major food commodities in and ranking of specific governorates in Egypt in 1985

Rank	Wheat			Rice			Broad beans		
	(governorate)	(kg/yr*)	(index)	(governorate)	(kg/yr)	(index)	(governorate)	(kg/yr)	(index)
1	Red Sea	358	245.21	Matrouh	36.3	321.24	Sinai	3.20	168.42
2	Sinai	338	231.51	Port Said	31.5	278.76	Red Sea	2.90	152.63
3	Aswan	277	189.73	Red Sea	27.0	238.94	Cairo	2.70	142.11
23	Kafr El-Sheikh	94	064.38	Fayoum	6.5	057.52	Kafr El-Sheikh	1.50	078.95
24	Sharkia	90	061.64	Qena	6.4	056.64	Behera	1.40	073.68
25	Dakhalia	68	046.58	Suhag	5.5	048.67	Suhag	1.30	068.42
	Aggregate average	146	100	Aggregate average	11.3	100	Aggregate average	1.90	100
Rank	Lentils			Vegetable oil			Sugar		
	(governorate)	(kg/yr)	(index)	(governorate)	(kg/yr)	(index)	(governorate)	(kg/yr)	(index)
1	Sinai	2.6	216.67	Sinai	7.3	331.82	Red Sea	46.30	238.66
2	Red Sea	2.0	166.67	Red Sea	6.9	313.64	Sinai	38.20	196.91
3	Cairo	1.6	133.33	Port Said	5.8	263.64	Cairo	36.30	187.11
23	Behera	0.9	075.00	Qena	0.8	036.36	Kalyoubia	12.40	063.92
24	Suhag	0.9	075.00	Asyout	0.4	018.18	Sharkia	12.20	062.89
25	Matrouh	0.8	066.67	Suhag	0.2	009.09	Behera	11.40	058.76
	Aggregate average	1.2	100	Aggregate average	2.2	100	Aggregate average	19.4	100

Source: Compiled and computed from F. H. Rizk and M.S. El-Etriby, "Pricing policies and food consumption in the Arab Republic of Egypt", National Symposium on Agricultural Marketing and Pricing Policies, organized by the Egyptian Ministry of Agriculture and Land Reclamation with the Food and Agriculture Organization of the United Nations (FAO), and held in Cairo from 11 to 16 April 1987 (in Arabic).

* kg/yr = Kilograms per year.

B. Pricing policies during the 1980s

The pricing policies implemented by the Egyptian Ministry of Supply and Internal Trade during the 1980s were part of the macroeconomic policies implemented country-wide. It should be noted that the policies adopted and implemented in the second half of the 1980s were different from those implemented in the first half of the decade; in the second period of the 1980s, Egypt introduced and adopted economic reform and open-door policies, i.e., many measures were taken to reduce government intervention in the determination of prices for various food commodities.

A study conducted by F.H. Rizk (1992) is one of the few studies carried out on developments in prices of food commodities and products. Rizk (1992) concluded that prices for all food commodities except meat and poultry had been fixed by the Government between 1952 and 1972; the maximum price increase over this period was 100 per cent. For the period 1970 to 1980, the prices for most commodities were again fixed by the Government; the maximum increase in prices throughout this period ranged between 200 and 400 per cent. During the 1980s period (1980 to 1990) free prices evolved for most food commodities, and subsidy was virtually eliminated; prices increased during this period between five- and eight-fold.

In data provided by the General Agency for Rationed Commodities, Ministry of Supply and Internal Trade, the 1980s is divided into two periods—1980 to 1985 and 1986 to 1990, in order to determine and evaluate price changes for major locally produced and imported commodities, as well as subsidy per ton for these items. It should be mentioned that the subsidy was eliminated and imports were halted for some commodities during this period; the presentation will thus cover the period up to subsidy elimination and import cut-off.

This section compares average cost per ton (computed by adding aggregate purchase price, tariffs, and other costs including transportation and storage costs, and dividing this total by total purchased quantity) and average selling price per ton (total returns divided by the total sold quantity of the same commodity) for the first half, second half and entire period of the 1980s. The difference between cost per ton and selling price per ton is considered subsidy per ton (total subsidy divided by total sold quantity) (see table 15).

1. Domestic wheat

Average cost per ton was estimated LE 91.8 for the first period of the 1980s (1981 to 1985); this average increased to about LE 292.8 in the second period (1986 to 1990), for an increase of about LE 201 per ton, or about 218.15 per cent. The average selling price per ton was an estimated LE 42.8 for the first period, rising to about LE 140.4 in the second period—an increase of about LE 97.6 per ton, or 228.04 per cent. Average subsidy per ton increased from about LE 49 in the first period to about LE 152.4 in the second period—an increase of about LE 103.4, or 211.2 per cent. This indicates that subsidy per ton for domestic wheat exceeded its selling price, with the former constituting an average of about 109.3 per cent of the latter throughout the 1980s period.

Table 15. Average cost, selling price and subsidy for locally produced and imported major food commodities during the period 1981 to 1990
(Egyptian pounds per ton)

Commodity	Period	Cost[a]	Selling price[b]	Subsidy[c]	Subsidy as a percentage of selling price
Domestic wheat	1981-1985	91.8	42.8	49.0	114.5
	1986-1990	292.8	140.4	152.4	108.5
	1981-1990	192.3	91.6	100.7	109.3
Fine rice (first period)	1981-1984	181.3	46.0	135.3	294.1
Philippino rice (second period)	1986-1990	469.0	285.0	184.0	64.6
	1981-1990	341.1	178.8	162.3	90.8
Domestic broad beans	1981-1985	254.2	117.4	136.8	116.5
	1986-1989	454.3	339.8	114.5	33.7
	1981-1989	343.1	216.2	126.9	58.7
Domestic lentils	1981-1985	459.4	277.4	182.0	65.6
	1986-1988	856.7	707.0	149.7	21.2
	1981-1988	608.4	438.5	169.9	38.7
Domestic sesame	1981-1985	693.6	527.8	165.8	31.4
	1986-1988	1 123.0	1 374.0	(251)[d]	(18.3)[d]
	1981-1988	854.6	845.1	9.5	1.1
Domestic sugar	1983-1985	425.7	260.3	165.4	63.5
	1986-1990	599.6	245.4	354.2	144.3
	1983-1990	534.4	251.0	283.4	112.9
Imported vegetable oil	1981-1985	551.8	80.4	471.4	586.3
	1986-1987	469.5	73.0	396.5	543.2
	1981-1987	528.3	78.3	450.0	574.7
Imported maize	1981-1985	195.6	60.2	135.4	224.9
	1986-1987	209.5	90.5	119.0	131.5
	1981-1987	199.6	68.9	130.7	189.7
Imported frozen poultry	1981-1985	1 342.4	1 076.6	265.8	24.7
	1986-1990	2 384.0	1 881.6	502.4	26.7
	1981-1990	1 863.2	1 479.1	384.1	26.0
Imported wheat	1981-1985	176.4	45.2	131.2	290.3
	1986-1990	180.0	126.4	53.6	42.4
	1981-1990	178.2	85.8	92.4	107.7
Imported wheat flour	1981-1985	226.8	80.6	146.2	181.4
	1986-1990	260.2	183.4	76.8	41.9
	1981-1990	243.5	132.0	111.5	84.5
Imported broad beans	1981-1983	416.7	130.7	286.0	218.8
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Table 15. (continued)

Commodity	Period	Cost[a]	Selling price[b]	Subsidy[c]	Subsidy as a percentage of selling price
Imported lentils	1981-1985	544.4	253.8	290.6	114.5
	1986-1988	1 071.3	713.0	358.3	50.3
	1981-1988	742.0	426.0	316.0	74.2
Imported sesame	1981-1985	853.4	533.4	320.0	60.0
	1986-1987	1 356.0	1 251.5	104.5	8.3
	1981-1987	997.0	738.6	258.4	35.0
Imported sugar	1981-1985	360.4	243.6	116.8	47.9
	1986-1990	527.0	306.2	220.8	72.1
	1981	443.7	274.9	168.8	61.4
Imported tea	1981-1985	2 826.6	1 147.8	1 678.8	146.3
	1986-1990	2 802.4	1 145.4	1 657.0	144.7
	1981-1990	2 814.5	1 146.6	1 667.9	145.5
Imported frozen meat	1981-1985	1 881.0	822.0	1 059.0	128.8
	1986-1990	3 871.0	2 361.2	1 509.8	63.9
	1981-1990	2 876.0	1 591.6	1 284.4	80.7
Imported frozen fish	1981-1985	507.0	349.2	157.8	45.2
	1986-1990	962.0	479.8	482.2	100.5
	1981-1990	734.5	414.5	320.0	77.0

Source: Compiled and computed from: Egypt, Ministry of Supply and Internal Trade, records of the General Agency for Rationed Commodities (various years) (in Arabic).

[a] Cost per ton = (purchase price + tariffs + other costs, including transportation, etc.) ÷ (total purchased quantity).
[b] Selling price = Total returns ÷ total sold quantity.
[c] Subsidy per ton = Total subsidy ÷ total sold quantity.
[d] Profits rather than subsidy.

2. Imported wheat

Average cost per ton of imported wheat was an estimated LE 176.4 in the first period, increasing to about LE 180 in the second period—a hike of about LE 3.6, or 2.04 per cent. The average selling price per ton was estimated at LE 45.2 in the first period, and increased to about LE 126.4 in the second period—an increase of about LE 81.2, or 179.65 per cent. Average subsidy, estimated at LE 131.2 per ton for the first period, decreased to about LE 53.6 in the second period, a drop of about LE 77.6, or about 59.15 per cent. Average subsidy per ton decreased from 290.3 per cent of selling price in the first period to about 42.4 per cent in the second period; this was mainly due to an increase in the consumer price during the second period of the 1980s.

3. Fine imported wheat flour

Average cost per ton of imported wheat flour decreased from LE 226.8 during the first period to about LE 260.2 in the second period, a rise of about LE 33.4, or 14.73 per cent. On the other hand, average selling price per ton was estimated at LE 80.6 during the first period, increasing to LE 183.4 during the second period, a hike of about LE 102.8, or 127.54 per cent. Average subsidy per ton was an estimated LE 146.2 during the first period, but decreased to about LE 76.8 in the second period, a drop of about LE 69.4, or 47.5 per cent. Average subsidy per ton thus decreased from about 181.4 per cent of selling price in the first period to about 41.9 per cent in the second period.

4. White rice

Data are available for many different qualities and varieties of this commodity. For the purpose of comparability, fine rice was chosen for the first period (1981 to 1984), and Philippino rice for the second period. Average cost per ton of fine rice was estimated at LE 181.3 (first period) against LE 469 for Philippino rice (second period)—an increase of about LE 287.7, or 158.69 per cent. Average selling price per ton was estimated at LE 46 for fine rice (first period) and about LE 285 for Philippino rice (second period)—an increase of about LE 239, or 519.6 per cent. Average subsidy per ton was thus estimated at LE 135.3 during the first period (for fine rice) and about LE 184 (for Philippino rice) in the second period--an increase of about LE 48.7, or 35.99 per cent. The policy of increasing consumer prices resulted in decreasing the subsidy from 294.1 per cent of the selling price in the first period to about 64.6 per cent in the second period.

5. Imported maize

Average subsidy per ton for maize was estimated at LE 135.4 in the first period and LE 119 in the second period, translating into a decrease (in subsidy per ton as a percentage of average selling price) from 224.9 per cent in the first period to about 131.5 per cent in the second period.

6. Domestic and imported broad beans

The policy of increasing the consumer price during the second period resulted in a decrease in subsidy per ton for domestic broad beans, as a percentage of selling price—from about 116.5 per cent in the first period to about 33.7 per cent in the second period. For imported broad beans, average subsidy per ton was an estimated 218.8 per cent of average selling price during the shorter 1981 to 1983 period.

7. Domestic and imported sugar

Table 15 shows that average subsidy per ton for both domestic and imported sugar increased from the first to the second period. For domestic sugar, average subsidy per ton was estimated at 63.5 and 144.3 per cent of average selling price during the first and second periods of the 1980s, respectively. For imported sugar, average subsidy per ton was estimated at 47.9 and 72.1 per cent of the average selling price during the first and second periods, respectively.

8. Imported vegetable oil

Average subsidy per ton for imported vegetable oil decreased from LE 471.4 in the first period to about LE 396.5 in the second period. However, average subsidy per ton for vegetable oil was the highest among all food commodities, and the ratio of subsidy per ton to selling price was high for both the first and second periods—estimated at 586.3 and 543.3 per cent, respectively.

9. Imported frozen meat

The policy of increasing the selling price per ton for imported frozen meat resulted in a decrease in subsidy per ton as a percentage of selling price—from 128.8 per cent in the first period to about 63.9 per cent in the second period.

10. Imported frozen poultry

Average subsidy per ton for imported frozen poultry increased from about LE 265.8 in the first half of the 1980s to about LE 502.4 in the second half. Subsidy per ton as a percentage of selling price increased from about 24.7 per cent in the first period to about 26.7 per cent in the second period.

11. Imported frozen fish

Average subsidy per ton for imported frozen fish increased from about LE 157.8 in the first period to about LE 482.2 in the second period. As a result, subsidy per ton as a percentage of selling price increased from about 45.2 per cent in the first period to about 100.5 per cent in the second period.

12. Summary

In studying the relative changes between the two periods under investigation, 1981 to 1985 and 1986 to 1990 (see table 16), it can be concluded that the highest percentage increases in average cost per ton from the first to the second period occurred for wheat (218.95 per cent), rice (158.69 per cent), imported frozen meat (105.79 per cent), imported lentils (96.78 per cent), imported frozen fish (89.74 per cent) and domestic lentils (86.48 per cent), while decreases were observed in the cases of imported vegetable oil (-14.91 per cent) and imported tea (-0.85 per cent).

With respect to average selling price per ton, the following commodities showed positive (and high) relative changes from the first to the second period: wheat (288.04 per cent), broad beans (189.44 per cent), imported frozen meat (187.25 per cent), imported lentils (180.93 per cent), and imported wheat (179.65 per cent). Negative changes were observed for imported vegetable oil (-9.2 per cent), domestic sugar (-5.72 per cent), and imported tea (-0.21 per cent).

Table 16. Changes in the average cost, selling price, and subsidy for major food commodities between the periods 1981 to 1985 and 1986 to 1990*

Commodity	Increases and decreases in:		
	Cost (percentage)	Selling price (percentage)	Subsidy (percentage)
Domestic wheat	+218.95	+288.04	+211.02
Imported wheat	+2.04	+179.95	-59.14
Imported wheat flour	+14.73	+127.54	-47.47
White rice	+158.69	+519.56	+35.99
Imported maize	+7.11	+50.33	-12.11
Domestic broad beans	+78.72	+189.44	-16.30
Domestic lentils	+86.48	+154.87	-17.75
Imported lentils	+96.78	+180.93	+23.30
Domestic sesame	+61.91	+160.33	From subsidy to profit
Imported sesame	+58.89	+134.63	-67.34
Domestic sugar	+40.85	-5.72	+114.15
Imported sugar	+46.23	+25.70	+89.04
Imported vegetable oil	-14.91	-9.20	-15.89
Imported tea	-0.85	-0.21	-1.30
Imported frozen meat	+105.79	+187.25	+42.57
Imported frozen poultry	+77.59	+74.77	+89.01
Imported frozen fish	+89.74	+37.40	+05.58

Source: Compiled and computed from table 15 of the present study.

* Cost, selling price and subsidy are based on Egyptian pounds per ton.

As a result of the Ministry of Supply and Internal Trade's policy of increasing consumer prices (at quite a high rate), the average subsidy per ton for most of the commodities under study decreased in the second period (1986 to 1990) as compared to the first period (1981 to 1985): these commodities included imported sesame (-67.34 per cent), imported wheat (-59.14 per cent), imported wheat flour (-47.47 per cent), domestic lentils (-17.75 per cent), broad beans (-16.3 per cent), imported vegetable oil (-15.89 per cent), imported maize (-12.11 per cent), and imported tea (-1.3 per cent). In the case of domestic sesame, average selling price exceeded average cost per ton during the second period, i.e., profits were achieved through subsidy in this period. The following commodities showed a high, positive increase in average subsidy per ton from the first

to the second period: domestic wheat (211.02 per cent), imported frozen fish (205.58 per cent), domestic sugar (114.15 per cent), imported sugar (89.04 per cent), imported frozen poultry (89.01 per cent), imported frozen meat (42.57 per cent) and white rice (35.99 per cent).

It should be mentioned that subsidies were eliminated in the late 1980s for some commodities, including domestic and imported broad beans, domestic and imported lentils, domestic and imported sesame, and imported maize. The policy implemented by the Ministry of Supply and Internal Trade during the second half of the 1980s aimed at increasing the selling price for most commodities in order to reduce subsidies for some commodities and eliminate them for others. This notwithstanding, the Ministry increased subsidies during the second half of the 1980s for some commodities, including domestic wheat, domestic and imported sugar, imported frozen fish, the meat and poultry group, and white rice.

C. Food subsidies

1. Trends in food subsidization between 1960 and 1990

This part deals with developments in subsidies for major food commodities over the 1960s, 1970s and 1980s, and relates which commodities fell under the subsidy system for each period of time (see table 17).

The subsidy system began right after the Second World War; F.H. Rizk and M.S. El-Etriby (1987) relate that total average annual subsidy for food commodities then were estimated at LE 2 million, and the subsidized commodities included imported wheat, maize, broad beans and vegetable oil.

Annual subsidy increased from about LE 6.5 million in 1960/1961 to about LE 23.7 million in 1969/1970; if 1960/1961 is assigned a value (index) of 100, the index for 1969/1970 would be about 366, which provides a clear indication of the increases in subsidies for the 1960s period. Commodities under the system during this decade included imported fine flour, imported lentils, rationed sugar, and imported meat and poultry.

In the 1970s, annual subsidy grew from an estimated LE 23.3 million in 1970/1971 to about LE 45.3 million in 1973—doubling in three years. There was an enormous increase in food subsidy between 1973 and 1975. The subsidy figure of about LE 423.8 million for 1975 translates into an index of about 6,542 (i.e., about a 65-fold increase over 1960/1961). Though there were some upward and downward fluctuations, subsidy for food commodities was an estimated LE 905.1 million by the late 1970s (1979); i.e., the amount of food subsidy doubled during the period 1975 to 1979. The index for 1979 (with 1960/1961 = 100) is about 13,971 (indicating an almost 140-fold increase over the two decades).

Table 17. Changes in food commodity subsidies between 1960 and 1990
(Thousand of Egyptian pounds)

Year	Pre-1980 subsidies	Period 1 index (1960/1961=100)	Year	1980-1990 subsidies	Period 2 index (1980/1981=100)
1960/1961	6 478	100.00	1980/1981	1 690 418	100.00
1965/1966	31 665	488.81	1981/1982	1 779 236	105.25
1968/1969	33 213	512.70	1982/1983	1 645 406	97.34
1969/1970	23 697	365.81	1983/1984	2 055 274	121.58
			1984/1985	1 815 204	107.38
1960s average	23 763.3	336.83	1980/1981-1984/1985 average	1 797 107.6	106.31
1970/1971	23 342	360.33	1985/1986	1 540 743	91.15
1971/1972	22 548	348.07	1986/1987	1 157 795	68.49
1973	45 336	699.85	1987/1988	8 33 060	49.28
			1988/1989	1 535 267	90.82
			1989/1990	1 747 375	103.37
1970/1971-1973 average	30 408.7	469.41	1985/1986-1989/1990 average	1 362 848	80.62
1975	423 769	6 541.66			
1976	278 734	4 302.78			
1977	348 781	5 384.08			
1978	483 637	7 465.84			
1979	905 059	13 971.27			
1975-1979 average	487 996	7 533.13			
1970/1971-1979 average	316 400.8	4 884.23	1980/1981-1989/1990 average	1 579 977.8	93.47

Sources : Compiled and computed from: F.H. Rizk and M.S. El-Etriby, "Pricing policies and food consumption in the Arab Republic of Egypt," National Symposium on Agricultural Marketing and Pricing Policies, Ministry of Agriculture and Land Reclamation (Egypt), with the Food and Agriculture Organization of the United Nations (FAO), Cairo, April 1987 (in Arabic); and F.H. Rizk, "The demand for rationed food commodities", National Symposium on Agricultural Policies in the Arab Republic of Egypt, Egyptian Ministry of Agriculture and Land Reclamation with FAO, Cairo, January 1992 (in Arabic).

During the 1970s, the great increases in food subsidy were mainly due to State policy, which concentrated on raising subsidies not only for the commodities already mentioned, but also for the following: yeast, rice, common peas, ghee, dried and condensed milk, preserved meat, cottage cheese and tomato paste. At the end of the 1970s, the subsidy also covered some complementary commodities such as *yamish.** It should be noted that, while the 1960s saw only a four-fold increase in subsidy size (i.e., monetary amount) during the 1960s, the 1970s witnessed an almost 39-fold jump.

Subsidies totalled an estimated LE 1,690.4 million in 1980/1981, but tended to fluctuate during the rest of the decade. Subsidies were an estimated LE 1,815.2 million in 1984/1985; average annual subsidy size during the period 1980 to 1985 was an estimated LE 1,797.1 million. This average decreased in the second half of the 1980s to about LE 1,362.8 million a year—i.e., a decrease of about LE 434.3 million in the second half, or 24.16 per cent. This provides an indication of the Egyptian Governments' serious intention to decrease subsidy for food commodities

* The local term for nuts.

in the second half of the 1980s. If 1980/1981 represents the base year, with an index of 100, subsidy for 1983/1984 is reflected in an index of 121.58, against an index of 49.28 for 1987/1988. This indicates high variations in subsidy size over the different years of the 1980s.

2. Subsidies for major food commodities and groups during the 1980s

This part deals with the monetary amounts and percentages (i.e., distribution) of food subsidy for major food commodities and groups during the 1980/1981 to 1984/1985 and 1985/1986 to 1989/1990 periods, and for the whole period of the 1980s (1980/1981 to 1989/1990), to provide a clearer understanding of the general trends related to food subsidy (i.e., increases or decreases) for specific commodities and food groups during the 1980s (see table 18).

Average annual subsidy for imported and domestic wheat was estimated at about LE 584.3 million for the first half of the 1980s, decreasing to about LE 313.9 million in the second half—a drop of about LE 270.4 million, or 46.28 per cent. The average subsidy for imported and domestic wheat constituted more than 25 per cent of total subsidy during the 1980s. Average annual subsidy for imported and domestic fine flour was estimated at about LE 204.2 million in the first period (1980/1981 to 1984/1985), decreasing to about LE 112.6 million in the second period (1985/1986 to 1989/1990), falling about LE 91.6 million, or 44.9 per cent. Average subsidy for imported and domestic fine flour constituted about 10.3 per cent of total subsidy for food commodities during the entire 1980s period.

Average annual subsidy for imported and domestic maize was estimated at about LE 205.7 million in the first half of the 1980s, but fell to about LE 91 million in the second half, a decrease of about LE 114.7 million, or 55.76 per cent. Average subsidy for imported and domestic maize constituted about 9.39 per cent of total food commodities subsidy during the 1980s. Average annual subsidy for domestic white rice was estimated at about LE 66.8 million in the first period, increasing to about LE 119.3 million in the second period, a rise of about LE 52.5 million, or 78.59 per cent; rice was the only one of the food grains commodities showing an increase in subsidy during the second period (see table 18).

The preceding discussion showed that average annual subsidy for food grains was an estimated LE 1,061 million in the first half of the 1980s, decreasing to about LE 636.9 million in the second period, a decrease of about LE 424.1 million, or 39.97 per cent. A decrease in grains subsidy as a percentage of total subsidy for food commodities—from 59.04 per cent in the first period to about 46.73 per cent of total subsidy in the second period—further supports this conclusion (see table 18).

Average annual subsidy for the oils and fats groups was estimated at about LE 282.8 million in the first period, decreasing to about LE 218.3 million in the second period, a drop of about LE 64.5 million, or 22.81 per cent. The average subsidy for this group as a share of total subsidy for food commodities increased from 15.73 per cent in the first period to 16.02 per cent in the second period; this was mainly due to reductions in total subsidy.

Table 18. Average annual distribution of subsidies for major food commodities between 1980 and 1990

Food commodity or group	1980/1981-1984/1985		1985/1986-1989/1990		1980/1981-1989/1990	
	(thousands of LE*)	(percentage)	(thousands of LE*)	(percentage)	(thousands of LE*)	(percentage)
Imported and domestic wheat	584 269.2	32.51	313 939.2	23.04	449 104.2	28.43
Imported and domestic fine flour	204 247.8	11.37	112 613.8	8.26	158 430.8	10.30
Imported and domestic maize	205 690.0	11.45	91 016.4	6.68	148 353.2	9.39
Domestic white rice	66 833.2	3.72	119 340.8	8.76	93 087.0	5.89
Imported and domestic lentils and broad beans	39 886.2	2.22	9 961.8	0.73	24 924.0	1.58
Imported and domestic oil and ghee	157 480.6	8.76	165 498.0	12.14	161 489.3	10.22
Imported and domestic oils and fats	125 327.8	6.97	52 798.0	3.87	89 062.9	5.64
Imported and domestic sugar	153 547.2	8.54	382 008.0	28.03	267 777.6	16.95
Tea	62 801.0	3.49	35 008.8	2.57	48 904.9	3.10
Imported calves and sheep and domestic viviparous animals	21 363.2	1.19	30 670.6	2.25	26 016.9	1.65
Frozen and preserved meat	117 509.8	6.54	20 493.4	1.50	69 001.6	4.37
Domestic poultry and imported frozen poultry	29 900.6	1.66	25 133.4	1.84	27 517.0	1.74
Other foods	28 185.8	1.57	4 365.8	0.32	16 275.8	1.03
Total	1 797 042.4	100%	1 362 848.0	100%	1 579 945.2	100%

Source: Compiled and computed from: Egypt, Ministry of Supply and Internal Trade, records of the General Agency for Rationed Commodities (various years) (in Arabic).

* LE = Egyptian pounds).

Average annual subsidy for imported and domestic sugar was estimated at about LE 153.5 million in the first period, and increased to about LE 382 million in the second period, a hike of about LE 228.5 million, or 148.86 per cent. It should be mentioned that sugar was one of the commodities which showed a high increase in its subsidy in the second period over the first period;

the fact that this more than doubled is significant, given that subsidy for most other commodities showed a decreasing trend during the second period.

Average annual subsidy for the poultry and meat group was estimated at about LE 168.8 million in the first period, but decreased to about LE 76.3 million in the second period, a drop of about LE 92.5 million, or 54.8 per cent. The average subsidy for this group as a share of total subsidy for food commodities decreased from 9.39 per cent in the first period to 5.6 per cent in the second. The average annual subsidy for dry legumes (imported and domestic lentils and broad beans) as a share of total subsidy decreased from 2.22 per cent in the first period to about 0.73 per cent in the second. The share of subsidy for tea in total subsidy decreased from 3.49 per cent in the first period of the 1980s to about 2.57 per cent in the second period.

3. Per capita subsidies for major food commodities and groups during the 1980s

Estimates for total subsidy for food commodities and estimates of Egypt's population during the 1980s are used to calculate average annual per capita subsidies for major food commodities and groups (see table 19). Average annual per capita subsidies for the food grains group was estimated at LE 24.44 in the first period (1980/1981 to 1984/1985); this average fell to about LE 12.82 in the second period (1985/1986 to 1989/1990)—a decrease of about LE 11.62, or 47.55 per cent. Overall, average per capita subsidy for the food grains group constituted about 54.25 per cent of total per capita subsidies for all food commodities during the 1980s.

Average annual per capita subsidies for the oils and fats group was estimated at about LE 6.47 in the first period, but decreased to about LE 4.41 in the second period, a drop of LE 2.06, or 31.84 per cent. Average per capita subsidy for this group constituted about 15.84 per cent of total per capita subsidy for all food commodities during the 1980s.

Average annual per capita subsidy for sugar was estimated at LE 3.56 in the first period, increasing to about LE 7.56 in the second period, an increase of about LE 4.0, or 112.36 per cent. Sugar was the only commodity showing a high increase in its subsidy during the second period as compared to the first period. Average per capita subsidy for sugar constituted about 16.19 per cent of total per capita subsidy during the 1980s decade (see table 19).

Average annual per capita subsidy for the poultry and meat group was estimated at LE 3.87 in the first period, decreasing to about LE 1.53 in the second period, for a drop of about LE 2.34, or 60.47 per cent. Average per capita subsidy for this group constituted about 7.86 per cent of total per capita subsidy during the 1980s. Average per capita subsidy for tea decreased by about 50 per cent, and constituted about 3.11 per cent of total per capita subsidy. Average per capita subsidy for dry legumes decreased by about 77.4 per cent from the first to the second period.

Total (average annual) per capita subsidy was an estimated LE 41.35 in the first period, decreasing to about LE 27.33 in the second period—a decrease of about LE 14.02, or 33.91 per cent. The subsidy policy implemented by the Government during the 1980s resulted in a per capita subsidy reduction of about 33 per cent from the first to the second period.

Table 19. Average annual distribution of total subsidies and per capita subsidies during the periods 1980/1981 to 1984/1985, 1985/1986 to 1989/1990, and 1980/1981 to 1989/1990, by food group

Item	Food group	1980/1981-1984/1985		1985/1986-1989/1990		1980/1981-1989/1990	
		(thousands of LE*)	(percentage)	(thousands of LE)	(percentage)	(thousands of LE)	(percentage)
Total subsidy	Food grains	1 061 040.2	59.04	636 910.2	46.73	848 975.2	53.73
	Dry legumes	39 886.2	2.22	9 961.8	0.73	24 924.0	1.58
	Oils and fats	282 808.4	15.74	218 296.0	16.02	250 552.2	15.86
	Sugar	153 547.2	8.54	382 008.0	28.03	267 777.6	16.95
	Tea	62 801.0	3.49	35 008.8	2.57	48 904.9	3.10
	Poultry and meat	168 773.6	9.39	26 297.4	5.60	122 535.5	7.75
	Other	28 185.8	1.57	4 365.8	0.32	16 275.8	1.03
	Total	1 797 042.4	100%	1 362 848.0	100%	1 579 945.2	100%
Item	Food group	1980/1981-1984/1985		1985/1986-1989/1990		1980/1981-1989/1990	
		LE	(percentage)	LE	(percentage)	LE	(percentage)
Per capita subsidy	Food grains	24.44	59.11	12.82	46.91	18.63	54.25
	Dry legumes	0.93	2.25	0.21	0.77	00.57	1.66
	Oils and fats	6.47	15.65	4.41	16.14	05.44	15.84
	Sugar	3.56	8.61	7.56	27.66	05.56	16.19
	Tea	1.42	3.43	0.71	2.60	01.07	3.11
	Poultry and meat	3.87	9.36	1.53	5.60	02.70	7.86
	Other	0.66	1.60	0.09	0.33	00.38	1.10
	Total	41.35	100%	27.33	100%	34.34	100%

Source: Compiled and computed from: Egypt, Ministry of Supply and Internal Trade, records of the General Agency for Rationed Commodities (various years) (in Arabic).

* LE = Egyptian pounds.

D. Food aid for Egypt during the 1980s

Food aid is considered one source of food supply in Egypt. Because of its low relative importance—i.e., because it contributes little to total quantities of food available for consumption—it is classified within imported quantities. Donors provide food aid on the condition that the commodities will be sold by the Government on the domestic market, with the returns used to establish development projects which, in turn, help to increase the food supply in Egypt. While Egypt received most of its food aid during the 1980s from European and other countries, it was given small quantities by some international agencies such as the United States Agency for International Development (USAID), the World Food Programme (WFP), and CARE. These quantities were distributed free of charge to schools, hospitals, and other such facilities. Tables 20 and 21 show the distribution of food aid to Egypt during the latter part of the 1980s.

Table 20. Average annual and total distribution of food aid for Egypt from European and other countries and various organizations during the period 1984 to 1990

Commodity	European and other countries		World Food Programme and CARE		Total annual average		Aggregate total for the period 1984 to 1990 (thousands of tons)
	(thousands of tons)	(percentage)	(thousands of tons)	(percentage)	(thousands of tons)	(percentage)	
Wheat	279 913	99.13	2 447	0.87	282 360	100	1 976 522
Fine wheat flour	77 938	76.84	23 485	23.16	101 423	100	709 956
Vegetable oil	7 956	68.38	3 679	31.62	11 635	100	81 444
Ghee	1 537	85.15	268	14.85	1 805	100	12 637
Dried milk	4 147	30.75	9 338	69.25	13 485	100	94 394
Sugar	7 429	94.25	453	5.75	7 882	100	55 171
Rice	4 214	61.13	2 679	38.87	6 893	100	48 253
Frozen meat	1 429	74.66	485	25.34	1 914	100	13 397
Preserved cheese	--	--	903	100	903	100	6 320
Preserved fish	--	--	193	100	193	100	1 352
Supplementary foods	--	--	2 692	100	2 692	100	18 847
Bulgur	--	--	1 470	100	1 470	100	10 288

Source: Compiled and computed from: Egypt, records of the Ministry of Supply and Internal Trade (various years).

Table 21. Distribution of food aid for Egypt during the period 1984 to 1990, by commodity and by distributing country

Commodity	European Market	Italy	France	Germany	Holland	Spain	Australia	Canada	Saudi Arabia	Total
Wheat	55.37	1.40	4.80	04.54	--	0.25	16.99	6.43	10.21	100
Fine wheat flour	--	5.42	57.63	37.05	--	--	--	--	--	100
Vegetable oil	38.50	59.83	1.67	--	--	--	--	--	--	100
Ghee	88.10	--	--	--	11.90	--	--	--	--	100
Dried milk	92.63	--	0.48	--	6.89	--	--	--	--	100
Sugar	7.69	59.62	32.69	--	--	--	--	--	--	100
Rice	--	100	--	--	--	--	--	--	--	100
Frozen meat	--	100	--	--	--	--	--	--	--	100

Source: Compiled and computed from: Egypt, records of the Ministry of Supply and Internal Trade (various years).

Average yearly wheat aid was estimated at about 282,400 tons for the 1984 to 1990 period; of this quantity, 99.13 per cent was provided by European (i.e., European Community, or EC) and other countries, and 0.87 per cent from the WFP and CARE (table 20). The specific share of each country in wheat aid for Egypt (and for a number of other commodities) is given in table 21. Average annual fine wheat flour aid from all sources was estimated at about 101,400 tons during the 1984 to 1990 period; 76.84 per cent came from the EC and other countries, and 32.16 per cent from the WFP and CARE.

Average yearly vegetable oil aid for the same period was estimated at about 11,600 tons, and average yearly dried milk aid was about 13,500 tons. For the rest of the commodities, average yearly aid was estimated as follows (in tons/year): sugar (7,900), rice (6,900), frozen meat (1,914), supplementary food commodities (2,692), and bulgur (1,470).

III. POPULATION GROWTH AND URBANIZATION AND THEIR RELATIONSHIP TO FOOD CONSUMPTION PATTERNS IN EGYPT

Egypt, like many developing countries, is characterized by high population growth rates; its numbers have doubled in 28 years. Both the size of the population and its distribution greatly affect the patterns of food consumption in Egypt. Urbanization (the shift from rural areas to urban areas), with its accompanying increase in the proportion of urban population and the corresponding decrease in the percentage of rural population, has had an impact on Egyptian food patterns. This may be due to some extent to the differences in economic status between rural and urban groups.

This chapter deals with population growth rates in rural and urban areas of Egypt in order to determine and evaluate the differences between the two, particularly as they relate to food consumption patterns in Egypt. Internal migration flows among Egypt's regions are also discussed because of their impact on the rural-urban interchange phenomenon. The impact of population distribution (with respect to geographic area, householder occupation, household size, and employment status) on Egyptian food patterns are also presented. Data from the 1981/1982 and 1990/1991 household budget surveys are used.

A. Population growth rates in rural and urban areas

The population of Egypt (excluding individuals outside the country), were estimated at about 26,085,000 in 1960; this number had increased to about 48,254,000 by 1986—an increase of about 22,169,000, or 85 per cent. Average annual population growth was estimated at about 2.14 and 2.8 per cent during the periods 1960 to 1976 and 1976 to 1986, for an average of about 2.4 per cent per year for the entire 1960 to 1986 period. (See table 22 for data on urban/rural and male/female population distribution and growth rates between 1960 and 1986.)

Differences were observed between rural and urban areas with respect to annual population growth rate. For the period 1960 to 1976, average annual growth was estimated at 3.02 per cent for urban areas, against 1.54 per cent for rural areas; i.e., the urban rate was almost double the rural rate. For the period 1976 to 1986, average annual population growth rates in both rural and urban areas were about the same, at 2.84 per cent for urban and 2.77 per cent for rural areas. For the whole period 1960 to 1986, the average annual population growth rate was estimated at 2.95 per cent for urban areas and about 2.0 per cent for rural areas. Low annual growth rates for rural population—against the high rates for urban population—were at least partially due to internal migration from rural to urban areas. The urban population constituted about 38.2, 43.78 and 43.97 per cent of total population in 1960, 1976 and 1986, respectively. Internal migration tended to move in the direction of rural to urban; rates of such migration were higher during the 1960 to 1976 period than during the 1976 to 1986 period.

Table 22. Distribution of Egypt's population by area (urban/rural) and by sex in 1960, 1976 and 1986, and average annual growth rates from 1960 to 1976 and 1976 to 1986

Year	Urban		Rural		Total	
	Distribution (thousands)	Average annual growth rate (percentage)	Distribution (thousands)	Average annual growth rate (percentage)	Distribution (thousands)	Average annual growth rate (percentage)
1960	9 965	--	16 120	--	26 085	--
1976	16 037	3.02	20 590	1.54	36 627	2.14
1986	21 216	2.84	27 038	2.77	48 254	2.80
Year	Male		Female		Total	
	(thousands)	(percentage)	(thousands)	(percentage)	(thousands)	(percentage)
1960	13 118	50.29	12 967	49.71	26 085	100
1976	18 648	50.91	17 979	49.09	36 627	100
1986	24 709	51.21	23 545	48.79	48 254	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Statistical Yearbook 1991, June 1991.

B. Internal migration

1. Internal migration and its role in the urbanization process

This part deals with internal migration flows from rural and/or some urbanized areas to urban governorates during the period 1960 to 1986. Later, internal migration flows among the geographic areas of Egypt (based on published CAPMAS data) are also discussed.

Although all types and flows of internal migration exist, most demographic and population studies place more concern on migration from rural areas to the city because of the relative importance of this flow—especially throughout the period 1960 to 1976 (in Egypt). The urban population increased from 37 per cent of total population in 1960 to about 44 per cent in 1986. A study by A.M. Hadhoud (1982) documented that internal migration accounted for about 33.5 per cent of the total population increase in urban governorates throughout the 1960 to 1976 period; this flow decreased during the 1976 to 1986 period, however. the urban population in 1976 and 1986 were about the same—an estimated 43.97 and 44 per cent, respectively. Data published by CAPMAS about internal migration over the 1961 to 1986 period are used for this subsection (see tables 23 and 24).

Table 23 indicates that internal migration flow over five periods—1961 to 1966, 1967 to 1971, 1972 to 1976, 1977 to 1981, and 1982 to 1986—constituted about 14.37, 16.5, 36.04, 18.02 and 15.07 per cent, respectively, of total migration to urban governorates. The reconstruction of Suez and Port Said cities and the return of its residents is the main reason behind the high figures for this area for the period 1972 to 1976. Overall, the period 1961 to 1976 saw about 66.91 per

cent of the total internal migration, against about 33.09 per cent for the period 1977 to 1986. Most of this internal migration (73.71 per cent) was from rural areas to the Cairo and Alexandria governorates, while the rest (26.29 per cent) moved to the Suez and Port Said governorates.

Table 23. Internal migration to urban governorates between 1961 and 1986

Period	Cairo		Alexandria		Port Said and Suez		Total	
	(thousands)	(percentage)	(thousands)	(percentage)	(thousands)	(percentage)	(thousands)	(percentage)
1961-1966	156.3	71.60	55.6	25.47	006.4	02.93	218.3	100
1967-1971	180.9	72.16	62.6	24.97	007.2	02.87	250.7	100
1972-1975	181.0	33.05	58.8	10.74	307.8	56.21	547.6	100
1977-1981	170.7	62.34	51.4	18.77	051.7	18.89	273.8	100
1982-1986	158.0	69.00	44.6	19.48	026.4	11.53	229.0	100
Total	846.9	55.74	273.0	17.97	339.5	26.29	1 519.4	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Population Characteristics and Housing Conditions, vol. 1, Sample Results, Reference No. 861/89/AMT (in Arabic).

Table 24. Internal migration to urban governorates: distribution according to area of origin during the period 1961 to 1986

Period	From rural areas of Egypt		From urban areas other than urban governorates		Total		Annual average
	(thousands)	(percentage)	(thousands)	(percentage)	(thousands)	(percentage)	(thousands)
1961-1976	676	66.48	340.8	33.52	1 016.8	100	67.79
1977-1986	320	63.63	182.9	36.37	502.9	100	50.29
Total migration	996	65.54	523.7	34.46	1 519.7	100	60.79

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Population Characteristics and Housing Conditions, vol. 1, Sample Results, Reference No. 861/89/AMT (in Arabic).

As mentioned before, internal migration to urban governorates included movement from both rural and other urban areas. Table 24 shows that migration from rural areas constituted about 65.54 per cent of total internal migration to urban governorates between 1961 and 1986, against 34.46 per cent for migration from other urban areas for the same period. The contribution of migration from rural areas to the total internal migration flow decreased to about 32.12 per cent for the period 1977 to 1986. It should be noted that the migration flow from rural to urban governorates was accompanied by an opposite flow from urban governorates to rural areas—about 126,000 over the period 1961 to 1986. Net migration was thus an estimated 870,000 people for this period.

2. Internal migration flows in Egypt up to 1986

Table 25, based on data from Egypt's 1986 population census and an analysis of internal migration flows among the different regions (urban governorates, urban areas of Lower Egypt, urban areas of Upper Egypt, rural areas of Lower Egypt, and rural areas of Upper Egypt), indicates that, out of total population of about 47,153,000 people, 40,152,000 people (i.e., 7,731,000 + 5,072,000 + 4,872,000 + 11,443,000 + 11,034,000 in the respective regions listed above), had not ever been involved in internal migration—i.e., about 85.15 per cent of Egypt's population (as of 1986) had not migrated. In other words, 14.85 per cent of Egypt's population—quite a large percentage—had migrated internally by 1986. It should be noted that the preceding geographic classification ignores migration flows within each region; for example, this classification does not indicate migration flows among the urban governorates (Cairo, Alexandria, Port Said and Suez). If these neglected flows were considered as well, internal migration figures for Egypt would likely be even higher.

Table 25. Internal migration flows among the geographic regions of Egypt up to 1986
(Thousands)

Region of residence	Region of birth					
	Urban governorates	Urban areas of Lower Egypt	Urban areas of Upper Egypt	Rural areas of Lower Egypt	Rural areas of Upper Egypt	Total resident in governorate
Urban governorates	7 731*	709	610	2 575	130	11 755
Urban areas of Lower Egypt	179	5 072*	80	258	27	5 616
Urban areas of Upper Egypt	307	138	4 872*	31	159	5 507
Rural areas of Lower Egypt	58	971	40	11 443*	15	12 527
Rural areas of Upper Egypt	69	27	606	12	11 034*	11 748
Total born in governorate	8 344	6 917	6 208	14 319	11 365	47 153

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Population Characteristics and Housing Conditions, vol. 1, Sample Results, Reference No. 861/89/AMT (in Arabic).

* Figure represents the number of people who did not migrate.

Table 25 indicates that the resident population in urban governorates was an estimated 11,755,000 people in 1986; of this number, about 8,344,000 were born and remained in these governorates (i.e., did not migrate), so net migration to urban governorates was about 3,411,000 people up to 1986, comprising 29.02 per cent of the total resident population. These data relate to Egypt's total population over a long period of time, which is why they seem different from the results of the previous section; these differences are mainly due to the variations in the period covered.

C. The effects of population distribution on consumption patterns

Increases in population size and changes in population distribution are considered the most important factors affecting food consumption patterns. These patterns vary according to location

(urban vs. rural) because of differences in demographic, socio-economic and environmental conditions in the rural and urban areas. Food consumption patterns also vary among geographic areas—and even within the same area because of differences in population distribution with respect to factors such as householder occupation, economic activity, employment status, educational status, household size, and/or the age distribution within or among the various households.

The following discussion deals with some of these distributions—specifically, with average annual expenditure per household by geographic region, by householder occupation, by householder employment status, and by household size. Primary data from the 1990/1991 Household Budget Survey include average annual household expenditure by region and by governorate only (i.e., expenditures by other population distributions are not included); the discussion of the major population distributions mentioned above and their relationship to food consumption patterns in Egypt are therefore based on the 1981/1982 Household Budget Survey.

1. Geographic areas

The 1981/1982 Household Budget Survey classifies Egypt into four geographic regions: urban governorates (including Cairo, Alexandria, Port Said and Suez); frontier governorates (including the Red Sea, the New Valley, North and South Sinai and Matrouh); the Lower Egypt governorates (including Damietta, Dakhalia, Sharkia, Kalyoubia, Kafr El-Sheikh, Gharbia, Menoufia, Behera, and Ismailia); and the Upper Egypt governorates (including Giza, Beni-Suef, Fayoum, Menia, Asyout, Suhag, Qena, and Aswan). Each of these areas (except for the urban governorates) is also classified according to urban and rural concentrations.

Given the combined two classifications above, there are seven major regions: urban governorates, urban areas of Lower Egypt, urban areas of Upper Egypt, urban areas of the frontier governorates, rural areas of Lower Egypt, rural areas of Upper Egypt, and rural areas of the frontier governorates. Because of the relatively minor importance of the frontier governorates, the rural and urban areas for this category will be treated as one, under the name of frontier governorates. Multiplying the weighted average annual expenditure per household by the total number of sampled households and/or by the percentage of the region's population is used to obtain an aggregate average for all of Egypt.

For 1981/1982, average annual expenditure per household in urban governorates, urban areas of Lower Egypt, the frontier governorates, and urban areas of Upper Egypt was an estimated LE 1,546.3, LE 1,415.4, LE 1,351.8, and LE 1,296.2, respectively. If the aggregate annual average for Egypt is assigned an index of 100, the respective indices for the above areas are 122.04, 111.71, 106.69 and 102.3. Indices for the rural areas of Lower Egypt and rural areas of Upper Egypt were lower than the aggregate average, at 91.42 and 79.4, respectively. In other words, average annual expenditure per household in the rural areas of Upper Egypt (lowest figure) constituted only about 65.1 per cent of the corresponding average for the urban governorates (highest figure) (see table 26).

Table 26. Average annual expenditure per household in 1981/1982, by food group and by geographic area in Egypt

Food group	Urban governorates		Urban areas of Lower Egypt		Urban areas of Upper Egypt		Frontier governorates		Rural areas of Lower Egypt		Rural areas of Upper Egypt		Aggregate average for all areas in Egypt	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	90.6	73.01	123.7	99.69	105.4	84.94	123.4	99.44	164.8	132.81	115.0	92.67	124.09	100
Dry legumes	18.1	78.46	26.4	114.43	18.5	80.19	25.1	108.80	30.8	133.51	18.0	78.46	23.07	100
Vegetables	83.0	115.04	84.9	117.67	65.9	91.34	77.8	107.83	71.4	98.96	57.0	79.00	27.15	100
Fruits	57.2	143.04	49.4	123.53	39.0	97.52	47.0	117.53	31.6	79.02	27.5	68.77	39.99	100
Meat and Poultry	175.9	109.34	167.4	104.06	169.6	105.43	167.1	103.87	145.3	90.32	156.4	97.22	160.87	100
Fish and Scallops	36.7	120.01	44.5	145.52	22.6	73.90	35.1	114.78	33.5	109.55	15.7	51.34	30.58	100
Eggs	24.6	130.99	21.3	113.42	20.7	110.22	28.3	150.69	15.0	79.87	14.2	75.61	18.78	100
Milk and dairy products	83.2	160.65	53.6	103.49	53.5	103.30	48.6	93.84	44.6	86.12	27.5	53.10	51.79	100
Oils and fats	61.1	96.52	57.8	91.31	65.3	103.16	49.6	78.36	62.9	99.37	69.8	110.27	63.30	100
Sugar and sugar commodities	40.9	102.17	42.0	104.92	43.2	107.92	38.0	94.93	40.3	100.67	35.8	89.43	40.03	100
Other food commodities	36.3	142.02	31.5	123.24	32.8	128.33	27.1	106.03	15.2	59.47	20.2	79.03	25.56	100
Beverages	36.6	133.48	28.9	105.40	30.9	112.69	41.5	151.35	21.5	78.41	21.6	78.77	27.42	100
Food and beverages (total)	744.3	109.84	731.4	107.93	667.4	98.49	708.6	104.57	676.9	99.89	578.8	85.41	677.65	100
Total expenditure	1 546.3	122.04	1 415.4	111.71	1 296.2	102.30	1 351.8	106.69	1 158.4	91.42	1 006.0	79.40	1 267.05	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/82 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

The ranking for geographic regions according to average annual expenditure on food commodities does not differ from the previous results concerning average annual expenditure as a whole. Average annual expenditure per household on food exceeds the corresponding aggregate average for Egypt in the following regions: urban governorates, urban areas of Lower Egypt, and frontier governorates; conversely, the aggregate average for Egypt is higher than the corresponding averages for the rural areas of Lower Egypt, urban areas of Upper Egypt and rural areas of Upper Egypt. It is worth noting that divergences from the aggregate average for annual expenditure per household are higher than the corresponding divergences from the aggregate average for annual expenditure per household on food. Average food expenditure per household in rural areas of upper Egypt constituted about 77.8 per cent of the corresponding average food expenditure in urban areas.

Overall, average annual expenditure per household in urban governorates, urban areas of Lower Egypt, urban areas of Upper Egypt, and frontier governorates exceeded the corresponding aggregate average for Egypt as a whole, especially on the following food groups: meat and poultry, eggs, other food commodities and beverages. Average annual expenditure per household in rural areas of Lower Egypt exceeds Egypt's corresponding average annual expenditure on grains and starches, dry legumes, fish and scallops, sugar and sugar commodities. For the rural areas of Upper Egypt, average annual expenditure per household is lower than the aggregate average for Egypt for all food groups except oils and fats.

The availability of primary data related to income, expenditure, and consumption (obtained from 1990/1991 research; see CAPMAS, 1992b) provide the opportunity to conduct a comparative study on average annual expenditure per household by geographic region (i.e., 1981/1982 figures against 1990/1991 figures) (see table 27). According to the 1990/1991 data, total average annual expenditure per Egyptian household was estimated at LE 5,311.25—i.e., about 419.18 per cent of the 1981/1982 average, which was estimated at LE 1,267.05 per household. If the index for each of the areas in 1981/1982 is 100, the corresponding increases in average annual expenditure per household by 1990/1991 are reflected in the following indices: rural areas of Lower Egypt = 467.25, urban areas of Upper Egypt = 407.07, and rural areas of Upper Egypt = 405.5. These indices indicate that the period-to-period (1980/1981 to 1990/1991) variations among regions with respect to average annual expenditure were very low; for example average annual expenditure per household in the rural areas of Upper Egypt was about 67.92 per cent of the corresponding average for urban governorates in 1990/1991 (compared to 65.1 per cent for 1980/1981).

It should be mentioned that average annual food and beverage expenditure in 1990/1991 for households in rural areas of Lower Egypt exceeded the aggregate average for Egypt by about 10.07 per cent. This was mainly due to the high expenditure in this region on the following groups: grains and starches, dry legumes, vegetables, and oils and fats. Average annual expenditure on food and beverages in rural areas of Upper Egypt constituted about 81.98 per cent of the corresponding average for rural areas of Lower Egypt. Variations in average annual expenditure were high for fish and scallops; average annual expenditure on this food group in rural areas of Upper Egypt was only about 25.3 per cent of the corresponding average for rural areas of Lower Egypt—mainly due to the high level of fish and scallop consumption in the coastal areas. The consumption of milk and dairy products in rural areas of Upper Egypt was equal to only about 24.5 per cent of the corresponding average in urban governorates.

Table 27. Average annual expenditure per household in 1990/1991, by food group and by geographic area in Egypt

Food group	Urban governorates		Urban areas of Lower Egypt		Urban areas of Upper Egypt		Frontier governorates		Rural areas of Lower Egypt		Rural areas of Upper Egypt		Aggregate average for all areas in Egypt	
	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	425.73	74.75	525.49	92.26	460.27	80.81	630.39	110.68	812.00	142.57	600.68	105.46	569.56	100
Dry legumes	056.65	73.68	67.61	87.93	72.69	94.54	142.43	185.24	100.26	130.39	83.41	108.48	76.89	100
Vegetables	336.34	103.39	344.38	105.87	284.89	87.58	317.60	97.63	390.63	120.08	239.79	73.71	325.30	100
Fruits	177.13	103.02	157.61	91.67	159.12	92.55	140.10	81.49	142.23	82.73	232.35	135.14	171.93	100
Meat and poultry	673.15	103.94	614.13	94.83	702.41	108.46	548.83	84.74	649.15	100.23	597.68	92.29	647.64	100
Fish and scallops	160.95	125.67	176.59	137.89	105.29	82.21	105.78	82.60	134.78	105.24	44.67	34.88	128.07	100
Eggs	72.37	107.20	71.21	105.48	68.60	101.61	59.95	88.80	67.25	99.61	56.50	83.69	67.51	100
Milk and dairy products	314.53	140.12	183.58	81.78	243.25	108.37	164.53	73.30	205.58	91.58	139.88	62.32	224.47	100
Oils and fats	195.80	91.10	212.22	98.74	215.92	100.46	193.04	89.82	245.02	114.00	207.33	96.46	214.93	100
Sugar and sugar commodities	122.78	95.92	134.84	105.34	146.23	114.24	165.70	129.45	121.81	95.16	117.64	91.91	128.00	100
Other food commodities	140.68	121.78	128.15	110.93	132.70	114.87	55.49	48.03	87.04	75.35	92.69	80.24	115.52	100
Beverages	99.68	106.84	94.05	100.80	105.60	113.18	109.48	117.34	85.49	91.65	80.66	86.45	93.30	100
Food and beverages (total)	2 775.80	100.46	2 709.86	98.07	2 696.97	97.61	2 633.33	95.30	3 041.24	110.07	2 493.28	90.23	2 763.12	100
Total expenditure	6 005.43	113.07	5 411.33	101.88	5 276.41	99.34	4 973.67	93.64	5 412.58	101.91	4 078.86	76.80	5 311.25	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

2. Governorates within specific geographic areas

Variations in food consumption patterns also existed among specific governorates within the same geographic area. This part specifies these variations (for 1990/1991) by governorate and by food group. For purposes of comparison, the governorates with the highest and lowest expenditure are placed side by side for each food group (for both urban and rural areas) (see table 28). (No data are available for the consumption of individual commodities at the governorate level).

Table 28. Variations in average annual expenditure per household among individual governorates in Egypt in 1990/1991, by food group

Food group	Urban Egypt				
	Governorate with highest expenditure		Governorate with lowest expenditure		
	Governorate	Expenditure (1) (LE)	Governorate	Expenditure (2) (LE)	(2)X100 (1)
Grains and starches	Kafr El-Sheikh	647.75	Damietta	396.01	61.14
Dry legumes	Qena	156.32	Menia	27.99	17.91
Vegetables	Ismailia	386.63	Menia	204.10	52.79
Fruits	Damietta	268.56	Suhag	111.74	41.61
Meat and poulty	Beni-Suef	861.73	Behera	512.21	59.44
Fish	Port Said	532.98	Menia	56.66	10.63
Eggs	Aswan	122.25	Behera	44.23	36.18
Milk and dairy products	Port Said	393.34	Fayoum	112.60	28.63
Oils and fats	Ismailia	271.07	Damietta	140.95	52.00
Sugar and sugar commodities	Asyout	184.49	Kafr El-Sheikh	103.16	55.92
Other food commodities	Beni-Suef	192.66	Aswan	50.25	26.08
Beverages	Aswan	145.75	Suez	73.09	50.15
Food and beverages (total)	Port Said*	3 467.22	Fayoum*	2 221.64	64.07
Total expenditure	Port Said*	7 556.90	Fayoum*	4 193.83	55.50

Food group	Rural Egypt				
	Governorate with highest expenditure		Governorate with lowest expenditure		
	Governorate	Expenditure (1) (LE)	Governorate	Expenditure (2) (LE)	(2) X 100 (1)
Grains and starches	Kafr El-Sheikh	1 106.65	Aswan	519.38	46.93
Dry legumes	Aswan	165.52	Fayoum	44.12	26.66
Vegetables	Ismailia	691.84	Menia	173.57	25.09
Fruits	Giza	1 183.34	Beni-Suef	61.70	5.21
Meat and poultry	Ismailia	1 306.42	Sharkia	488.42	37.39
Fish	Damietta	344.76	Menia	17.88	5.19
Eggs	Aswan	117.50	Behera	44.19	37.61
Milk and dairy products	Damietta	316.71	Fayoum	88.66	28.00
Oils and fats	Kalyoubia	354.93	Damietta	106.59	30.03
Sugar and sugar commodities	Asyout	168.22	Aswan	88.86	52.82
Other food commodities	Kalyoubia	178.71	Aswan	19.53	10.93
Beverages	Menoufia	137.84	Aswan	54.65	39.65
Food and beverages (total)	Ismailia*	4 076.99	Menia*	2 127.97	52.19
Total expenditure	Ismailia*	7 049.05	Menia*	3 341.28	47.40

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure, and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* Food and beverages totals and total expenditure figures do not reflect the sums of the column figures, but rather represent the figures for those governorates with the highest or lowest food and beverage totals or total expenditure.

Table 28 indicates that average annual household expenditure on grains and starches in urban areas of Damietta Governorate was about 61.14 per cent of the corresponding expenditure in urban areas of Kafr El-Sheikh. Although Damietta and Kafr El-Sheikh are adjacent governorates on the northern coast of Egypt, the differences between them were high. Average annual expenditure per household on grains and starches in rural areas of Aswan Governorate constituted about 46.93 per cent of the corresponding average for rural areas of Kafr El-Sheikh.

With respect to dry legumes, average annual expenditure per household in urban areas of Menia Governorate was about 17.91 per cent of the corresponding average for urban areas of Qena Governorate. Average annual expenditure per household on dry legumes in rural areas of Fayoum Governorate was about 26.66 per cent of the corresponding average for rural areas of Aswan Governorate. This indicates that variations in household expenditure among the Upper Egypt governorates were high among urban areas and among rural areas (i.e., both urban-to-urban and rural-to-rural discrepancies were great).

Average annual expenditure per household on vegetables in rural areas of Menia Governorate was about 52.79 per cent of the corresponding average for urban areas of Ismailia Governorate; however, average annual expenditure per household on vegetables in rural areas of Menia Governorate was only about 25.09 per cent of the corresponding average for rural areas of Ismailia Governorate. It should be mentioned that high levels of expenditure per household on vegetables at both urban and rural area levels were observed in Lower Egypt, while low levels of expenditure on vegetables were observed in Upper Egypt. This situation may be explained by variations in cropping patterns between Upper and Lower Egypt.

With regard to fruits, average annual expenditure per household in urban areas of Suhag Governorate was about 41.61 per cent of the corresponding average for urban areas of Damietta Governorate, while average expenditure per household on fruits in rural areas of Beni-Suef was only about 5.21 per cent of the corresponding average for rural areas of Giza Governorate. This indicates very high variations between the rural areas of the Beni-Suef and Giza Governorates, in spite of the fact that the governorates are adjacent.

Average annual expenditure per household on poultry and meat in urban areas of Behera Governorate was about 59.44 per cent of the corresponding average for urban areas of Beni-Suef Governorate. For rural areas, average expenditure per household in Sharkia Governorate was about 37.39 per cent of the corresponding average for rural areas of Ismailia Governorate, even though the governorates are adjacent.

With respect to the fish group, average annual expenditure per household in urban areas of Menia Governorate was about 10.63 per cent of the corresponding average for urban areas of Port Said Governorate. Average annual expenditure per household on the fish group in rural areas of Menia Governorate was about 5.19 per cent of the corresponding average for rural areas of Damietta Governorate. This indicates that the level of fish consumption was higher in both the rural and urban areas of the coastal governorates (Port Said, Damietta, Kafr El-Sheikh and Ismailia) than in the governorates of the Upper Egypt region; the proximity of the governorate to the coast clearly affects food consumption patterns, especially in the case of fish.

Variations among governorates also existed with respect to average annual expenditure per household on food and beverages in 1990/1991. Average annual expenditure per household on food and beverages in urban areas of Fayoum Governorate was about 64.07 per cent of the corresponding average for urban areas of Port Said Governorate. At the rural area level: average annual expenditure per household on food and beverages in rural areas of Menia Governorate was about 52.19 per cent of the corresponding average for rural areas of Ismailia Governorate. This indicates that average annual expenditure on food and beverages in urban and rural areas of Upper Egypt was lower than the corresponding average for urban and rural areas of Lower Egypt. This result was also concluded with regard to variations by geographic region in a previous section of this study.

Total average annual expenditure per household in urban areas of Fayoum Governorate was about 55.5 per cent of the corresponding average for urban areas of Port Said Governorate, and total average annual expenditure per household in rural areas of Menia Governorate was about 47.4 per cent of the corresponding average for rural areas of Ismailia Governorate. This result confirms that there were high variations among governorates of the same type (i.e., urban/urban and rural/rural) with respect to total average annual expenditure per household.

Based on a comparison between governorates with the highest and lowest average annual expenditure per household, the following conclusions can be stated. First, there were high levels of variation among urban areas for the following food groups: fish, dry legumes, other food commodities, and milk and dairy products. Respective levels of expenditure for the lowest governorates on these groups were about 10.63, 17.91, 26.08 and 28.63 per cent of the corresponding expenditure levels for the highest governorates. Second, the levels of variations among rural areas were clearest for following food groups: fish, fruits, other food commodities, vegetables, dry legumes, and milk and dairy products. The respective levels of expenditure for the lowest governorates on these groups were about 5.19, 5.21, 10.93, 25.09, 26.66, and 28 per cent of the corresponding levels of expenditure for the highest governorates.

Third, variations also existed with respect to average annual expenditure on food and beverages and for total average annual expenditure per household. These variations between the highest and lowest governorate expenditures (i.e., lowest as a proportion of highest expenditure) were about 64.07 and 55.5 per cent, respectively, in urban areas against 52.19 and 47.4 per cent, respectively, in rural areas. The preceding discussion shows the high levels of variation among rural governorates against the somewhat lower variations among urban governorates.

It should be noted that overall expenditure was slightly higher in the urban than in the rural areas. The fact that the prices were relatively higher in rural than in urban areas may have something to do with both the slight urban-rural discrepancy and the relatively higher inter-rural variations in consumed quantities. These conclusions also indicate that further research is needed concerning variations in food consumption patterns in the various geographic regions and districts within governorates.

3. Householder occupation

There are proven variations in food expenditure/consumption patterns both within and between the rural and urban areas; this part focuses on the former (i.e., variations within each type of area), specifically dealing with average annual expenditure per household by householder occupation in both urban and rural areas in 1981/1982. The subsequent parts deal with average annual expenditure by employment status and by household size. The main objective is to identify the variations among the specific classifications within each variable or dimension in the various rural areas, and also in the various urban areas (i.e., to shed more light on the reasons or sources of the overall variations within these areas).

Average annual expenditure per household exceeded the corresponding aggregate average for urban Egypt in the case of the following occupations (see table 29): administrative and managerial workers, professionals plus technical and related workers, sales workers, and clerical workers, while this average was below the corresponding aggregate average in the case of the other occupational classes listed in table 29. The total average annual expenditure per household by service workers was about 49.86 per cent of the corresponding average for administrative and managerial workers. A similar result was obtained for both classes with respect to average annual expenditure on food and beverages (60.72) (see table 29).

Considering the overall occupational average for urban Egypt as a base for comparison (i.e., index = 100), it is observed that average annual expenditure on all of the individual food groups was high for administrative and managerial workers and sales workers. For clerical workers, average annual expenditure per household on all food groups except grains and starches was also high. While average annual expenditure per household was high for professionals and technical and related workers for all food groups except grains and starches, dry legumes and other food commodities, the average annual expenditure for other classes of householder occupation was below the aggregate average for urban Egypt in the case of most food groups except grains and starches (for service workers, farmers, fishermen, animal breeders and hunters, and production workers) and dry legumes, vegetables, and sugar commodities (for farmers and animal breeders and production workers).

Taking the aggregate (overall occupational) average annual expenditure for rural Egypt as a base for comparison (see table 30), it can be concluded that average annual expenditure was high for the following classes: administrative and managerial workers, clerical workers, production workers, and farmers and animal breeders, while this average was below the corresponding aggregate average for rural Egypt for the other householder occupations. Average annual expenditure for professionals and technical and related workers was about 49.96 per cent of the corresponding average for managerial and administrative workers. The average annual expenditure on all food groups was high (compared to the corresponding aggregate average) for the following classes: managerial and administrative workers, clerical workers, sales workers, and farmers and animal breeders. For other classes, this average for all food groups was below the corresponding aggregate average for rural Egypt (see table 30).

4. Householder employment status

In urban areas of Egypt, for 1981/1982, average annual expenditure per household by the self-employed, those seeking work (old),* employers, and workers with money wage was high compared to the corresponding aggregate average for urban Egypt, while the others (those working with family for no wage and those seeking work [new]) were below the aggregate average for urban Egypt (see table 31). Average annual expenditure per household by those working with the family for no wages was about 48.62 per cent of the corresponding average for the self-employed class. For the self-employed, average annual expenditure on all food groups was high in comparison with the corresponding aggregate average for urban Egypt in 1981/1982. For the employer class, and for workers receiving a (monetary) wage, average annual expenditure was also high compared to the corresponding aggregate average for urban Egypt in the case of the following food groups: grains and starches, dry legumes, vegetables, poultry and meat, oils and fats, other food commodities, and food and beverages. For other classes of workers—those working with family for no wage, those seeking work (both old and new), the average annual expenditure was below the corresponding aggregate average annual expenditure for urban Egypt for all food groups (see table 31).

As table 32 indicates, in rural areas of Egypt, average annual expenditure by the self-employed, those working with family for no wage, and workers receiving a wage was high in comparison with the corresponding aggregate average annual expenditure for rural Egypt. Those with an average below the corresponding aggregate average for rural Egypt included employers and those seeking work (old and new). For those working with family for no wage, it was noticed that the average annual expenditure of this class exceeded the corresponding aggregate average for rural Egypt, while the opposite was true for this class in urban Egypt, because most people of this group in rural Egypt work in the agricultural sector, and are therefore virtually self-sufficient. Average annual expenditure for this class (those working with family for no wage) was high in the case of the following groups: grains and starches, vegetables, meat and poultry, milk and dairy products, oils and fats, sugar and sugar commodities, and food and beverages. It should also be mentioned that average annual expenditure per household for the self-employed and for workers receiving a wage exceeded the corresponding aggregate average for rural Egypt in the case of all food groups.

5. Household size

Three sizes of household were chosen to evaluate variations within rural and urban areas in 1981/1982. The sizes selected included households with three individuals, those with six individuals, and those with nine individuals. It should be mentioned that average family size in 1981/1982 was about 5.23 and 5.59 persons for urban and rural areas in Egypt, respectively (see tables 33 and 34).

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* "Old" and "new", in the context of this part of the study, refers to those who had been seeking work for a long period of time (old) and those that had only relatively recently begun searching for employment (new).

Table 29. Average annual expenditure per household in urban areas of Egypt in 1981/1982, by householder occupation and by food group

Food group	Professionals + technical and related workers		Administrative and managerial workers		Clerical workers		Sales workers		Service workers		Farmers and animal breeders		Production and related workers		Aggregate average for all occupations	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	93.6	89.74	109.8	105.27	102.8	98.56	109.6	105.08	106.9	102.49	152.6	146.31	107.1	102.68	104.3	100
Dry legumes	19.7	95.17	24.5	118.36	20.8	100.48	22.4	108.21	19.8	95.65	25.4	122.71	21.1	101.93	20.7	100
Vegetables	79.3	100.38	95.5	120.89	81.5	103.16	81.8	103.54	73.9	93.54	81.5	103.16	82.0	103.80	79.0	100
Fruits	65.8	131.08	87.9	175.10	57.3	114.14	57.7	114.94	38.1	75.90	35.0	96.27	47.4	94.42	50.2	100
Meat and Poultry	199.7	116.31	286.2	166.69	181.5	105.71	193.8	112.87	146.3	85.21	165.3	96.27	162.3	94.53	171.7	100
Fish	36.6	104.27	57.3	163.25	36.9	105.13	40.6	115.67	29.8	84.90	31.0	88.32	34.5	98.29	35.1	100
Eggs	30.5	133.19	39.1	170.74	26.5	115.72	23.1	100.87	18.5	80.79	19.0	82.97	20.7	90.39	22.9	100
Milk and dairy products	90.0	135.14	108.8	163.36	75.1	112.76	69.5	104.35	50.6	75.97	54.7	82.13	62.2	93.39	66.6	100
Oils and fats	69.2	113.63	84.1	138.09	62.1	101.97	63.0	103.45	51.9	85.22	74.9	122.99	58.6	96.22	60.9	100
Sugar and sugar commodities	45.5	109.37	55.9	134.37	43.5	104.57	42.9	103.12	36.2	87.02	43.7	105.05	44.7	107.45	41.6	100
Other food commodities	23.0	68.05	35.4	104.73	33.3	98.52	38.0	112.43	34.6	102.37	24.3	71.89	37.6	111.24	33.8	100
Beverages	42.7	128.23	57.9	173.87	37.1	111.41	35.5	106.61	26.3	78.98	28.7	86.19	31.2	93.69	33.3	100
Food and beverages (total)	805.5	111.86	1 042.4	144.76	758.2	105.29	777.8	108.01	632.9	87.89	736.0	102.21	709.4	98.51	520.1	100
Total expenditure	1 739.0	120.65	2 397.8	166.36	1 562.7	108.42	1 606.9	111.49	1 195.6	82.95	1 294.5	89.81	1 378.2	95.62	1 441.3	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

Table 30. Average annual expenditure per household in rural areas of Egypt in 1981/1982, by householder occupation and by food group

Food group	Professionals + technical and related workers		Administrative and managerial workers		Clerical workers		Sales workers		Service workers		Farmers and animal breeders		Production workers and related workers		Aggregate average for all occupations	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	108.5	76.25	185.3	130.22	147.7	103.79	149.4	104.99	144.1	101.26	156.9	110.26	139.2	97.82	142.3	100
Dry legumes	20.3	80.88	43.9	174.90	26.6	105.98	28.0	111.55	24.7	98.40	26.7	106.37	26.5	105.58	25.1	100
Vegetables	56.5	86.44	98.6	151.93	69.4	106.93	72.8	112.17	67.4	103.85	67.6	104.16	72.5	111.71	64.9	100
Fruits	25.8	86.87	61.9	208.42	37.7	126.94	40.3	135.69	29.5	99.33	30.1	101.35	34.3	115.49	29.7	100
Meat and poultry	138.4	92.14	246.6	164.18	159.1	105.93	168.4	112.12	139.0	92.54	161.6	107.59	156.0	103.86	150.2	100
Fish	20.4	80.00	47.8	187.45	32.4	127.06	30.4	119.22	25.9	101.57	26.2	102.75	30.3	118.82	25.5	100
Eggs	13.4	91.78	36.0	246.57	17.4	119.18	17.3	118.49	13.9	95.20	15.3	104.79	16.2	110.96	14.6	100
Milk and dairy products	31.7	85.91	58.0	157.18	41.4	112.19	38.2	103.52	31.1	84.28	42.0	113.82	33.6	91.06	36.9	100
Oils and fats	62.9	95.30	97.5	147.73	65.7	99.55	75.9	115.00	61.6	93.33	72.9	110.45	62.4	94.54	66.0	100
Sugar and sugar commodities	35.4	92.67	66.9	175.13	43.4	113.61	46.8	122.51	37.4	97.90	40.4	105.76	40.2	105.23	38.2	100
Other food commodities	15.9	91.38	31.2	179.31	17.8	102.30	20.8	119.54	19.2	110.34	16.5	94.83	25.4	145.98	17.4	100
Beverages	23.5	108.80	44.1	204.17	22.4	103.70	28.3	131.02	20.6	95.37	22.1	102.31	23.8	110.19	21.6	100
Food and beverages (total)	552.4	87.33	1 017.6	160.88	681.0	107.67	716.6	113.30	614.5	97.15	678.4	107.26	660.3	104.39	632.5	100
Total expenditure	974.5	89.44	1 950.4	179.02	1 324.5	121.57	1 285.0	117.94	1 080.4	99.16	1 136.6	104.32	1 189.8	109.21	1 089.5	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

Table 31. Average annual expenditure per household in urban areas of Egypt in 1981/1982, by householder employment status and by food group

Food group	Employees receiving a wage		Self-employed		Employer		Work with family, without a wage		Seeking work (old)		Seeking work (new)		Aggregate average for all employment categories	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	117.9	113.04	142.2	136.34	104.0	99.71	81.2	77.85	78.6	75.36	80.1	76.70	104.3	100
Dry legumes	21.9	105.80	27.5	132.85	20.7	100.00	10.7	51.69	19.4	93.72	16.4	79.23	20.7	100
Vegetables	80.8	102.28	96.1	121.64	80.0	101.26	54.8	69.37	72.6	91.90	77.6	98.23	79.0	100
Fruits	48.7	97.01	65.7	130.88	51.4	102.39	33.3	66.33	49.8	99.20	52.3	104.18	50.2	100
Meat and poultry	173.9	101.28	229.2	133.49	172.8	100.64	117.5	68.43	129.4	75.36	131.0	76.29	171.7	100
Fish	35.0	99.71	53.5	152.42	34.1	97.15	9.0	25.64	53.2	151.57	23.6	67.24	35.1	100
Eggs	21.1	92.14	26.3	114.85	24.0	104.80	11.0	48.03	11.2	48.91	27.6	120.52	22.9	100
Milk and dairy products	63.6	95.49	81.6	122.52	69.1	103.75	46.0	69.07	62.2	93.39	72.1	108.26	66.6	100
Oils and fats	63.0	103.45	80.7	132.51	60.2	98.85	47.8	78.49	27.2	44.66	41.9	68.80	60.9	100
Sugar and sugar commodities	40.3	96.87	53.1	127.64	43.9	105.53	34.8	83.65	31.6	75.96	48.6	116.83	41.6	100
Other food commodities	35.0	103.55	37.1	109.76	34.4	101.77	25.2	74.56	46.2	136.69	32.0	94.67	33.8	100
Beverages	32.5	97.60	44.0	132.13	33.8	101.50	16.7	50.15	27.6	82.88	28.7	86.19	33.3	100
Food and beverages (total)	733.6	101.87	937.0	130.12	728.3	101.14	488.0	67.77	609.0	84.57	631.9	87.75	720.1	100
Total expenditure	1 442.7	100.10	1 903.3	132.05	1 464.6	101.62	925.3	64.20	1 882.8	130.63	1 308.9	90.81	1 441.3	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

Table 32. Average annual expenditure per household in rural areas of Egypt in 1981/1982, by householder employment status and by food group

Food group	Employees paid a wage		Self-employed		Employer		Work with family, not paid a wage		Seeking work (old)		Seeking work (new)		Aggregate average for all employment categories	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	153.8	108.08	180.0	126.49	137.0	96.27	169.3	118.97	155.5	109.28	114.6	80.53	142.3	100
Dry legumes	27.4	109.16	30.2	120.32	24.4	97.21	13.8	54.98	34.5	137.45	25.8	102.79	25.1	100
Vegetables	69.7	107.76	75.5	116.33	64.5	99.38	67.2	103.54	73.5	113.25	49.7	76.58	64.9	100
Fruits	32.6	109.76	34.7	116.83	30.1	101.35	27.4	92.25	15.5	52.19	20.2	68.01	29.7	100
Meat and poultry	162.0	107.86	182.3	121.37	146.0	97.20	177.2	117.98	26.0	17.64	105.9	70.50	150.2	100
Fish	28.1	110.20	31.0	121.57	25.1	98.43	19.5	76.47	..	..	33.0	129.41	25.5	100
Eggs	16.6	113.70	17.2	117.81	14.3	97.94	14.3	97.94	04.5	30.82	11.7	80.14	14.6	100
Milk and dairy products	42.0	113.82	53.3	144.44	31.1	84.28	43.9	118.97	30.0	81.30	47.7	129.27	36.9	100
Oils and fats	73.1	110.76	82.3	124.70	62.3	94.39	90.2	136.67	16.0	24.24	55.3	83.79	66.0	100
Sugar and sugar commodities	40.9	107.07	48.3	126.44	36.9	96.60	49.4	129.32	27.5	71.99	24.9	65.18	38.2	100
Other food commodities	18.3	105.17	17.3	99.42	19.1	109.77	13.8	79.31	08.5	48.85	19.0	109.19	17.4	100
Beverages	23.1	106.94	26.1	120.83	21.0	97.22	20.3	93.98	11.5	53.24	12.6	58.33	21.6	100
Food and beverages (total)	687.6	108.71	778.0	123.00	611.8	96.73	706.1	111.64	403.5	63.79	520.4	82.28	632.5	100
Total expenditure	1 189.0	109.13	1 301.7	119.48	1 069.4	98.15	1 239.6	113.78	748.0	68.65	827.7	75.97	1 089.5	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

The average family size in both rural and urban areas in Egypt in 1981/1982 can be approximated at six persons. It should be noted that the aggregate average annual expenditure per household for both rural and urban areas most closely matched this median family size (six persons); average annual expenditure for the latter was only 1.1 per cent higher than the rural and 4.36 per cent higher than the urban aggregate average for 1981/1982. Given this, comparison in the following discussion will be conducted among the various household sizes, with households of six people serving as the average for this comparison. Variations in annual expenditure are discussed by household size and by expenditure item in the following discussion and in tables 33 and 34.

Table 33. Average annual expenditure per household in urban areas of Egypt in 1981/1982, by household size and by food group

Food group	Urban Egypt							
	3 persons		6 persons		9 persons		Aggregate average for all household sizes	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	76.5	73.35	111.5	106.90	156.3	149.86	104.3	100
Dry legumes	16.8	81.16	21.4	103.38	30.0	144.93	20.7	100
Vegetables	64.7	81.90	83.1	105.19	103.7	131.27	79.0	100
Fruits	45.7	91.03	51.8	103.19	57.4	114.34	50.2	100
Meat and poultry	156.8	91.32	178.1	103.73	212.2	123.59	171.7	100
Fish	31.3	89.17	37.2	105.98	49.2	140.17	35.1	100
Eggs	21.7	94.76	24.0	104.80	26.4	115.28	22.9	100
Milk and dairy products	60.9	91.44	68.7	103.15	70.9	106.46	66.6	100
Oils and fats	54.8	89.98	63.3	103.94	77.3	126.93	60.9	100
Sugar and sugar commodities	31.2	75.00	44.1	106.01	54.4	130.77	41.6	100
Other food commodities	27.0	79.88	35.6	105.33	47.5	140.53	33.8	100
Averages	29.0	87.09	34.2	102.70	43.2	129.73	33.3	100
Food and beverages (total)	616.3	85.59	752.8	104.54	928.5	128.94	720.1	100
Total expenditure	1 301.5	90.30	1 504.1	104.36	1 737.0	120.52	1 441.3	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

Average annual expenditure for a household of nine in urban areas was estimated at about LE 1,737. This average exceeded the corresponding average for a household of three by about 33.46 per cent, against 79.06 per cent for the corresponding two groups in rural areas. The much higher variations among rural households should be noted.

Table 34. Average annual expenditure per household in rural areas of Egypt in 1981/1982, by household size and by food group

Food group	Rural Egypt							
	3 persons		6 persons		9 persons		Aggregate average for all household sizes	
	(LE*)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	102.2	71.82	144.2	101.34	202.7	142.45	142.3	100
Dry legumes	17.0	67.73	24.7	98.41	35.5	141.43	25.1	100
Vegetables	47.1	72.57	66.2	102.00	87.0	134.05	64.9	100
Fruits	21.0	70.71	29.8	100.34	38.7	130.30	29.7	100
Meat and poultry	115.7	77.03	154.1	102.60	198.6	132.22	150.2	100
Fish	17.2	67.45	26.6	104.31	32.2	126.27	25.5	100
Eggs	10.4	71.23	15.0	102.74	18.1	123.97	14.6	100
Milk and dairy products	23.5	63.68	35.7	96.75	53.2	144.17	36.9	100
Oils and fats	49.9	75.61	67.2	101.82	89.1	135.00	66.0	100
Sugar and sugar commodities	23.9	62.56	39.3	102.88	54.7	143.19	38.2	100
Other food commodities	13.2	75.86	18.1	104.02	20.6	118.39	17.4	100
Averages	14.6	67.59	22.0	101.85	29.1	134.72	21.6	100
Food and beverages (total)	445.8	70.48	642.7	101.61	859.5	135.89	632.5	100
Total expenditure	808.1	74.17	1 101.5	101.10	1 447.0	132.81	1 089.5	100

Source: Compiled and computed from Egypt, Central Agency for Public Mobilisation and Statistics, Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic).

* LE = Egyptian pounds.

Variations were also observed in average annual expenditure per household on food and beverages. This average for a household of nine exceeded the corresponding average for a household of three by about 50.66 and 92.8 per cent in urban and rural areas, respectively. Again, the variations between rural households of different sizes were higher than the corresponding variations in urban areas; in fact, the variations were even greater for food and beverages than for total average annual expenditure on all food groups, the main reason being that total average annual expenditure included some items which did not change according to household size.

IV. VARIATIONS IN FOOD CONSUMPTION PATTERNS ACCORDING TO PER CAPITA INCOME IN URBAN AND RURAL EGYPT

Household income, or per capita income, is considered one of the most important factors affecting Egyptian consumption patterns. It is thus expected that variations in per capita income between urban and rural areas and among governorates within the same region affect food consumption patterns and result in differences among regions and within the same region. The first part of this chapter deals with the study of developments in income, developments in final consumption components at the country-wide level, developments in household consumption expenditure by region (rural versus urban) during the period 1981/1982 to 1991/1992, and finally, a comparison between items of household consumption expenditure.

As mentioned before, both per capita income and income distribution among the various classes and population groups affect Egyptian food patterns. The available primary data on income, expenditure, and consumption in 1990/1991 (CAPMAS, 1992b) do not include sufficient details about income distribution; therefore, data from the 1981/1982 Household Budget Survey are used in order to give an approximation of income distribution between urban and rural households. For variations in household income distribution according to source of income (discussed by geographic region and/or by governorate), 1990/1991 data from the study on income, expenditure and consumption (CAPMAS, 1992b) are used.

Near the end of this chapter, changes in expenditure elasticity for major food groups are discussed. Two statistical forms are used for elasticity estimation to understand and measure the major changes in expenditure elasticities between 1981/1982 and 1991/1992 in both rural and urban areas. The final part specifically covers the effect of increased income on food consumption.

A. Developments in national income and consumption

The Third Five-Year Plan for Economic and Social Development offers basic data related to income and consumption during the period 1981/1982 to 1991/1992, including figures on national income (GNP at cost of production factors), and total final consumption expenditure (household expenditure and aggregate expenditure). This part discusses developments in GNP and the components of final consumption. Average annual growth rate is computed for the periods 1981/1982 to 1986/1987, 1986/1987 to 1991/1992, and 1981/1982 to 1991/1992. Thereafter, developments in final household expenditure in rural and urban areas of Egypt during the period 1981/1982 to 1991/1992 are discussed. Primary data for 1990/1991 from the study on income, expenditure, and consumption (CAPMAS, 1992b) include statistics on average annual expenditure per household for each basic item of expenditure; these data can thus be compared with the corresponding data from the 1981/1982 Household Budget Survey.

Household Budget Survey

As table 35 indicates, Egypt's GNP was an estimated LE 20,628 million in 1981/1982, increasing to about LE 48,765 million in 1986/1987 and to about LE 125,485 million in 1991/1992. The average annual growth rate for GNP was an estimated 18.78, 20.81, and 19.79 per cent for the periods 1981/1982 to 1986/1987, 1986/1987 to 1991/1992, and 1981/1982 to 1991/1992,

respectively. Total final consumption expenditure was estimated at LE 18,069.1 million, LE 41,432 million, and LE 122,156 million in 1981/1982, 1986/1987 and 1991/1992, respectively. Average annual growth rate for total final consumption was estimated at 18.05, 24.14 and 21.06 per cent during the periods 1981/1982 to 1986/1987, 1986/1987 to 1991/1992, and 1981/1982 to 1991/1992, respectively. This indicates that the annual growth rate for total final consumption exceeded the corresponding annual growth rate for GNP during the 1986/1987 to 1991/1992 and 1981/1982 to 1991/1992 periods. The high average annual growth rate for total final consumption was mainly due to the high average annual growth rate for household expenditure in comparison with the corresponding rate for aggregate expenditure during the two periods (see table 35).

Average annual expenditure on food and beverages was estimated at about LE 7,068.7 million in 1981/1982, or 39.12 per cent of total final consumption expenditure for the same year. After that, expenditure of food and beverages increased continuously—up to about LE 56,307.6 million in 1991/1992, or 46.09 per cent of total final consumption for the same year. Of all the items listed, food and beverages not only represented the highest proportion of final consumption expenditure, but also showed the highest rate of annual growth over the whole period 1981/1982 to 1991/1992. With respect to the former aspect, food and beverages as a proportion of total final consumption expenditure increased from 39.12 per cent in the first year to 46.09 in the last year of the period studied.

An analysis of table 36 indicates that the average annual growth rate for total household expenditure was an estimated 22.12 and 23.01 per cent for urban and rural areas, respectively, over the period 1981/1982 to 1991/1992. The average annual growth rate for food and beverages was an estimated 22.68 per cent for urban areas and 23.56 per cent for rural areas during the same period; the average annual growth rate is slightly higher for items of consumption expenditure in rural areas than in urban areas. According to data from the Ministry of Planning and the household budget surveys for 1981/1982 and 1990/1991, average annual household expenditure on food and beverages varied greatly over the decade-long period.

According to table 37, average annual consumption expenditure for each Egyptian household was an estimated LE 1,267.05 in 1981/1982, rising to about LE 5,310.05 in 1990/1991—an average annual increase of about LE 4,043, or 319.09 per cent.

It should be mentioned that the consumer price index increased 4.48 times in urban areas and 4.4 times in rural areas during the period 1981 to 1990, while the Egyptian household consumption expenditure index increased 4.19 times during the same period. Items of expenditure for which there were high increases can be ranked as follows: payments and instalments rose by 1,026.34 per cent); culture, sports and recreation by 837.41 per cent; education by 681.82 per cent; health care by 637.03 per cent; and transportation and communications by 450.87 per cent. These items were included in service expenditure, and were characterized by high coefficients of expenditure elasticity. Furthermore, these items constituted about 9.47 and 16.65 per cent of total average annual consumption expenditure for the Egyptian household in 1981/1982 and 1990/1991, respectively.

Table 35. Annual final consumption expenditure and average annual growth rates during the period 1981/1982 to 1991/1992

Item of expenditure	1981/1982		1986/1987		Average annual growth rate, 1981/1982-1986/1987 (percentage)
	(millions of LE*)	(percentage)	(millions of LE)	(percentage)	
Food and beverages	7 068.7	39.12	17 722.0	42.77	20.18
Non-food items	3 824.0	21.16	9 757.5	23.55	20.60
Commodity expenditure (subtotal)	10 892.7	60.28	27 479.5	66.32	20.33
Service expenditure	3 592.3	19.88	7 320.5	17.67	15.30
Total household expenditure (subtotal)	14 485.0	80.16	34 800.0	83.99	19.16
Total aggregate expenditure	3 584.1	19.84	6 632.0	16.01	13.10
Total final consumption expenditure	18 069.1	100	41 432.0	100	18.05
Gross national product (GNP)	20 628.0		48 765.0		18.78

Item of expenditure	1991/1992		Average annual growth rate	
	(millions of LE)	(percentage)	1986/1987-1991/1992 (percentage)	1981/1982-1991/1992 (percentage)
Food and beverages	56 307.6	46.09	26.01	23.06
Non-food items	26 714.0	21.87	22.31	21.46
Commodity expenditure (subtotal)	83 021.6	67.96	24.75	22.52
Service expenditure	27 004.4	22.11	29.83	22.35
Total household expenditure (subtotal)	110 026.0	90.07	25.89	22.48
Total aggregate expenditure	12 130.0	9.93	12.83	12.97
Total final consumption expenditure	122 156.0	100	24.14	21.06
Gross national product (GNP)	125 485		20.81	19.79

Source: Compiled and computed from: Egypt, Ministry of Planning, The Third Five-Year Plan for Socio-Economic Development, 1992/1993-1996/1997, volume 1, April 1992 (in Arabic).

* LE = Egyptian pounds.

Items for which there were moderate increases between 1981/1982 and 1990/1991 include the following: food and beverages (307.8 per cent), furniture and equipment (333.63 per cent); and other items (335.75 per cent). All of these items combined constituted about 61.52 and 60.38 per cent of the total annual consumption expenditure for the Egyptian household in 1981/1982 and 1990/1991, respectively.

Items for which there was a relatively low increase over the same period include: clothes (206.88 per cent); restaurants and coffee shops (222 per cent); cigarettes, tobacco and narcotics (229.91 per cent); and housing (260.16 per cent). These items constituted about 29.01 and 22.98 per cent of the total annual consumption expenditure for the Egyptian household in 1981/1982 and 1990/1991, respectively.

Table 36. Household consumption expenditure in urban and rural Egypt during the period 1981/1982 to 1991/1992, by item
(Millions of LE*)

Item	1981/1982			1986/1987			1991/1992		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Food and beverage expenditure	4 096.0	2 972.7	7 068.7	10 302.6	7 419.4	17 722.0	31 643.4	24 664.2	56 307.6
Non-food item expenditure	2 295.4	1 528.6	3 824.0	5 623.3	4 134.2	9 757.5	15 373.4	11 340.6	26 714.0
Commodity expenditure (subtotal)	6 391.4	4 501.3	10 892.7	15 925.9	11 553.6	27 479.5	47 016.8	36 004.8	83 021.6
Service expenditure	2 431.0	1 161.3	3 592.3	4 621.4	2 699.1	7 320.5	18 067.5	8 936.9	27 004.4
Total household consumption expenditure	8 822.4	5 662.6	14 485.0	20 547.3	14 252.7	34 800.0	65 084.3	44 941.7	110 026.0
Item	(each item as a percentage of total household expenditure)								
Food and beverage expenditure	46.43	52.5	48.8	50.14	52.06	50.93	48.62	54.88	51.18
Non-food item expenditure	26.02	27.0	26.4	27.37	29.00	28.04	23.62	25.23	24.28
Commodity expenditure (subtotal)	72.45	79.5	75.2	77.51	81.06	78.97	72.24	80.11	75.46
Service expenditure	27.55	20.5	24.8	22.49	18.94	21.03	27.76	19.89	24.54
Total household consumption expenditure	100	100	100	100	100	100	100	100	100

Source: Compiled and computed from: Egypt, Ministry of Planning, The Third Five-Year Plan for Socio-Economic Development, 1992/1993 to 1996/1997, volume 1, April 1992 (in Arabic).

* LE = Egyptian pounds.

Table 37. Average annual consumption expenditure per Egyptian household and percentage of change during the period 1981/1982 to 1990/1991, by main items of expenditure

Item	1981/1982 Average expenditure (1) (LE*)	1981/1982 Average expenditure (1) (percentage)	1990/1991 Average expenditure (2) (LE)	1990/1991 Average expenditure (2) (percentage)	Percentage of change (3) (3)=(2)-(1)X100 (1)
Food and beverages	677.61	53.48	2 763.28	52.04	307.80
Cigarettes, tobacco and narcotics	69.50	5.49	229.29	4.32	229.91
Clothes	135.24	10.67	415.03	7.82	206.88
House and related items	133.42	10.53	480.53	9.05	260.16
Furniture	55.42	4.37	240.32	4.53	333.63
Health services	28.25	2.23	208.21	3.92	637.03
Transport and communications	47.53	3.75	261.83	4.93	450.87
Education	16.17	1.28	126.42	2.38	681.82
Culture, sports and recreation	14.57	1.15	136.58	2.57	837.41
Restaurants and coffee shops	29.45	2.32	94.83	1.79	222.00
Other items	46.44	3.67	202.36	3.81	335.75
Total consumption expenditure (subtotal)	1 253.61	98.94	5 158.68	97.15	311.51
Payments and installments	13.44	1.06	151.38	2.85	1 026.34
Total	1 267.05	100	5 310.05	100	319.09

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics (CAPMAS), Collective Results of the Four Rounds of the 1981/82 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic); and CAPMAS, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

B. Income distribution and expenditure: urban-rural disparities

The study on income, expenditure and consumption in Egypt, which was issued in August 1992 (CAPMAS, 1992b), do not deal with the distribution of expenditure or income according to the various monetary classifications or levels. Therefore, data from the 1981/1982 Household Budget Survey is used to compare the variations in annual expenditure among Egyptian households as a proxy for variations in income distribution among households in rural and urban Egypt. In addition, the data on income, expenditure, and consumption in Egypt (CAPMAS, 1992b) deal with income sources and income distribution by geographic region and by governorate. These data may provide some indicators for income distribution among regions and among governorates for both urban and rural Egypt.

Table 38 classifies urban population according to 13 expenditure classes. By dividing the total urban population into five equal sections, from lowest to highest expenditure class—i.e., each part equals 20 per cent of the total urban population of Egypt in 1981/1982—expenditure distribution can be more clearly presented. For urban areas, the first fifth (i.e., the lowest

expenditure class) was responsible for about 7.7 per cent of total expenditure for the urban population. The second, third, fourth, and last fifth groups were responsible for 12.8, 18.5, 20 and 41 per cent, respectively, of the total expenditure for the urban population. This indicates that about 60 per cent of the urban population was responsible for only 39 per cent of total urban expenditure; i.e., 40 per cent of the urban population was responsible for about 61 per cent of total expenditure. To illustrate the disparity: the fourth is responsible for 20 per cent of total expenditure, while the last fifth represents about 40 per cent of expenditure (i.e., double its population share). This indicates that there is some inequality in expenditure distribution within the urban areas—and therefore inequality in income distribution within these areas.

The rural population of Egypt can also be classified into five equal parts (i.e., each part equals 20 per cent of the total rural population for 1981/1982. The first fifth (i.e., lowest to highest) parts were responsible for about 7.3, 14.7, 18.1, 22.9 and 37 per cent of the total expenditure for rural Egypt, respectively. In other words, about 60 per cent of the rural population were below the distribution and were responsible for 40.1 per cent of the total expenditure, while 40 per cent of the rural population was responsible for 59.9 per cent of this expenditure. This indicates that inequality in expenditure for rural Egypt was not as clear as was the case for the urban population. Furthermore, the Gini coefficient (which shows income disparity) indicated a high level of inequality in urban Egypt as compared to rural Egypt (i.e., 0.3244 versus 0.2936)—i.e., lower variations in expenditure distribution in rural Egypt than in urban Egypt (CAPMAS, 1987).

To indicate 1981/1982 variations between households below the distribution and those above, two expenditure classes were chosen for both rural and urban Egypt—(a) those spending less than LE 200 and (b) those spending LE 10,000 and above (see table 39). The main purpose of this selection is to determine variations in household expenditure in both classes by food group. Total annual expenditure for urban households in 1981/1982 in the expenditure class of less than LE 200 was estimated at LE 65—4.51 per cent of the aggregate average for all classes, or 0.44 per cent of the annual expenditure for the LE 10,000-and-above class. This indicates the vast differences existing between households below the distribution and those above.

Total average annual expenditure for a rural household in 1981/1982 in the expenditure class of less than LE 200 was estimated at LE 110.7—i.e., 10.16 per cent of the aggregate average for all expenditure classes, or 0.98 per cent of the average annual expenditure for the class LE 10,000 and above. This shows that in the poorest households, expenditure was only about 1 per cent of that for the households in the highest expenditure class in rural Egypt.

Variations existed with respect to average annual expenditure on some food groups as well as for total average annual expenditure. For example, expenditure by the poorest households in urban Egypt was less than 2 per cent of expenditure for the richest households in urban Egypt for food groups such as fruits (0.51 per cent), beverages (0.59 per cent), fish (0.66 per cent), milk and dairy products (0.78 per cent) and food and beverages (1.61 per cent). In rural Egypt the situation was about the same; expenditure for the poorest households in rural Egypt was 4 per cent or less of expenditure for richest households on food groups such as fish (1.16 per cent), fruits (1.95 per cent), beverages (1.96 per cent), legumes (2.04 per cent), oils and fats (2.08 per cent), and food and beverages (3.13 per cent) (see table 39).

Table 38. Population and expenditure distribution in urban and rural Egypt in 1981/1982, by expenditure class

Expenditure class (LE*)	Urban				Rural			
	Population (percentage)	Cumulative population (percentage)	Expenditure (percentage)	Cumulative expenditure (percentage)	Population (percentage)	Cumulative population (percentage)	Expenditure (percentage)	Cumulative population (percentage)
Less than 200	1.4	1.4	0.1	0.1	1.9	1.9	0.2	0.2
200-400	3.3	4.7	0.7	0.8	5.9	7.8	1.6	1.8
400-600	5.6	10.3	2.0	2.8	10.5	18.3	4.9	6.7
600-800	10.2	20.5	5.0	7.8	15.4	33.7	10.0	16.7
800-1000	13.5	34.0	8.4	16.2	17.6	51.3	14.5	31.2
1000-1300	20.5	54.5	16.3	32.5	21.8	73.1	22.9	54.1
1300-1600	16.6	71.1	16.6	49.1	12.4	85.5	16.3	70.4
1600-2000	12.6	83.7	15.5	64.6	7.5	93.0	12.2	82.6
2000-2500	7.7	91.4	11.8	76.4	3.8	96.8	7.8	90.4
2500-3000	3.3	94.7	6.2	82.6	1.7	98.5	4.2	94.6
3000-4000	3.0	97.7	7.4	90.0	1.0	99.5	2.9	97.5
4000-6000	1.6	99.3	5.2	95.2	0.3	99.8	1.3	98.8
6000 and above	0.7	100	5.8	100	0.2	100	1.2	100
Total	100	100	100	100	100	100	100	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, with ESCWA, Household Budget Survey and Measurement of Variation in Income Distribution, Symposium on a Survey of Expenditure and Income, Cairo, November 1987 (in Arabic).

* LE = Egyptian pounds.

Table 39. Average annual expenditure per Egyptian household for some expenditure classes in rural and urban Egypt in 1981/1982, by food group

Food group	Urban areas						Rural areas					
	Below LE* 200		LE 10,000 and above		Average aggregate expenditure for all classes		LE 200		LE 10,000 and above		Average aggregate expenditure for all classes	
	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)	(LE)	(index)
Grains and starches	7.1	6.81	180.5	173.06	104.3	100	16.5	11.60	349.3	245.47	142.3	100
Dry legumes	2.1	10.14	45.7	220.77	20.7	100	2.0	7.97	97.7	389.24	25.1	100
Vegetables	6.7	8.48	203.5	257.59	79.0	100	10.0	15.41	183.3	282.43	64.9	100
Fruits	1.9	3.78	373.7	744.42	50.2	100	2.7	9.09	138.7	467.00	29.7	100
Meat and Poultry	11.0	6.41	840.9	489.75	171.7	100	21.2	14.11	669.0	445.41	150.2	100
Fish and scallops	1.3	3.70	197.7	563.25	35.1	100	1.9	7.45	164.0	643.14	25.5	100
Eggs	0.9	3.93	81.2	354.58	22.9	100	1.7	11.64	42.0	287.67	14.6	100
Milk and dairy products	2.6	3.90	333.0	500.00	66.6	100	3.7	10.03	139.3	377.51	36.9	100
Oils and fats	2.3	3.78	107.7	176.85	60.9	100	7.0	10.61	335.3	508.03	66.0	100
Sugar and sugar commodities	3.8	9.13	128.9	309.86	41.6	100	4.0	10.47	186.7	488.74	38.2	100
Other food commodities	4.1	12.13	85.6	253.25	33.8	100	3.5	20.11	13.3	76.44	17.4	100
Beverages	1.3	3.90	219.9	660.36	33.3	100	2.6	12.04	132.3	612.50	21.6	100
Food and beverages (total)	45.2	6.28	2 798.4	388.61	720.1	100	76.7	12.13	2 451.0	387.51	632.5	100
Total expenditure	65.0	4.51	14 754.7	1 023.71	1 441.3	100	110.7	10.16	11 218.0	1 029.65	1 089.5	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, with ESCWA, Household Budget Survey and Measurement of Variation in Income Distribution, Symposium on a Survey of Expenditure and Income, Cairo, November 1987 (in Arabic).

* LE = Egyptian pounds.

C. Variations in household income distribution by geographic region

The previous section discusses basic rural-urban variations in household expenditure distribution. This part focuses on variations in household income distribution by geographic region and by sources of income in both rural and urban Egypt. It should be mentioned that the 1990/1991 research on income, expenditure and consumption (CAPMAS, 1992b) is the first study to include data on household income distribution by geographic region and at the governorate level; these types of statistics were not available through the Household Budget Survey. Analysing such data is very important.

According to table 40, average annual income per household in Egypt was estimated at LE 5,400.39 in 1990/1991—about the same as average annual expenditure for each Egyptian household in the same year. This indicates that average annual expenditure per Egyptian household was high relative to income. For an urban household, average annual income in 1990/1991 was estimated at LE 5,600.82 (see subtotal for urban areas, table 40), or about 103.71 per cent of the aggregate annual average for Egypt, whereas average annual income for a rural household in 1990/1991 was an estimated LE 5,110.98, or 94.64 per cent of the aggregate average for Egypt in the same year. Interestingly, the average annual expenditure for households in the urban governorates category exceeded income; the main reason for this was that these households were conservative in their response to enumerators during the survey, and often provided incorrect data about their incomes. The result of all this was that average annual expenditure for households in all urban areas (i.e., aggregate urban average) exceeded the aggregate average annual income per household for urban areas (i.e., annual expenditure represented 100.74 per cent of annual income). As mentioned, this over-100 figure was a result of the relatively high importance of urban governorate households as a proportion of total urban households in Egypt.

Table 40. Variations in average annual income and expenditure per household in Egypt in 1990/1991, by type and location of area

Type of area/geographic region	Households		Average annual expenditure per household		Average annual income per household		Expenditure as a proportion of income (3)
	(number)	(percentage of total)	(LE)* (1)	(index)	(LE) (2)	(index)	(3)=(1)X100 (2)
Urban governorates	3 754	26.15	6 005.43	113.07	5 762.25	106.70	104.22
Urban areas of Lower Egypt	2 377	16.56	5 411.33	101.88	5 534.03	102.47	97.78
Urban areas of Upper Egypt	2 249	15.66	5 276.41	99.34	5 379.68	99.62	98.08
Frontier urban areas	106	0.74	5 683.18	107.00	6 025.93	111.58	94.31
Urban areas (subtotal)	8 486	59.11	5 642.22**	106.23**	5 600.82**	103.71**	100.74**
Rural areas of Lower Egypt	3 303	23.01	5 412.58	101.91	5 682.37	105.22	95.25
Rural areas of Upper Egypt	2 457	17.11	4 078.86	76.8	4 358.65	80.71	93.58
Frontier rural areas	111	0.77	4 296.06	80.89	4 779.11	88.50	89.89
Rurals areas (subtotal)	5 871	40.89	4 829.88**	90.94**	5 110.98**	94.64**	94.50**
Grand total for Egypt	14 357	100%	5 311.28	100	5 400.39	100	98.35%

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

** Aggregate annual average for all areas in this category.

Analysis of the data in table 35 indicates that total final consumption expenditure as a proportion of GNP in 1991/1992 was about 97.4 per cent. Excluding the questionable data for urban governorates and recalculating average annual expenditure as a percentage of average household income in various regions showed that this rate was about 95.65 per cent, with the average of the two (97.4 and 95.65 per cent) being about 96.5 per cent. This would result in an adjusted average annual income per household in urban governorates of about LE 6,278. This, in turn, would indicate an adjusted average annual income per household for all areas in urban Egypt and for all of Egypt (urban and rural) of about LE 5,828.41 and LE 5,535, respectively (for 1991/1992).

In the distribution of average annual household income by source in urban Egypt (see table 41) wages and salaries were ranked first for 1990/1991. The maximum (proportional) contribution of wages and salaries was estimated at about 60.8 per cent of average annual income per household in urban governorates, against a minimum contribution of about 41.53 per cent in urban areas of Lower Egypt. Average annual household income from non-agricultural activities was low in urban governorates (18.85 per cent) in comparison with the corresponding aggregate average for all urban areas in Egypt (24.04 per cent). This result did not reflect the real situation, however—especially given that urban governorates were (and are still) considered centres for non-agricultural activities. Average annual income from property assets for households in urban governorates was low in comparison with income from the same source in other urban areas in Egypt. (This result might also be a reflection of errors in data collection and aggregation, especially in the case of the primary data; see table 41.)

In rural Egypt, the situation was different (see table 42). Agricultural activity was the first-ranked source of income, with the highest being 50.45 per cent of total average annual income per household in rural areas of Lower Egypt. The same source represented a contribution of about 34.32 per cent to total average annual income per household in rural areas of the frontier governorates. Overall, average annual per-household income from agricultural activities constituted about one half of total average annual income per household in rural Egypt (specifically, 48.89 per cent of the aggregate average for all of rural Egypt) in 1990/1991. The contribution of wages and salaries to average annual income ranged from 24.82 per cent in rural areas of Lower Egypt to 46.18 per cent in rural areas of the frontier governorates. This means that the other sources of income in the rural areas of Egypt contributed less than 24 per cent to total annual income. To provide an idea of the variations, average annual income per household in rural areas of Lower Egypt, rural areas of the frontier governorates, and rural areas of Upper Egypt constituted about 111.18, 93.51, and 85.28 per cent of the aggregate average annual income per household for all rural areas of Egypt in 1990/1991, respectively.

D. Variations in household income distribution at the governorate level

Table 43 indicates that average annual household income from wages and salaries in rural areas was about 46.34 per cent of the corresponding average in urban areas for 1990/1991. For a sample of specific governorates: average annual household income from wages and salaries in urban areas of Beni-Suef Governorate constituted about 42.21 per cent of the corresponding average for urban areas of Ismailia Governorate, while this average in rural areas of Menia Governorate was about 42.83 per cent of the corresponding average for rural areas of Damietta Governorate.

Table 41. Average annual income per household in urban areas of Egypt in 1990/1991, by source of income

Source of income	Urban governorates		Urban areas of Lower Egypt		Urban areas of Upper Egypt		Urban areas of frontier governorates		Aggregate average for all urban areas in Egypt	
	(LE*)	(percentage)	(LE)	(percentage)	(LE)	(percentage)	(LE)	(percentage)	(LE)	(percentage)
Wages and salaries	3 503.69	60.80	2 298.31	41.53	2 644.05	49.15	3 464.63	57.50	2 937.87	52.45
Agricultural activities	64.40	1.12	417.39	7.54	431.52	8.02	131.97	2.19	261.11	4.66
Non-agricultural activities	1 086.47	18.85	1 823.49	32.95	1 311.31	24.38	576.21	9.56	1 346.27	24.04
Property assets	216.10	3.75	409.74	7.40	396.73	7.37	851.22	14.12	326.39	5.83
Financial assets	84.65	1.47	105.70	1.91	40.37	0.75	37.76	0.63	78.40	1.40
Other rotational returns	806.94	14.00	479.40	8.66	555.70	10.33	964.14	16.00	650.78	11.62
Total**	5 762.25	100	5 534.03	100	5 379.68	100	6 025.93	100	5 600.82	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

** Percentages in the columns may not add up to totals because of rounding.

Table 42. Average annual income per household in rural areas of Egypt in 1990/1991, by source of income

Source of income	Rural areas of Lower Egypt		Rural areas of Upper Egypt		Rural areas of frontier governorates		Aggregate average for all rural areas in Egypt	
	(LE*)	(percentage)	(LE)	(percentage)	(LE)	(percentage)	(LE)	(percentage)
Wages and salaries	1 410.44	24.82	1 257.78	28.86	2 206.92	46.18	1 361.52	26.64
Agricultural activities	2 866.80	50.45	2 042.92	46.87	1 640.38	34.32	2 498.64	48.89
Non-agricultural activities	705.73	12.42	462.59	10.61	369.82	7.74	597.31	11.69
Property assets	400.62	7.05	268.11	6.15	169.49	3.55	340.97	6.67
Financial assets	26.02	0.46	12.71	0.29	5.95	0.12	19.98	0.39
Other rotational returns	272.76	4.80	314.54	7.22	386.55	8.09	292.56	5.72
Total	5 682.37	100	4 358.65	100	4 779.11	100	5 110.98	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

Table 43. Variations in average annual income per household between rural and urban areas of Egypt in 1990/1991, by source of income and by the highest and lowest rankings of governorates

Item	Urban Egypt				Rural Egypt			
	Rank	Governorate)	Income (LE')	Index	Rank	Governorate	Income (LE)	Index
Wages and salaries	1	Ismailia	3 598.02	122.47	1	Damietta	2 378.98	174.73
	2	Cairo	3 594.65	122.36	2	Giza	1 837.57	134.96
	3	Port Said	3 533.08	120.26	3	Aswan	1 769.80	129.99
	19	Behera	1 755.24	59.75	15	Fayoum	1 041.46	76.49
	20	Kafr El-Sheikh	1 706.82	58.10	16	Suhag	1 026,23	75.37
	21	Beni-Suef	1 518.58	51.69	17	Menia	1 019.02	74.84
		Average	2 937.87	100		Average	1 361.52	100
Agricultural activities	1	Kafr El-Sheikh	940.11	360.04	1	Kafr El-Sheikh	4 968.20	198.84
	2	Qena	863.88	330.85	2	Ismailia	3 688.79	147.63
	3	Asyout	848.62	325.0	3	Behera	3 023.02	120.99
	19	Port Said	8.85	3.39	15	Damietta	1 635.61	65.46
	20	Ismailia	..	..	16	Aswan	1 567.14	62.72
	21	Suez	..	..	17	Giza	1 190.44	47.64
		Average	261.11	100		Average	2 498.64	100
Non-agricultural projects	1	Damietta	4 963.26	368.67	1	Damietta	1 797.77	300.98
	2	Kafr El-Sheikh	3 387.28	251.60	2	Kafr El-Sheikh	1 653.38	276.80
	3	Dakhalia	2 785.0	206.87	3	Dakhalia	923.22	154.56
	19	Ismailia	882.80	65.57	15	Beni-Suef	301.68	50.51
	20	Aswan	856.75	63.64	16	Suhag	273.97	45.87
	21	Kalyoubia	816.52	60.65	17	Ismailia	167.94	28.12
		Average	1 346.27	100		Average	597.31	100
Property assets	1	Sharkia	718.16	220.03	1	Dakhalia	580.62	170.28
	2	Fayoum	659.01	201.91	2	Fayoum	544.96	159.83
	3	Beni-Suef	467.37	143.19	3	Kalyoubia	490.38	143.82
	19	Damietta	245.09	75.09	15	Menia	159.24	46.70
	20	Alexandria	103.03	31.57	16	Aswan	127.70	37.45
	21	Aswan	92.0	28.19	17	Beni-Suef	120.08	35.22
		Average	326.39	100		Average	340.97	100
Financial assets	1	Sharkia	549.99	701.52	1	Kalyoubia	61.40	307.31
	2	Port Said	340.14	433.85	2	Sharkia	36.82	184.24
	3	Ismailia	103.84	132.45	3	Menoufia	36.50	182.68
	19	Aswan	20.75	26.47	15	Kafr El-Sheikh	1.78	8.91
	20	Kafr El-Sheikh	..	..	16	Aswan	..	..
	21	Damietta	..	..	17	Ismailia	..	..
		Average	78.4	100		Average	19.98	100
Other rotational returns	1	Beni-Suef	1 035.97	159.19	1	Suhag	597.41	204.2
	2	Suez	931.67	143.16	2	Qena	426.43	145.76
	3	Alexandria	890.83	136.89	3	Dakhalia	381.61	130.43
	19	Kalyoubia	359.91	55.30	15	Beni-Suef	162.48	55.54
	20	Qena	342.66	52.65	16	Ismailia	119.76	40.94
	21	Behera	275.97	42.41	17	Behera	112.33	38.39
		Average	650.78	100		Average	292.56	100

Table 43. (continued)

Item	Urban Egypt				Rural Egypt			
	Rank	Governorate)	Income (LE*)	Index	Rank	Governorate	Income (LE)	Index
Total annual net income	1	Damietta	8 947.60	159.76	1	Kafr El-Sheikh	8 399.54	164.34
	2	Port Said	7 511.45	134.11	2	Damietta	6 441.18	126.03
	3	Kafr El-Sheikh	6 870.44	122.67	3	Dakhalia	6 237.74	122.05
	19	Menoufia	4 775.76	85.27	15	Menia	4 170.02	81.59
	20	Behera	4 691.58	83.77	16	Asyout	3 993.28	78.13
	21	Kalyoubia	4 629.64	82.66	17	Beni-Suef	3 860.99	75.54
		Average	5 600.82	100		Average	5 110.98	100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

Urban household income from agricultural activity was about 10.45 per cent of the corresponding average for rural households. Average annual income per household from agricultural activity was an estimated LE 940.11 in urban areas of Kafr El-Sheikh Governorate and zero in the Ismailia and Suez governorates. Average annual income per household from agricultural activity in rural areas of Giza Governorate was about 23.96 per cent of the corresponding average for rural areas of Kafr El-Sheikh Governorate.

The absence of urban governorates in the first ranks of average annual income per household from non-agricultural activities makes no sense, because most non-agricultural activities—i.e., industry, trade and services—are located in urban governorates. In any case, because of this (and for other reasons), average annual income per household in urban governorates was low. Also interesting is the fact that urban governorates are not ranked in the first positions for financial or property/real estate assets.

E. Estimates of expenditure elasticities for various groups

Data from the primary results of the research on income, expenditure in Egypt (CAPMAS, 1992b) do not include expenditure by various classes. The available data include expenditure and income by geographic region and by governorates.

Because of their importance, expenditure elasticities are estimated in this study. Total annual expenditure per household is considered an independent variable, and expenditure on food groups a dependent variable. To make an accurate comparison between the 1981/1982 and 1990/1991 research data, the same formula is applied to the 1981/1982 Household Budget Survey. Two models are used to estimate expenditure elasticities—i.e., the double log model and the adjusted log model. The formulae are:

(1) $(\text{Log } Y_i) = \text{Log } \alpha + B \text{ Log } X_i$ ———— double log model.

(2) $(\text{Log } Y_i) = \alpha + B_1 \text{ Log } X_i - \frac{B_2}{X_i}$ ———— adjusted log model.

The results of each model are different with respect to the elasticity coefficient. However, the coefficients of determination for the adjusted models are about the same in most cases; therefore, the average of the elasticities obtained is considered the estimate of expenditure elasticity in this part.

According to table 44, the following food groups showed an increase in expenditure elasticity coefficients for urban Egypt from 1980/1981 to 1990/1991: beverages (from 0.015 in 1980/1981 to 1.808 in 1990/1991), milk and dairy products (from 1.24 to 2.235), grains and starches (from 0.587 to 0.854), vegetables (from 0.990 to 1.438), sugar and sugar commodities (from 0.335 to 0.466), the fish group (from 3.957 to 5.246), and fruits (from 1.478 to 1.862). The following food groups showed a decrease in expenditure elasticity coefficients for urban Egypt from 1980/1981 to 1990/1991: oils and fats (from 0.860 to 0.05), other food commodities (from 2.035 to 0.390), eggs (from 0.716 to 0.342), dry legumes (from 1.781 to 1.166), poultry and meat (from 1.069 to 0.711), and food and beverages (from 0.912 to 0.669).

With respect to expenditure elasticity coefficients for rural Egypt, the following food groups showed an increase from 1980/1981 to 1990/1991: grains and starches (from 0.418 to 0.587), vegetables (from 1.202 to 1.365), poultry and meat (from 0.981 to 2.132), milk and dairy products (from 0.757 to 1.361), and oils and fats (from 1.179 to 0.408). The rest of the food groups showed a decrease in the coefficients of expenditure between 1980/1981 and 1990/1991.

The highest proportional decrease was observed with respect to the coefficients for other foods, beverages, fruits, and eggs. Although the coefficient of expenditure elasticity for food and beverages in rural Egypt decreased from 1980/1981 to 1990/1991, the estimated coefficient for 1990/1991 was still above one—i.e., an increase of 100 per cent in the average annual expenditure per rural household resulted in an increase of about 102 per cent in expenditure on food and beverages. For urban areas, an increase of 100 per cent in average annual expenditure per urban household resulted in an increase in expenditure on food and beverages of about 67 per cent. This indicates that non-food items had a higher relative importance in urban areas than in rural areas—attributable to the fact that average annual income per household is lower in rural than in urban areas. Therefore, in rural areas, most or all of any increase in income is assigned to expenditure on food and beverages.

F. The impact of increased income on consumption (various food groups)

The previous discussion dealt with an estimation of coefficients of expenditure elasticities for various food groups in rural and urban Egypt in 1981/1982 and 1990/1991. Aggregate averages for these coefficients can be obtained for Egypt as a whole (rural and urban) by using population in rural areas (56 per cent) and population in urban areas (44 per cent) as weights. Coefficients of income elasticity at the country level are computed as follows: Income elasticity for any food group equals (expenditure elasticity for the same group) times (expenditure on this food group as

a percentage of income). As mentioned before, expenditure as a proportion of income was estimated at 95.65 per cent for 1990/1991; therefore, coefficients of income elasticity were high for the following food groups: the fish group (2.384), other food commodities (1.683), fruits (1.525), milk and dairy products (1.297), meat and poultry (1.208), and vegetables (1.198). These food groups also showed high coefficients of expenditure elasticity at both urban and rural levels.

The annual rate of increase for the consumption of any food group as a result of income increase can be computed as follows: Annual increase in consumption equals annual growth rate in per capita GNP at fixed prices times the coefficient of income elasticity for the studied food group. It should be noted, however, that the total increase in the consumption of any food group is caused by two factors—i.e., annual population increase and increase in income—so the contribution by either factor (population or income increase) to the total increase in the consumption of any food group can be isolated (see table 45).

The impact of income change on consumption is high for the following groups: the fish group (74.44 per cent), other food commodities (67.31 per cent), fruits (65.11 per cent), milk and dairy products (61.28 per cent), meat and poultry (59.6 per cent), vegetables (59.45 per cent), and food and beverages (52.67 per cent). The impact of income change is low for the following food groups: oils and fats (29.82 per cent), sugar and sugar commodities (38.82 per cent), grains and starches (41.15 per cent), beverages (46.4 per cent), eggs (46.89 per cent), and dry legumes (48.45 per cent).

Table 44. Coefficients of expenditure elasticity for food groups in urban and rural Egypt in 1981/1982 and 1990/1991

Food group	Urban areas				Rural areas			
	Coefficient 1981/1982 (1)	Coefficient 1990/1991 (2)	Change (3) (3)=(2)-(1)	Percentage of change (4) (4)=(3)X(100) (2)	Coefficient 1981/1982 (1)	Coefficient 1990/1991 (2)	Change (3) (3)=(2)-(1)	Percentage of change (4) (4)=(3)X(100) (2)
Grains and starches	0.587	0.854	+0.267	+31.26	0.418	0.587	+0.169	+28.79
Dry legumes	1.781	1.166	-0.615	-52.74	0.358	0.202	-0.156	-27.23
Vegetables	0.990	1.438	+0.448	+31.15	1.202	1.365	+0.163	+11.94
Fruits	1.478	1.862	+0.384	+20.62	2.434	0.636	-1.798	-282.7
Meat and poultry	1.069	0.711	-0.358	-50.35	0.981	2.132	+1.151	+53.98
Fish	3.957	5.246	+1.289	+24.57	3.337	2.387	-0.950	-39.80
Eggs	0.716	0.342	-0.374	-109.35	1.456	0.414	-1.042	-251.69
Milk and dairy products	1.240	2.235	+0.995	+44.52	0.757	1.361	+0.604	+44.38
Oils and fats	0.860	0.050	-0.810	-1 620.0	0.179	0.408	+0.229	+56.13
Sugar and sugar commodities	0.335	0.466	+0.131	+28.11	8.840	0.474	-0.366	-77.21
Other food commodities	2.035	0.390	-1.645	-421.79	3.738	0.645	-3.093	-479.53
Beverages	0.015	1.808	+1.793	+99.17	1.008	0.213	-0.790	-370.89
Food and beverages (total)	0.912	0.669	-0.243	-36.32	1.141	1.021	-0.120	-11.75

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics (CAPMAS), Collective Results of the Four Rounds of the 1981/1982 Household Budget Survey, Reference No. 0819/AA/086 (in Arabic); and CAPMAS, Research on Income, Expenditure and Consumption in the Arab Republic of Egypt, primary results, four rounds, Cairo, August 1992 (in Arabic).

Table 45. Derivation of income elasticity coefficients and annual rates of increase for the consumption of various food groups during the 1980s

Food group	Coefficient of expenditure elasticity			Coefficient of income elasticity, Egypt (2)	Rate of increase in consumption		Income impact (5) (5)=(3÷4)X100 (percentage)
	Urban	Rural	Egypt (1)		Due to income increase (3) (percentage)	Total (4) (percentage)	
Grains and starches	0.720	0.502	0.598	0.572	1.922	4.67	41.15
Dry legumes	1.473	0.280	0.805	0.770	2.587	5.34	48.45
Vegetables	1.214	1.283	1.252	1.198	4.025	6.77	59.45
Fruits	1.670	1.535	1.594	1.525	5.124	7.87	65.11
Meat and poultry	0.89	1.556	1.263	1.208	4.058	6.81	59.59
Fish	4.601	2.862	2.493	2.384	8.010	10.76	74.44
Eggs	0.529	0.935	0.756	0.723	2.429	5.18	46.89
Milk and dairy products	1.737	1.059	1.357	1.297	4.357	7.11	61.28
Oils and fats	0.455	0.293	0.364	0.348	1.169	3.92	29.82
Sugar and sugar commodities	0.400	0.657	0.544	0.520	1.747	4.50	38.82
Other food commodities	1.212	2.191	1.760	1.683	5.654	8.40	67.31
Beverages	0.911	0.610	0.742	0.710	2.385	5.14	46.40
Food and beverages (total)	0.790	1.081	0.953	0.911	3.06	5.81	52.67

Source: Compiled and computed from table 44 of the present study.

Notes: (1) The aggregate expenditure elasticity coefficient at the country level is computed by assignment of weights to rural and urban Egypt equal to their population percentages in 1986: namely, 56 per cent and 44 per cent, respectively.

(2) The coefficient of income elasticity is computed by figuring expenditure as a proportion of income at the country level—estimated at about 95.65 per cent.

(3) Annual increase in expenditure on any food group equals annual growth rate in per capita gross natural product (GNP) at fixed prices (3.36 per cent) multiplied by the coefficient of income elasticity for the same group.

(4) Annual increase in consumption of any food group equals annual increase in consumption due to income increase, plus increase in consumption due to annual increase in population (2.75 per cent).

V. MAJOR FACTORS AFFECTING FOOD CONSUMPTION PATTERNS IN EGYPT

There are many factors affecting food consumption patterns in Egypt. The preceding chapters of this study have evaluated Egypt's recent food status, with emphasis on the roles of both internal production and foreign trade in determining food supply, as well as on the aspects of food demand other than human consumption (and their impact on food consumption patterns in Egypt). The previous chapters also discussed the policies adopted by the Ministry of Supply and Internal Trade—i.e., those related to rationed quotas, subsidies, food aid, and pricing (among others)—which have affected food consumption patterns in Egypt. Also discussed was the impact of household income and per capita income on Egyptian food consumption patterns.

In addition to those just mentioned, there are a number of other factors which affect food consumption patterns in Egypt; one of these is agricultural policy, which can be studied by analysing cropping patterns and the share of various major crop groups and individual food crops to determine changes in cropping patterns (during the period 1980 to 1990 for the purposes of this study)—i.e., to measure the increases or decreases in the area utilized for the planting of food crops. The study also deals with basic changes in production and productivity for major food crops. Because of the high correlation between agricultural pricing policy and agricultural production cost, one focus of this chapter is the study of the structure of production cost (items) and the annual growth rates for these items; the purpose here is to identify, evaluate and better understand the reasons behind the increases in the prices of agricultural produce—especially those under the system of compulsory deliveries. Thereafter, a comparison is conducted—with respect to the cost per ton of major food crops—between the two systems of pricing for agricultural products and inputs: official prices (predetermined according to the compulsory system and the subsidy of agricultural inputs, including tax-based rent for agricultural lands) and free prices. This comparison highlights the disparities or variations resulting from the pricing policies adopted and their effect on the Egyptian farmer, in terms of prices against cost per unit of agricultural production.

Other parts of this chapter cover pricing policies and their impact on food consumption patterns; domestic or home prices (consumer prices) are compared with international prices (import and export prices) for major food crops. Thereafter, price elasticities of demand for food and beverages are derived and the impact of price changes on consumed quantities are discussed. The final part of the chapter briefly discusses the effect of other factors on the food consumption patterns in Egypt, such as values, traditions, and new social groups and strata.

A. Agricultural policy and its impact on food consumption patterns in Egypt

Agricultural policy is considered one of the major factors affecting the supply of food in Egypt. The main policy tools include cropping patterns, the pricing of agricultural products, and the system of compulsory deliveries for major food crops.

According to table 46, the total cropped area in Egypt increased from about 11.06 million feddan in 1980 to about 11.57 million feddan in 1990—a hike of about 515,700 feddan, indicating a moderate increase over the 1980s of about 4.66 per cent. The shares of basic food groups can

be ranked as follows: grains (44.96 per cent), fodder crops (23.88 per cent), vegetables (9.84 per cent), fibre crops (8.85 per cent), fruits (4.88 per cent), dry legumes (3.26 per cent), sugar crops (2.57 per cent), and oil crops (1.77 per cent) (see table 46).

The changes in cropped area represented an increase for the following groups from 1980 to 1990: fruits (61.19 per cent), oil crops (26.63 per cent), dry legumes (18 per cent) and sugar crops (17.15 per cent). Because of the proportionally small cropping area for these groups, their aggregate increase in area, which totalled about 358,300 feddan, represented only 69.48 per cent of the net increase in the total cropping area for Egypt over the period 1980 to 1990. The increase in grain area was estimated at about 464,400 feddan, or about 90.05 per cent of the net increase in total cropping area over the same period. Fodder and fibre groups showed a reduction in area during the period 1980 to 1990 of about 337,300 feddan, i.e., about 65.41 per cent of the net increase in total Egyptian cropping area.

The preceding discussion shows that the cropping area policy during the period 1980 to 1990 favoured food crops at the expense of fibre and fodder crops. This resulted in an increase in the Egyptian food supply. For specific commodities, the food crop area increased over the period 1980 to 1990 as follows: wheat (by 449,600 feddan), broad beans (by 166,400 feddan), maize (by 65,600 feddan), rice (by 65,300 feddan), oranges (by 43,500 feddan), sugar beets (by 34,000 feddan), and grapes (by 31,800 feddan). Among all the food crop, only the lentil area decreased during the same period (by 1,728 feddan).

Table 47 illustrates the specific components of the cost structure of various commodities during the 1980s. For a feddan of wheat, the cost of farm labour (human, animal, and mechanical), the cost of production inputs (seeds, organic and chemical fertilizers, and pesticides) and tax-based rent and other costs constituted about 59.46, 18.50, and 22.04 per cent of total production cost, respectively.

The study of average annual growth rates for total production cost and its component items showed the following results with respect to wheat: farm labour and production input costs showed high rates of average annual growth of about 14.83 and 14.78 per cent, respectively, while the average rate of annual growth for tax-based rent and other costs was an estimated 6.77 per cent (notable here was the proportionally low average annual increase in the item of tax-based rent and other costs; in fact most of the increase for this item belonged to "other costs", because of relative stability in tax-based rent during the 1980s.

Average annual growth rate for total cost per feddan ranged between 10.92 per cent in the case of summer rice and 13.28 per cent for lentils. In most cases, the average rate of annual growth for the item rent and other costs was low compared to the average annual growth rates for farm labour and production inputs costs. The average annual growth rate for rent and other costs ranged between 4.37 per cent for broad beans and 11.12 per cent for winter tomatoes, while the average annual growth rate for farm labour costs ranged between 12.03 per cent for summer potatoes and 14.83 per cent for wheat. The average rate of annual growth for production input costs ranged between 9.17 per cent in the case of summer rice and 16.37 per cent for lentils.

Based on a series of field studies by the present author and others (Hadhoud, 1982; Hadhoud and Radwan, 1991; Hadhoud, 1992a; and Hadhoud, 1992b), the average cost per feddan of the crops mentioned above can be estimated, assuming there were no changes in productivity per feddan for these crops and assuming the use of free prices in the estimation of costs for farm labour, production inputs, and free market rent for agricultural land. The main objective here is to determine the variations existing between the Ministry of Agriculture and Land Reclamation data (official prices and tax-based rent) and the data supplied by the author and others (which is based on free prices for both production inputs and rent).

It should be noted that average values for the cost of most production inputs at free prices exceeded the corresponding values at official prices by about 12.5 per cent in 1992 (Hadhoud, 1992a). Land rent (LE/feddan) at free market prices was about 5.2 times the tax-based rent for most agricultural crops (Hadhoud, 1991a). Overall, it can be stated that the average per-feddan cost of production at free prices for most crops under investigation was about 150 per cent of the corresponding cost at official prices during the period 1981 to 1985; because of high rates of increase in the prices of most cost items during the second half of the 1980s, the average estimated cost per feddan of the same crops in this latter period at free prices was about 180 per cent of the corresponding cost at official prices.

Table 48 provides a comparison between average farm/procurement prices and average costs per ton of major food crops between 1981 and 1990; details are provided below.

Prices per ton of crops under the compulsory deliveries system were always below farm prices for the same crops. Average procurement prices constituted about 93, 81.19, 85.01, and 74.73 per cent of average farm prices for wheat, rice, broad beans, and lentils, respectively, during the 1980s period.

Overall, procurement prices and farm prices for crops under the compulsory deliveries system increased from the first period (1981 to 1985) to the second period (1986 to 1990). The average proportional increase in procurement prices was estimated at 183.35 per cent for wheat, 114.86 per cent for rice, 84.91 per cent for broad beans, and 81.82 per cent for lentils. The average increase in farm prices for the same crops was estimated at 175.41 per cent for wheat, 92.07 per cent for rice, 114.08 per cent for broad beans, and 103.98 per cent for lentils.

Average farm prices per ton for all crops exceeded the corresponding average cost per ton; farm price as a percentage of cost per ton ranged between 122.9 per cent for wheat and 233.67 per cent for tomatoes.

Table 48 shows that the average procurement price was estimated at 69.73, 67.09, 80.85, and 89.81 per cent of average cost per ton at free market prices for wheat, rice, broad beans and lentils, respectively, during the 1980s. Rates were only slightly higher for average farm prices as a proportion of the corresponding average cost per ton at free market prices for the same crops—estimated at 74.99, 82.63, 95.10 and 120.17 per cent for the wheat, rice, broad beans and lentils, respectively, during the period 1981 to 1990.

Table 46. Crop area (feddan), production (tons), and productivity (tons) for major crops and food groups in Egypt in 1980 and 1990

Crop or food group	1980				1990				Percentage change (1980-1990)		
	Area	Percentage	Production	Productivity	Area	Percentage	Production	Productivity	Area	Production	Productivity
Wheat	1 326 179	11.99	1 796 436	1.35	1 775 737	15.34	4 268 049	2.40	+33.9	+137.58	+77.78
Rice	972 318	8.79	2 384 102	2.45	1 036 662	8.96	3 167 421	3.06	+2.62	+32.86	+24.90
Maize	1 905 809	17.24	3 231 076	1.70	1 971 498	17.04	4 798 635	2.43	+3.45	+48.52	+42.94
Grains (subtotal)*	4 738 842	42.86	8 161 096	1.72	5 203 244	44.96	12 992 808	2.50	+9.80	+59.20	+45.35
Broad beans	276 332	2.50	327 361	1.18	342 743	2.96	563 905	1.65	+24.03	+72.26	+39.83
Lentils	15 215	0.14	6 571	0.43	13 487	0.12	11 743	0.87	-11.36	+78.71	+102.33
Dry legumes (subtotal)*	319 579	2.89	404 446	1.27	377 102	3.26	611 066	1.62	+18.00	+51.09	+19.69
Sugar cane	253 749	2.29	8 618 393	33.96	263 190	2.27	11 095 262	42.16	+3.72	+28.74	+24.15
Sugar beets	--	--	--	--	34 088	0.29	574 745	16.86	--	--	--
Sugar crops (subtotal)	253 749	2.29	8 618 393	33.96	297 278	2.57	11 670 007	39.26	+17.15	+35.41	+15.61
Cotton	1 244 526	11.26	8 941 375**	7.18*	993 047	8.58	5 168 958*	5.21*	-20.21	-42.19	-27.44
Other fibres	67 633	0.61	187 549	2.77	30 725	0.27	90 951	2.96	-54.57	-51.51	+6.86
Fibres (subtotal)	1 312 159	11.87	--	--	1 023 772	8.85	--	--	-21.98	--	--
Berseem	1 721 655	15.57	40 698 515	23.64	1 647 305	14.23	42 985 366	26.09	-4.32	+5.62	+10.36
Other fodder crops	1 090 857	9.87	10 134 170	9.29	1 116 310	9.65	11 096 448	9.94	+2.33	+9.50	+7.00
Fodder (subtotal)	2 812 512	25.44	50 832 685	18.07	2 763 615	23.88	54 081 814	19.57	-1.74	+6.39	+8.30
Soybeans	82 767	0.75	92 377	1.12	98 523	0.85	106 690	1.08	+19.04	+15.49	-3.57
Peanuts	28 451	0.26	25 540	0.90	29 211	0.25	26 255	0.90	+2.67	+2.80	--
Oil crops (subtotal)*	161 624	1.46	143 010	0.88	204 669	1.77	185 116	0.90	+26.63	+29.44	+2.27
Potatoes	157 849	1.43	1 116 994	7.07	180 587	1.56	1 937 807	10.73	+14.40	+73.48	+51.77
Tomatoes	331 720	3.00	2 467 793	7.44	355 214	3.07	4 233 842	11.92	+7.08	+71.56	+60.22
Vegetables (subtotal)*	1 108 788	10.03	8 805 002	7.94	1 139 119	9.84	10 355 095	9.09	+2.74	+17.60	+14.48
Oranges	162 109	1.47	920 881	5.86	205 599	1.78	1 574 287	7.66	+26.83	+70.95	+30.72
Grapes	57 054	0.52	298 926	5.24	88 873	0.77	584 694	6.58	+55.77	+95.60	+25.57
Fruits (subtotal)*	350 054	5.24	1 835 523	5.24	564 256	4.88	4 053 312	7.18	+61.19	+120.83	+37.02
Aggregate total	11 057 307	100	-	-	11 573 055	100	-	-	4.66	-	-

Source: Compiled and computed from: Egypt, Ministry of Agriculture and Land Reclamation, Agricultural Development Strategy for Egypt in the Nineties, Cairo, 1992 (in Arabic).

* Includes some items not listed in table.

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Table 47. Structure of total average cost and productivity per feddan and average cost per ton of major food crops during the period 1981 to 1990

Crop	Period	Cost structure				Productivity per feddan (tons)	Cost per ton (LE)
		Farm labour	Production inputs	Rent and other costs	Total cost		
		(percentage)			(LE*/ton)		
Wheat	1981-1985	57.27	17.05	25.68	223.03	1.5	148.69
	1986-1990	60.72	19.32	19.96	391.11	1.97	198.53
	1981-1990	59.46	18.5	22.04	307.07	1.73	177.5
Annual growth rate	1981-1990	14.83%	14.78%	6.77%	12.57%	-	-
Maize	1981-1985	59.44	21.42	19.14	248.52	1.84	135.06
	1986-1990	61.48	22.37	16.15	421.20	2.15	195.91
	1981-1990	60.72	22.02	17.26	334.86	2.0	167.43
Annual growth rate	1981-1990	13.27%	13.01%	7.37%	12.03%	-	-
Summer rice	1981-1985	66.52	16.58	16.90	273.57	2.35	116.41
	1986-1990	69.13	15.99	14.88	449.0	2.54	176.77
	1981-1990	68.14	16.22	15.64	361.29	2.45	147.47
Annual growth rate	1981-1990	12.14%	9.17%	7.98%	10.92%	-	-
Broad beans	1981-1985	57.72	15.28	27.0	203.62	0.98	207.78
	1986-1990	61.58	19.9	19.23	352.18	1.13	311.66
	1981-1990	60.16	17.76	22.08	277.90	1.05	264.67
Annual growth rate	1981-1990	14.43%	16.25%	4.37%	12.14%	-	-
Lentils	1981-1985	53.97	22.22	23.81	213.48	0.53	402.79
	1986-1990	56.27	24.57	19.16	387.53	0.77	503.29
	1981-1990	55.45	23.74	20.81	300.51	0.65	462.32
Annual growth rate	1981-1990	14.08%	16.37%	7.72%	13.28%	-	-
Summer potatoes	1981-1985	28.51	62.17	9.32	760.56	7.81	97.38
	1986-1990	28.54	63.38	8.08	1 209.52	9.55	126.65
	1981-1990	28.53	63.05	8.42	1 041.16	8.68	119.95
Annual growth rate	1981-1990	12.03%	13.91%	8.86%	12.94%	-	-
Winter potatoes	1983-1985	56.71	31.56	11.73	552.07	8.89	62.10
	1986-1990	57.32	31.84	10.84	900.62	11.08	81.28
	1983-1990	57.15	31.76	11.09	769.92	9.99	77.07
Annual growth rate	1983-1990	12.38%	14.06%	11.12%	12.72%	-	-

Source: Compiled and computed from: Egypt, Ministry of Agriculture and Land Reclamation, Institute of Agricultural Economics Research, Records of the Statistics Section, unpublished data (various years) (in Arabic).

* LE = Egyptian pounds.

It can be concluded that the ratio of procurement prices and farm prices to cost per ton for crops under the compulsory system was low if based on official prices compared with the corresponding ratio if based on free market prices. There were some improvements in agricultural pricing policy in the late 1980s and early 1990s, including adjustments in procurement prices and farm prices for some crops, as well as the elimination of compulsory delivery systems for wheat,

broad beans, rice and lentils. However, the compulsory deliveries system is still being applied in the case of cotton and sugar cane; this implies adjustments in the prices of these commodities to provide Egyptian farmers with an incentive to produce them.

B. Pricing policies and their impact on food consumption patterns in Egypt

It is well known that agricultural pricing policy has an important impact on cropping patterns, and therefore on the Egyptian food supply. Agricultural pricing policy, with its impact on the food supply, affects the Egyptian farmer, while consumer-price-related policies have an impact on the demand side, i.e., the Egyptian consumer. Previous parts and chapters of this study have dealt with the relationship between the various policies implemented by the Ministry of Supply and Internal Trade and subsidy policy. In this part, domestic pricing policy (consumer prices) and world prices (export and import prices) are discussed, especially within the context of economic reform policies. The major components of economic liberalization include pricing policy and the impact of world prices on domestic prices as a direct result of foreign trade liberalization.

Egypt's major export commodities include rice, navel oranges, potatoes, onions, garlic, peanuts, and tomatoes, while the country's import commodities include wheat, maize, broad beans, sesame, lentils, sugar, vegetable oil, frozen meat, frozen poultry, and frozen fish. Data on consumer prices are available over the period of the 1980s for these and other commodities. In this part, changes in domestic and international prices and average annual growth rates over the 1980s period (1981 to 1990) are presented.

The results of the analysis and the data from table 49 indicate that domestic pricing policy tended to involve an increase in consumer prices for most food commodities from the first period (1981 to 1985) to the second period (1986 to 1990). Domestic prices for most commodities exceeded the corresponding import and/or export prices; this was mainly due to factors such as inflation (rates were higher in the second period than the first period) and subsidy policy. As mentioned before, subsidy was completely eliminated for most commodities and largely reduced for others, especially by the late 1980s.

This result is supported by the high rates of average annual growth in domestic prices compared with the corresponding growth rates for international (import and/or export) prices. The average annual growth rates for consumer prices against corresponding rates for imported commodity prices were as follows: 22.81 per cent against 10.51 per cent for wheat, 30 per cent against 11.4 per cent for maize, 35.41 per cent against 24.42 per cent for broad beans, 36.08 per cent against 21.83 per cent for lentils, 26.19 per cent against 11.89 per cent for vegetable oil, 13.89 per cent against 3.97 per cent for domestic meat, 27 per cent against 3.97 per cent for imported meat, 8.93 per cent against -1 per cent for domestic poultry, 11.66 per cent against -1 per cent for imported poultry, 12.66 per cent against 8.28 per cent for domestic fish, and 14.3 per cent against 8.28 per cent for imported fish.

The rate of average annual growth for consumer prices against the corresponding rates for export prices were as follows: 26.37 per cent against 9.65 per cent for rice, 15.98 per cent against 13.63 per cent for potatoes, and 21.34 per cent against 17.04 per cent for navel oranges.

The average annual growth rate for consumer prices was below the corresponding rate of annual growth for export prices in the case of onions and garlic, while sugar is the only one of the imported commodities for which average annual growth rate in consumer price was below the corresponding average rate of annual growth in import price. In other words, this indicates an increase in subsidy per ton of sugar from the first to the second period.

C. Deriving price elasticities of demand for food and beverages

In one study by the present author, (Hadhoud, 1989) the relationship between prices and consumption is analysed. Based on data from the 1981/1982 Household Budget Survey, the study estimated coefficients of expenditure elasticity for food and beverages according to the economic activity of the householder, after which price elasticity of demand was derived for food and beverages in order to determine and evaluate the role and impact of prices on the index for consumed quantities of food and beverages.

The following formula is used to estimate price elasticity of demand for food and beverages:

$$(P\ E)_n = -(EXP)_n \times (E\ E)_n$$

Where:

$(P\ E)_n$ = Price elasticity of demand for food and beverages in sector (n).
$(EXP)_n$ = Percentage of expenditure on food and beverages in sector (n).
$(E\ E)_n$ = Expenditure elasticity for food and beverages in sector (n).

This formula is based on the assumption that the cross price elasticity between the food and beverages group and the other expenditure groups is zero. This formula also takes into consideration the income (expenditure) effect resulting from changes in food and beverage price, with no concern for the substitution effect of price changes (Eicher and Staatz, 1987).

Table 50 illustrates the derivation of price elasticities of demand for food and beverages for rural and urban Egypt according to the economic activity of the householder. The results show that the price elasticity of demand for food and beverages was high for the following sectors in both rural and urban areas of Egypt: farming and fishing, construction, transportation and communications. Conversely, the coefficient of price elasticity of demand for food and beverages was low for the following sectors: Community/social services, manufacturing, and finance and insurance, mining and electricity, and commerce and restaurants. The main reason behind the low price elasticities of demand for food and beverages for the latter sectors was the low level of the corresponding coefficients of expenditure elasticity for the same sectors, as well as the low share of expenditure on food and beverage for these sectors. All of this resulted in a low response for these sectors (in terms of adjustments made in consumed quantities of food and beverages) to changes in prices.

Table 48. Average farm price and procurement price compared with average cost per ton for major food crops during the period 1981 to 1990

Crop	Period	Average cost per ton (LE*)		Average price per ton (LE)		Average price per ton + Average cost per ton (percentage)			
		Ministry of agriculture data + tax-based rent (1)	Field data + free rent (2)	Procurement system (3)	Farm price (4)	(3)X100 (1)	(3)X100 (2)	(4)X100 (1)	(4)X100 (2)
Wheat	1981-1985	148.69	223.04	105.58	115.93	71.0	47.43	77.97	51.98
	1986-1990	198.53	357.35	299.16	319.28	150.69	83.72	160.82	89.34
	1981-1990	177.53	290.20	202.37	217.61	114.01	69.73	122.60	74.99
Maize	1981-1985	135.06	202.59	-a/	150.62	-	-	111.52	74.35
	1986-1990	195.91	352.64	292.74	325.74	149.43	83.01	166.27	92.37
	1981-1990	167.43	277.62	-	238.18	-	-	142.26	85.79
Rice	1981-1985	116.41	174.62	105.0	139.41	90.20	60.13	119.76	79.84
	1986-1990	176.77	318.18	225.60	267.77	127.62	70.90	151.48	84.16
	1981-1990	147.47	246.40	165.30	203.59	112.09	67.09	138.06	82.63
Broad beans	1981-1985	207.78	311.67	247.64	264.24	119.18	79.46	157.17	84.78
	1986-1990	311.66	560.98	457.90	565.70	146.92	81.63	181.51	100.84
	1981-1990	264.67	436.33	352.77	414.97	133.29	80.85	156.79	95.10
Lentils	1981-1985	402.79	604.19	481.24	597.0	119.48	79.65	148.22	98.81
	1986-1990	503.29	905.92	875.0	1 217.76	173.86	96.59	241.96	134.42
	1981-1990	462.32	755.06	678.12	907.38	146.68	89.81	196.27	120.17
Potatoes	1981-1985	97.38	146.07	-	109.52	-	-	112.47	74.98
	1986-1990	126.65	227.97	-	205.12	-	-	161.96	89.98
	1981-1990	119.95	187.02	-	157.32	-	-	131.15	84.12
Tomatoes	1981-1985	62.10	93.15	-	110.60	-	-	178.10	118.73
	1986-1990	81.28	146.30	-	249.58	-	-	307.06	170.59
	1981-1990	77.07	119.73	-	180.09	-	-	233.67	150.41

Source: Compiled and computed from: Egypt, Ministry of Agriculture and Land Reclamation, Institute of Agricultural Economics Research, records of the Statistics Section, unpublished data (various years); and A.M. Hadhoud, "The market for agricultural production inputs under changing agricultural policies," a paper presented at the Second Conference of Egyptian Agricultural Economists, held in Cairo, September 1992 (in Arabic).

a/ Delivery of maize began in 1986.
* LE = Egyptian pounds.

D. The impact of price changes on consumed quantities of food and beverages

The study of changes in the consumer price index for food and beverages in rural and urban Egypt (Hadhoud, 1989) showed that the average rate of annual growth for this index was estimated at about 15 per cent for both rural and urban Egypt. Assuming that this rate was constant for all regions and all sectors of economic activity, it is possible to determine the expected changes in the indices for consumed quantities of food and beverages (see table 51).

Table 51 shows that the largest relative changes in the indices for consumed quantities occurred in the following sectors in both rural and urban Egypt: construction, farming and fishing, and transportation and communications. The following sectors (in both rural and urban Egypt) showed a relatively low response to price increases: community/social services, manufacturing, and finance and insurance. Table 51 also shows that rural residents showed a higher level of response to price changes than did urban residents (in terms of consumed quantities of food and beverages); this implies the need for more concern regarding pricing policy and also for more follow-up in rural Egypt.

It should be mentioned that the preceding evaluation is based on a constant rate of price increases for both urban and rural regions. In truth, this assumption does not reflect the day-to-day reality, where there is no control over rural markets or high prices; the negative impact of this (i.e., high and continuously increasing prices) is and will continue to be more keenly felt by the rural than by the urban population.

E. Other factors affecting food consumption patterns

1. The relationship between seasonality in agricultural production and Egyptian food consumption patterns

Agricultural production is considered the main source of food supply in Egypt, so of course seasonality has an impact on the availability of food commodities for the Egyptian population. There is a lack of detailed data on the relationship between agricultural production seasonality and consumed quantities over 12-month periods, so primary data from the 1990/1991 study on income, expenditure and consumption (CAPMAS, 1992) are utilized in this part. The study consists of four rounds, each comprising a quarter of a year, covering the period from September 1990 to August 1991. The first round covers September to November 1990, the second covers December 1990 to February 1991, the third covers March to May 1991, and the fourth covers June to August 1991 (see table 52).

The available data concerns average annual expenditure per household in rural and urban Egypt by food group. These data are not quite detailed enough to reflect concrete or specific changes in consumption patterns for major individual food commodities over the 12 months of the year because the aggregation of food groups hides variations at the commodity level; such a detailed study would be of great value and should be carried out (if possible, after collection and consideration of the data provided in the 1990/1991 study on income, expenditure and consumption [CAPMAS, 1992b]).

Table 49. Average consumer price compared with export and/or import price for major crops and food commodities in Egypt during the period 1981 to 1990

Crop or commodity	Period	Average consumer price (LE'/ton) (1)	Average export or import price (LE/ton) (2)	(3)=(1)X100 (2) (percentage)	Crop or commodity	Period	Average consumer price (LE/ton) (1)	Average export or import price (LE/ton) (2)	(3)=(1)X100 (2) (percentage)
Wheat	1981-1985 1986-1990 1981-1990	42.8 140.4 91.6	152.98 262.14 207.56	27.98 53.56 44.13	Onions	1981-1985 1986-1990 1981-1990	200.0 290.0 245.0	238.82 490.10 364.46	83.75 59.17 67.22
Annual growth rate	1981-1990	22.81%	10.52%		Annual growth rate	1981-1990	10.34%	11.63%	
Maize	1981-1985 1986-1990 1981-1990	60 288 174	137.5 253.34 195.42	73.64 113.68 89.04	Garlic	1981-1985 1986-1990 1981-1990	238.0 236.0 237.0	523.68 801.64 662.66	45.45 29.44 35.76
Annual growth rate	1981-1990	30%	11.4%		Annual growth rate	1981-1990	-1.2%	6.5%	
Rice	1981-1985 1986-1990 1981-1990	140 590 365	269.50 473.68 371.59	51.95 124.56 98.23	Navel oranges	1981-1985 1986-1990 1981-1990	290.0 740.0 515.0	346.64 937.00 642.17	83.66 78.92 80.20
Annual growth rate	1981-1990	26.37%	9.65%		Annual growth rate	1981-1990	21.34%	17.04%	
Broad beans	1981-1985 1986-1990 1981-1990	142.0 830.0 486.0	271.86 687.0[a] 390.0[b]	52.23 120.82 124.62	Refined sugar	1981-1985 1986-1990 1981-1990	300 860 580	205 930.8 567.9	146.34 92.40 102.13
Annual growth rate	1981-1990	35.41%	24.42%[c]		Annual growth rate	1981-1990	20.14%	28.72%	
Lentils	1981-1985 1986-1990 1981-1990	302.0 1 490.0 896.0	388.70 1 069.66 729.18	77.69 139.30 122.88	Vegetable oil	1981-1985 1986-1990 1981-1990	300 1 210 755	566.72 1 015.72 791.22	52.94 119.13 95.42
Annual growth rate	1981-1990	36.08%	21.83%		Annual growth rate	1981-1990	26.19%	11.89%	
Potatoes	1981-1985 1986-1990 1981-1990	180.0 380.0 280.0	165.14 369.6 267.37	109.0 102.81 104.72	Tomatoes	1981-1985 1986-1990 1981-1990	196 464 330	-- 442.4[d] --[e]	-- 104.88 --
Annual growth rate	1981-1990	15.98%	13.63%		Annual growth rate	1981-1990	17.62%	34.22%	

Table 49. (continued)

Crop or commodity	Period	Average consumer price (LE*/ton) (1)	Average export or import price (LE/ton) (2)	(3)=(1)X100 (2) (percentage)	Crop or commodity	Period	Average consumer price (LE/ton) (1)	Average export or import price (LE/ton) (2)	(3)=(1)X100 (2) (percentage)
Domestic meat	1981-1985 1986-1990 1981-1990	4 100 7 680 5 890	969.60 1 221.75[f] 1 081.67[f]	422.85 628.61 544.53	Shortening ghee	1981-1985 1986-1990 1981-1990	250 1 250 750	..	..
Annual growth rate	1981-1990	13.89%	3.97%[g]		Annual growth rate	1981-1990	29.77%	..	..
Imported frozen meat	1981-1985 1986-1990 1981-1990	922 3 300 2 111	969.60 1 221.75[f] 1 081.67[f]	95.10 270.10 195.16	Flour (82%)	1981-1985 1986-1990 1981-1990	91.0 248 169.5	..	..
Annual growth rate	1981-1990	27%	3.97%[g]		Annual growth rate	1981-1990	22.43%	..	..
Domestic poultry	1981-1985 1986-1990 1981-1990	2 840 4 250 3 545	730.40 713.40[f] 722.84[g]	388.83 595.74 490.43	Fine flour (72%)	1981-1985 1986-1990 1981-1990	110.0 294.0 202.0	..	..
Annual growth rate	1981-1990	8.93%	-1.0%[g]		Annual growth rate	1981-1990	19.74%	..	..
Imported frozen poultry	1981-1985 1986-1990 1981-1990	1 160 2 025 1 544.44	730.40 713.40[f] 722.84[f]	158.82 283.85 213.66	White cheese (old)	1981-1985 1986-1990 1981-1990	1 966.0 3 614.0 2 790.0	..	..
Annual growth rate	1981-1990	11.66%	-1.0%[g]		Annual growth rate	1981-1990	13.58%	..	..
Domestic fish	1981-1985 1986-1990 1981-1990	2 180.0 3 830.0 3 005	317.6 499.0 408.3	686.4 767.54 735.98	Eggs (piasters/egg)	1981-1985 1986-1990 1981-1990	8.3 12.3 10.3	..	..
Annual growth rate	1981-1990	12.66%	8.28%		Annual growth rate	1981-1990	8.23%	..	..
Imported frozen fish	1981-1985 1986-1990 1981-1990	400 870 635	317.6 499.0 408.3	125.94 174.35 155.52	Aspermous grapes	1981-1985 1986-1990 1981-1990	690 1 140 915	..	..
Annual growth rate	1981-1990	14.3%	8.28%		Annual growth rate	1981-1990	14.15%	..	..

Source: Compiled and computed from: Egypt, Institute of National Planning, Issues of Planning and Development in Egypt: Economic Reform and the Agricultural Sector (in Arabic), Bulletin No. 77 (Cairo, October 1992); and F.H. Rizk, "The demand for rationed food commodities", a paper presented at the National Symposium on Agricultural Policies in the Arab Republic of Egypt, held by the Ministry of Agriculture and Land Reclamation (Egypt) with FAO in Cairo in January 1992 (in Arabic).

Two dots (..) indicate that data are not available.

(a) 1986-1987 average, as the import of broad beans began in 1988;
(b) 1981-1987 average;
(c) Rate of annual growth for the period 1981-1987;
(d) Export price for the period 1986-1990;
(e) Rate of annual growth for the period 1986-1990;
(f) 1981-1989 average;
(g) Rate of annual growth for the period 1981-1989.

* LE = Egyptian pounds.

Table 50. Derivation of price elasticity of demand for food and beverages for urban and rural Egypt according to the economic activity of the householder

Sector	Urban areas			Rural area		
	Expenditure elasticity	Percentage of expenditure on food	Price elasticity of demand	Expenditure elasticity	Percentage of expenditure on food	Price elasticity of demand
Farming and fishing	0.600	56.07	-0.366	0.600	59.56	-0.357
Mining and electricity	0.560	51.01	-0.285	0.560	55.64	-0.311
Manufacturing	0.510	50.42	-0.257	0.510	55.23	-0.281
Construction	0.840	49.01	-0.411	0.898	55.43	-0.498
Commerce and restaurant	0.566	48.70	-0.275	0.566	55.44	-0.313
Transportation and Communications	0.654	49.51	-0.323	0.690	56.15	-0.387
Finance and insurance	0.560	46.66	-0.261	0.560	55.08	-0.308
Community/social services	0.502	48.85	-0.245	0.502	55.26	-0.277

Source: Compiled and computed from: A.M.A. Hadhoud, "The relationship between price and consumption in the Arab Republic of Egypt", a paper presented at the Conference on Economics and Development in Egypt and Arab Countries, held at El-Mansoura University in Egypt in March 1989 (in Arabic).

Table 51. Changes in consumed quantities of food and beverages in response to price increases according to the economic activity of the householder in rural and urban Egypt

Economic activity	Urban areas	Rural areas
	Change in consumed quantities in response to price increases (percentage)	Change in consumed quantities in response to price increases (percentage)
Farming and fishing	5.04	5.35
Mining and electricity	4.27	4.66
Manufacturing	3.82	4.21
Construction	6.16	7.47
Commerce and restaurants	4.13	4.70
Transportation and communications	4.85	5.81
Finance and insurance	3.91	4.62
Community/social services	3.67	4.15

Source: Compiled and computed from: A.M.A. Hadhoud, "The relationship between price and consumption in the Arab Republic of Egypt", a paper presented at the Conference on Economics and Development in Egypt and Arab Countries, held at El-Mansoura University in Egypt in March 1989 (in Arabic).

Table 52. Average annual food and beverage expenditure per household in urban areas of Egypt in 1990/1991, by food group and by (quarterly) round of research

Food group		Average annual expenditure per household				Aggregate average annual expenditure per household over four rounds (quarters)
		First quarter	Second quarter	Third quarter	Fourth quarter	
Grains and starches	LE*	458	460	464	471	463.25
	Percentage	98.87	99.3	100.16	101.67	100
Dry legumes	LE	60	65	64	69	64.49
	Percentage	93.04	100.79	99.24	106.99	100
Vegetables	LE	313	298	351	336	324.71
	Percentage	96.39	91.17	108.09	103.48	100
Fruits	LE	168	132	180	186	166.59
	Percentage	100.85	79.24	108.05	111.65	100
Poultry and meat	LE	680	635	655	685	663.64
	Percentage	102.46	95.68	98.70	103.22	100
Fish	LE	156.0	149	145	154	150.94
	Percentage	103.35	98.71	96.06	102.03	100
Eggs	LE	76	71	68	68	70.73
	Percentage	107.45	100.38	96.14	96.14	100
Milk and dairy products	LE	271	264	244	254	258.13
	Percentage	104.98	102.27	94.53	98.4	100
Oils and fats	LE	207	204	214	198	205.83
	Percentage	100.57	99.11	103.97	96.19	100
Sugar and sugar commodities	LE	156	133	124	121	133.43
	Percentage	116.91	99.68	92.93	90.68	100
Other food commodities	LE	140	127	123	148	134.39
	Percentage	104.17	94.5	91.52	110.13	100
Beverages	LE	100	90	102	106	99.51
	Percentage	100.49	90.44	102.5	106.52	100
Total for food and beverages	LE	2 785	2 628	2 734	2 796	2 735.64
	Percentage	101.80	96.06	99.94	102.21	100

Source: Compiled and computed from: Egypt Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption, primary results, four rounds, Cairo, August 1992 (in Arabic).

* LE = Egyptian pounds.

Average annual expenditure per urban household on grains and starch was estimated at LE 471 in the fourth round (or quarter), or 102.84 per cent of the corresponding expenditure for urban households in the first round. Average annual expenditure per urban household on dry legumes in the fourth round was about 115 per cent of the corresponding average in the first round, while average annual expenditure per urban household on vegetables in the third round was about 117.79 per cent of the corresponding average in the second round. Average annual expenditure per urban household on fruits in the fourth round was about 140.91 per cent of the corresponding average for

the second round. It should be noted that the fourth round period (June, July and August 1991) was the season for most fruits.

Average annual expenditure per urban household on meat and poultry in the fourth round was about 107.87 per cent of the corresponding average for the second round, while average annual expenditure per urban household on fish in the first round was about 107.59 per cent of the corresponding average for the third round. For eggs, average annual expenditure per urban household in the first round was about 111.76 per cent of the corresponding averages for the third and fourth rounds (average annual expenditure for the third and fourth rounds were about the same). Average annual expenditure per urban household on milk and dairy products in the first round was about 111.07 per cent of the corresponding average for the third round, while average annual expenditure per urban household on oils and fats in the third round was about 108.08 per cent of the corresponding average for the fourth round. Average annual expenditure per urban household on sugar and sugar commodities in the first round was about 128.93 per cent of the corresponding average for the fourth round, while average annual expenditure per urban household on other food commodities in the fourth round was about 120.33 per cent of the corresponding average for the third round. Average annual expenditure per urban household on beverages in the fourth round was about 117.78 per cent of the corresponding average for the second round. And finally, the average annual expenditure per urban household on food and beverages as a whole was, in the fourth round, about 106.4 per cent of the corresponding average for the second round.

The preceding discussion shows that for urban areas in Egypt, the highest variations among the four rounds were observed for fruits, other food commodities, beverages, and vegetables, while the lowest variations were observed for grains and starches, fish, and meat and poultry.

The ranking of food groups with a high percentage of variation in rural Egypt in 1990/1991 is as follows (see table 53): fruits (356 per cent), sugar and sugar commodities (160.20 per cent), milk and dairy products (134.84 per cent), other food commodities (129.63 per cent), and dry legumes (127.38 per cent). Groups with a low percentage of variation in rural Egypt in 1990/1991 can be ranked as follows: grains and starches (108.55 per cent), eggs (110 per cent), and meat and poultry (111.82 per cent). This indicates that variations among rounds in rural Egypt exceeded the corresponding variations among rounds for urban regions. Furthermore, the variation in average annual expenditure on food and beverages as a whole was higher for rural Egypt (112.61 per cent) than for urban Egypt (106.39) (see table 53).

2. New social strata and food consumption patterns

The appearance or evolution of new social strata—i.e., those with high incomes and high purchasing power—has affected Egyptian food consumption patterns because of the low marginal propensity of such groups to save and/or invest, as well as their high marginal propensity to consume. Those belonging to these groups include some professionals in fields with high wage rates, some farmers who produce cash crops for export or crops outside the compulsory deliveries system, those involved in certain trade activities, and workers abroad.

Table 53. Average annual food and beverage expenditure per household in rural areas of Egypt in 1990/1991, by food group and by (quarterly) round of research

Food group		Average annual expenditure per household				Aggregate average annual expenditure per household over four rounds (quarters)
		First quarter	Second quarter	Third quarter	Fourth quarter	
Grains and starches	LE Percentage	749 103.56	690 95.4	735 101.62	719 99.41	723.28 100
Dry legumes	LE Percentage	107 112.55	97.0 102.03	92 96.77	84 88.35	95.07 100
Vegetables	LE Percentage	320 98.09	307 94.11	346 106.06	332 101.77	326.22 100
Fruits	LE Percentage	132 73.48	100 55.67	356 198.17	129 71.81	179.64 100
Poultry and meat	LE Percentage	627 100.43	584 93.54	634.0 101.55	653 104.59	624.31 100
Fish	LE Percentage	98 103.09	102 107.3	94.0 98.88	86 90.47	95.06 100
Eggs	LE Percentage	60 95.96	64 102.37	66 105.57	60 95.97	62.52 100
Milk and dairy products	LE Percentage	171 96.94	209 118.49	170 96.38	155 87.87	176.39 100
Oils and fats	LE Percentage	232 101.61	231 101.17	233 102.04	217 95.04	228.33 100
Sugar and sugar commodities	LE Percentage	157 130.13	119.0 98.63	108 89.51	98 81.23	120.65 100
Other food commodities	LE Percentage	105 118.59	86 97.13	81 91.48	82 92.61	88.54 100
Beverages	LE Percentage	85.0 102.13	76 91.31	86 103.33	86 103.33	83.23 100
Total for food and beverages	LE Percentage	2 843 101.42	2 665 95.07	3 001 107.05	2 701 96.35	2 803.24 100

Source: Compiled and computed from: Egypt, Central Agency for Public Mobilisation and Statistics, Research on Income, Expenditure and Consumption, primary results, four rounds, Cairo, August 1992 (in Arabic).

The Egyptians working abroad are considered the most important among the new classes. This group is characterized by new patterns of food consumption because of their stay abroad and their interaction with new societies and ways of life, and also because of the remittances they were able to send to their households in Egypt. Such remittances increased the purchasing power of these households; most of the money was used for consumption purposes. In a study by the present author on the major factors affecting the remittances of Egyptians abroad (Hadhoud, 1990), remittances were estimated at LE 393.8 million in 1976. This amount increased to about LE 2,105.2 million in 1980/1981 and to LE 2,956.2 million in 1983/1984; however, there was a

reduction in remittances in 1985/1986, with the total falling to an estimated 2,160.8 million. The Central Bank of Egypt issued an estimate of LE 9,763.7 million for remittances in 1989/1990.

A study by A.I. Ismail (1990), which is based on research on households within the external migration project (carried out by CAPMAS in 1987), represents an effort towards drawing some statistical indicators for the migration of Egyptian labour and its impact on Egyptian society. With respect to the housing dimension, the study showed that 49.2 per cent of non-migrant householders were owners of houses, against 56.3 per cent of migrant householders.

With respect to investment patterns for migrants after their return, the study showed that more than 90 per cent of them had invested or put aside their savings in one of three ways—i.e., property and real estate (47.1 per cent), bank savings (35.2 per cent) and agricultural activities (10.5 per cent). The study also showed that investment patterns varied according to type of area in Egypt (i.e., urban versus rural). Urban (migrant) households concentrated their investments in bank savings (51.7 per cent), real estate (34.6 per cent) and then agricultural activity (1.9 per cent), while the returning migrants from rural areas tended to invest in real estate (60.7 per cent), agricultural activity (19.7 per cent) and lastly, bank savings (17.2 per cent).

Ibrahim and Mohie El-Din (1988) reviewed and critiqued, a number of studies carried out on Egyptian Labour Migation. Their own study showed the existence of clear variations between migrants and non-migrants with respect to consumption patterns, especially in terms of expenditure on durable goods and food and beverages. In his study on oil and Arab unity, Abdel-Fadil (1981) indicated that migration had played an active role in the formulation and spread of new consumption patterns, characterized by conspicuous consumption and a greater focus on luxuries—i.e., in the Egyptian context, what might be considered over-consumption. The main reason behind the diffusion of this pattern was simulation (i.e., copying what they had observed abroad).

Darwish's study (1990) on temporary migration and its impact on development plans indicated that this kind of migration has enabled migrants to buy buses and other kinds of vehicles, as well as other high-value commodities. This has resulted in the emergence of new patterns which are characterized by simulation, a greater proportion of household expenditure on consumption commodities, and the use of some savings to finance the importation of consumption commodities. In general terms, translates into increased imports and a reduced capacity for saving, which means a reduction in the availability of required investment for development.

3. The impact of values and traditions on food consumption patterns

Values, prevalent traditions and religious beliefs and practices are major factors affecting the consumption of some commodities; in particular, social and religious occasions increase consumption. Also included under this heading are factors related to simulation (i.e., imitation), which has an impact on consumption patterns as well; it is well known, however, that this area of study lacks detailed research.

VI. SUMMARY AND CONCLUSIONS

This final chapter summarizes the major points presented in the various chapters, and offers a number of conclusions. The Egyptian food situation throughout the 1980s was discussed in chapter I, while chapter II dealt with food consumption policies in Egypt during the same period. Chapter III discussed the impact of population growth and urbanization on food consumption patterns in Egypt, chapter IV dealt with variations in food consumption patterns according to per capita income in rural and urban Egypt, and chapter V was devoted to a discussion of the major factors affecting Egyptian food consumption patterns throughout the 1980s. Below is a chapter by chapter summary and analysis.

A. An analysis of the Egyptian food situation in the 1980s

The following conclusions were obtained from this study's analysis of domestic production. Large increases in domestic production from the first period (1980/1981 to 1984/1985) to the second period (1985/1986 to 1989/1990) observed in the case of wheat (55 per cent), fresh fish (53.93 per cent), poultry (50.51 per cent), eggs (46.91 per cent), vegetable oil (38.85 per cent) and broad beans (38.43 per cent). Moderate increases in domestic production was observed for white rice (9.94 per cent), fresh milk (7.38 per cent) and ghee (0.83 per cent). The application of average annual growth rate as a method of estimation produced similar results. The following commodities had a positive annual growth rate between the two periods; poultry (13.16 per cent), fresh fish (8.42 per cent), wheat (8.39 per cent), broad beans (7.45 per cent), fresh milk (1.5 per cent) and white rice (2.07 per cent), while a negative annual growth rate was observed for ghee (-0.003 per cent).

The study of changes in foreign trade showed the following conclusions for the second half of the 1980s as compared with the first half. An increase in imports was observed for wheat (21.09 per cent), maize (12.57 per cent), red meat (9.81 per cent), and fresh fish (8.31 per cent). A decrease in imports was observed for fresh milk (98.83 per cent), ghee (92.02 per cent), eggs (66.26 per cent), poultry (57.25 per cent), refined sugar (14.15 per cent), wheat flour (13.76 per cent), and vegetable oil (9.41 per cent).

The following exports increased in the second period by the percentages listed: rice (14.01 per cent), potatoes (6.55 per cent), and citrus fruits (1.88 per cent); however, decreases in exports were observed between the first and second periods for fresh grapes, other vegetables, and melons and watermelon.

Self-sufficiency decreased over the 1980s period in some cases; to a degree where the following commodities met less than two thirds of consumption requirements: lentils (17.07 per cent self-sufficiency rate), wheat (33.5 per cent), sugar (51.58 per cent), vegetable oil (62.4 per cent), and fresh fish (66.28 per cent). Other self-sufficiency rates were higher over the same period, as follows: maize (70.26 per cent), red meat (77.98 per cent), ghee (88.79 per cent), poultry (88.87 per cent), broad beans (94.44 per cent), eggs (97.2 per cent) and fresh milk (99.94 per cent). Self-sufficiency rates exceeded 100 per cent for white rice, potatoes, citrus fruits, other vegetables, and other fruits.

B. Food consumption policies in Egypt in the 1980s

The study of developments in rationed quantities of vegetable oil, sugar and tea during the 1980s period showed disparities in per capita subsidy between the rural and urban areas; this may be due to differences in rationed quantities of vegetable oil in the two areas. It is also worth noting that per capita subsidy increased six-fold in urban areas and 5.94 times in rural areas during the 1980s decade.

The study of the per capita rations distributed by the Ministry of Supply and Internal Trade (by governorate) showed the following results. Per capita rations in urban governorates and frontier governorates were higher than per capita rations in Lower and Upper Egypt for all commodities distributed under this system—namely, wheat, rice, broad beans, lentils, vegetable oil, and sugar. There were variations in per capita rations not only among geographic regions, but also among governorates within the same region.

The study of pricing policies during the 1980s indicated that the Ministry of Supply and Internal Trade adopted the policy of increasing consumer prices for most food commodities at much higher rates during the second (1986 to 1990) periods than had been the case during the first (1981 to 1985) period. Under this policy, the per-ton subsidy was decreased for most food commodities, as follows: imported wheat (-59.14 per cent), imported wheat flour (-47.47 per cent), broad beans (-16.3 per cent), imported vegetable oil (-15.89 per cent), and maize (-12.11 per cent). In some cases, subsidy per ton increased in the second period over the first—i.e., for domestic wheat, domestic and imported sugar, the imported fish group, meat and poultry, and white rice.

The study of developments in food commodities subsidy during the 1980s indicated the following: average annual subsidy of food commodities was estimated at LE 1,797 million for the first period, but decreased to about LE 1,363 million during the second period. The policy of decreasing subsidy during the second half of the 1980s has resulted in a total reduction of about one third of per capita subsidy in the second period compared with the first period.

The study of food aid received by Egypt during the period 1984 to 1990 showed that average annual food aid was estimated as follows: wheat (282,400 tons), wheat flour (101,400 tons), vegetable oil (11,600 tons), dried milk (13,500 tons), sugar (7,900 tons), and rice (6,900 tons). Lower quantities of other commodities—i.e., frozen meat, ghee, preserved cheese and preserved fish—were also received.

C. Population growth and urbanization and their relationship to food consumption patterns in Egypt

The study of population growth showed that Egypt's numbers increased by about 85 per cent from 1960 to 1986, with an average annual growth rate of about 2.14 per cent and 2.8 per cent during the periods 1960 to 1976 and 1976 to 1986, respectively. The average annual growth rate for urban population was different from that for rural population; during the period 1960 to 1976, the average annual rate of urban population growth was about twice the corresponding rate for rural population (3.02 per cent against 1.54 per cent); however, the figures for urban and rural areas were about the same for the period 1976 to 1986 (2.84 per cent against 2.77 per cent). Variations

in the average annual growth rate for the rural population was due to internal migration from rural to urban areas. Urban population as a percentage of total population was estimated in 1960, 1976 and 1986 at about 38.2, 43.78, and 43.97 per cent, respectively. This indicates that the rate of rural-to-urban migration during the 1960 to 1976 period was higher than the corresponding rate for the 1976 to 1986 period.

Average annual expenditure per household varied by geographic region and over time (between 1981/1982 and 1990/1991). This average for rural areas of Upper Egypt was about 65.06 per cent of the corresponding average for urban governorates in 1981/1982, against 67.92 per cent in 1990/1991. Variations were also detected for average annual expenditure per household on food and beverages in general and for specific food groups in certain areas. For example, the fish group showed a high degree of variation in terms of household expenditure; the average for rural areas of Upper Egypt was an estimated 25.3 per cent of the corresponding average for urban areas of Lower Egypt. The reason for this was that the population in coastal areas consumed larger quantities of the fish group, for obvious reasons. Average annual expenditure on milk and dairy products per household in rural areas of Upper Egypt was about 24.27 per cent of the corresponding average for urban governorates.

Consumption patterns varied not only by geographic region, but from governorate to governorate within the same region. For example, average annual expenditure on grains and starches per household in urban areas of Damietta Governorate was about 61.14 per cent of the corresponding average for urban areas of Kafr El-Sheikh Governorate (even though they are adjacent). It should be mentioned that the governorates with a high average annual expenditure on vegetables per household for both rural and urban areas were located in Lower Egypt, while the governorates with a low average annual expenditure on the same commodities group for rural and urban areas were located in Upper Egypt. This might be explained by variations in the cropping patterns between Lower and Upper Egypt.

The study of variations in food consumption patterns according to householder occupation showed that average annual expenditure per household on most food groups was higher among the following: administrative and managerial workers, sales workers, and clerical workers (compared with the other occupations studied).

The study showed that food consumption patterns also varied according to householder employment status. For example, average annual expenditure per household for those working with the family for no monetary wage was about 48.62 per cent of the corresponding average for those in the self-employed category. It should be mentioned that average annual expenditure per household for those working with the family for no wage in rural areas exceeded the corresponding aggregate average for rural Egypt as a whole; the opposite was true for urban areas. The main reason for this result was that most in this category worked in agriculture and related activities, which ensured self-sufficiency in terms of most food commodity requirements.

The study also indicated that average annual expenditure per household varied by family size. This average for a household of nine was about 33.46 and 79.06 per cent above the corresponding average for a household of three in urban and rural areas of Egypt, respectively—i.e., variations were higher in rural than in urban areas. Average annual expenditure on food and beverages for

a household of nine was about 50.66 and 92.8 per cent above the corresponding average for a household of three in urban and rural Egypt, respectively—i.e., again, there were higher variations in rural areas than in urban areas. Variations in average annual expenditure on food and beverages exceeded variations in total average annual expenditure, because the latter category included many items which did not change by household size.

D. Variations in food consumption patterns according to per capita income in urban and rural Egypt

The study showed that the average annual growth rate for GNP was an estimated 18.78 per cent during 1981/1982 to 1986/1987, 20.81 per cent during 1986/1987 to 1991/1992, and about 19.97 per cent for the whole period 1981/1982 to 1991/1992. Average annual growth rate in aggregate final consumption expenditure was estimated at 18.05, 24.14, and 21.06 per cent for the same periods, respectively. In other words, average annual growth rate for final consumption expenditure exceeded the corresponding rate for GNP during the 1986/1987 to 1991/1992 and 1981/1982 to 1991/1992 periods; the average annual growth rate for total household expenditure exceeded the average annual growth rate for aggregate expenditure during all of the periods mentioned above. The rate of average annual growth for total household expenditure was estimated at 22.12 per cent for urban Egypt and 23.01 per cent for rural Egypt during the whole 1981/1982 to 1991/1992 period.

The study of developments in average annual consumption expenditure per household between 1981/1982 and 1990/1992 revealed that higher rates of increase occurred for the following expenditure items: payments, culture and recreation, education, health care and services, and transportation and communications. These items combined constituted about 9.47 and 16.65 per cent of total annual consumption expenditure per household in 1981/1982 and 1990/1991, respectively. A moderate average annual increase during the 1981/1982 to 1990/1991 period was observed for the following items: food and beverages, furniture, and other consumption items; these items constituted about 61.52 and 60.38 per cent of total annual consumption expenditure per household in 1981/1982 and 1990/1991, respectively. Average annual expenditure on the remainder of the items decreased between 1981/1982 and 1990/1991.

With respect to disparities in the distribution of household expenditure for rural and urban Egypt in 1981/1982, the study showed that 60 per cent of the Egyptian urban population was responsible for 39 per cent of the total urban area expenditure, so 40 per cent were above the average distribution and were responsible for 61 per cent of total urban expenditure. In rural Egypt, 60 per cent of the population was responsible for 40.1 per cent of expenditure, against 59.9 per cent of expenditure for 40 per cent of the population (who were above the average distribution levels). This indicates that disparities existed in both rural and urban areas of Egypt. Furthermore, the Gini coefficient showed higher disparities among urban areas than among rural areas in Egypt.

Variations in expenditure by poorest households (those in the less than LE 200 class) and richest households (those in the LE 10,000 and above class) were high. Expenditure for a very poor household in 1981/1982 was only about 0.44 and 0.98 per cent of the corresponding expenditure for a very rich household in urban and rural Egypt, respectively.

The 1990/1991 research on income, expenditure and consumption in Egypt (CAPMAS, 1992b) was the first to provide data on income at both the geographic region and governorate levels. Average annual income per Egyptian household was estimated at LE 5,400.4 for 1990/1991. Average annual expenditure per Egyptian household constituted about 98.4 per cent of average annual income. Some illogical data and results were observed. For example, average annual expenditure per household in urban governorates and in all urban areas combined exceeded average annual income; this might have been due to the fact that the data were preliminary (i.e., not final or confirmed).

The study of household income sources for urban and rural Egypt showed that average annual income from wages and salaries constituted the highest share of total average annual income per urban household in urban governorates (60.8 per cent) and in urban areas of Lower Egypt (41.53 per cent). Average annual income from agricultural activities were ranked first with a share of about 50.54 and 34.32 per cent of total average annual household income in rural areas of Lower Egypt and the frontier governorates, respectively.

Household income also varied at the governorate level—among the rural and urban areas of the same governorate. For example, average annual household income from salaries and wages in urban areas of Beni-Suef Governorate was only about 42.21 per cent of the corresponding average for urban areas of Ismailia Governorate, while average annual household income from salaries and wages in rural areas of Menia Governorate was about 42.8 per cent of the corresponding average for rural areas of Damietta Governorate.

The average annual rate of increase in the consumption of any food group is the sum of the annual increase in population and the annual increase in consumption due to increases in income. By using this formula, it was possible to determine the effects of both population increase and income increase on the total increase in consumption. The impact of income was high with respect to consumption of the following food groups: the fish group (74.44 per cent), other food commodities (67.31 per cent), fruits (65.11 per cent), milk and dairy products (61.28 per cent), meat and poultry (59.6 per cent), and vegetables (59.5 per cent); the impact of income on the consumption of food and beverages as a whole was about 52.67 per cent. The impact of income on consumption was low for the following groups: oils and fats (29.82 per cent), sugar and sugar commodities (38.82 per cent), grains and starches (41.15 per cent), beverages (46.4 per cent), eggs (46.89 per cent), and dry legumes (48.45 per cent).

E. Major factors affecting food consumption patterns in Egypt

The study of cropping patterns during the period 1980 to 1990 showed that the cropping area increased by about 515,700 feddan over this decade. Major crop groups can be ranked according to their proportional share in 1990, as follows: grains (44.96 per cent), fodder (23.88 per cent), vegetables (9.84 per cent), fibres (8.82 per cent), fruits (4.88 per cent), dry legumes (3.26 per cent), sugar crops (2.57 per cent), and oil crops (1.77 per cent). Changes in cropping patterns during the 1980 to 1990 period favoured food crops at the expense of fibre and fodder crops; this, in turn, resulted in an increase in the Egyptian food supply.

Because of the relationship between pricing policy (especially the procurement system) and production cost for most crops, developments in average annual increases in cost items were discussed (based on official prices and tax-based rent) for major food crops during the 1980s in order to determine the relationship between farm and procurement prices and cost per ton or per feddan. For most crops, the per-feddan cost at free prices was about 150 per cent of the corresponding cost at official prices during the period 1980 to 1985, against 180 per cent during the second half of the 1980s.

Farm price as a percentage of cost per ton at official prices was high, exceeding 100 for tomatoes (233.7 per cent) and wheat (122.6 per cent), against 150.4 per cent and 75 per cent for the same crops at free prices. Overall, the study showed that farm prices and procurement prices for most crops under the compulsory system were low compared with the corresponding cost at the production-per-ton or -per-feddan levels. However, Some improvements occurred under the pricing policy by the late 1980s and early 1990s, mainly because of the increase in procurement prices for some crops and the elimination of compulsory delivery quotas for most agricultural crops.

The study of the role of pricing policies and their impact on Egyptian food consumption patterns showed that domestic pricing policies were characterized by a tendency towards increasing consumer prices for most food commodities during the second period of the 1980s (1986 to 1990) in comparison with the first period (1981 to 1985). As a result of this trend, domestic prices exceeded import or export prices for the same commodity. This situation was due to a number of factors, including an inflation rate which increased from the first to the second half of the 1980s, as well as the policy of decreasing subsidies for some commodities, and by the late 1980s, completely eliminating subsidies for most of them.

The primary data of the 1990/1991 research on income, expenditure, and consumption in Egypt (CAPMAS, 1992b), which divides this period into four equal quarters, or "rounds", discusses the impact of agricultural production seasonality on food consumption patterns. The results of this research showed that the highest variations among the four rounds for urban and rural regions were observed for the following food groups: fruits, sugar, milk, beverages and vegetables. The lowest variations for urban and rural regions among the four rounds were observed for grains and starches, fish, eggs, and poultry and meat.

Finally, in the last part of chapter five, the study discussed the impact of new social strata and traditions (especially those related to religion) on food consumption patterns. Special attention was also given to the impact of Egyptian migration on these patterns.

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