

CHANGES IN FOOD CONSUMPTION IN THE ARAB COUNTRIES

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ABSTRACT

During the last 30 years food consumption patterns have been changed in several Arab Countries. Many factors contributed to these changes such as : the rise of income level and in turn, purchasing power, food price system and subsidies, urbanization, migration, food processing, food import, advertisements, internal conflict and wars, food aids, etc. It is difficult to quantify exactly the changes from food consumption surveys which have been conducted in the Region. Food balance sheet data for certain Arab countries of the region indicate, however, that the available per caput food energy and protein have doubled and fat has increased 3 fold. It was also observed, in a number of countries, that the per capita consumption of sugar, fat and oil, cereals, meat, milk and dairy products, fruits and vegetables, have greatly increased during the last two decades. On the other hand, food consumption patterns have deteriorated in some Arab Countries as a result of internal conflicts as in Iraq, Somalia and Sudan. At present, with the application of structural adjustment programmes in several countries of the region there has been a reduction in the consumption of certain food commodities especially sugar, vegetable oil, meat and cereals because of the increase of their prices after the removal of subsidies as in the case of Egypt. Similarly, with regard to infant feeding, artificial feeding has replaced breastfeeding and the consumption of processed weaning food has replaced traditional weaning food.

Key Words : Food consumption, socio-economic factors, Near East, Arab countries.

INTRODUCTION

The terms Middle East and Near East are often used without any clear definition of the territorial limits involved and there has never been general acceptance of their precise meanings. The Arab Middle East countries included for discussion in this paper comprise the twenty Arab countries who are members of the Arab League. The region under consideration sits astride the lines of communication with Europe, Africa and East Asia, and it has been, as a result, subjected to influences, in terms of their food consumption patterns, from the East as well as the West (Patwardhan and Darby, 1972).

The total land area covered by the twenty Arab countries is 13.67 million Km². Only about one quarter of this area is under agriculture, in which 85% is pasture land with remaining 15% being devoted to arable land and permanent crops. The latter area of permanent crops represents only 3.9% (53.5 million hectares) of the total area of the region. Only 18.7% of the arable land is irrigated and the remaining 81.3% is rain fed. The erratic rainfall in the region contributes to the instability of food production. Thus, the fluctuation and uneven distribution of rainfall in the region affect food production, food availability and consumption in several countries. The two major constraints affecting the expansion of food production in the Arab Middle East are : first, about 75% of the total area is desert and second, the scarcity of water resources in the remaining 25% of agricultural land. In the limited irrigated areas, water resources are to some extent under control, while the other areas, depending on rainfall, suffer from erratic and unpredictable amounts of water. Some countries in the region are thus affected from time to time by severe droughts such as Somalia, Sudan and Mauritania, while other countries may also suffer occasionally from droughts, such as Tunisia, Morocco and Jordan leading to acute food shortages in these countries.

The total population of the Arab Region was about 220 million in 1990/91 with an annual average growth rate (3.1%) which is considered to be among the highest in the world (FAO 1993). This means that the population in the Region will be doubled within the next 23 years, whereas the population of Europe, in contrast, would expect to be doubled in about 235 years. Consequently, food security, availability and consumption in this region will be affected by the high population pressures on the limited arable land as well as scarce water resources coupled with the increased food demand.

The Region is also characterized by a high increase in urbanization which ranges from 4 to 6% per year. As a result, more and more food producers are becoming food consumers, and, the expansion of the cities is mostly at the expense of the limited agriculture land. During the last two decades the region has additionally witnessed massive population movements both within as well as from outside the region. The latter have been mainly from the East Asian countries and have led to changes in food consumption patterns, especially in the labour importing countries (Miladi and Farrag, 1993).

During the last three decades, a very rapid change in food consumption patterns has occurred greater than in all its history and greater than in many other region of the world. This paper will deal with the changes in these patterns.

MAGNITUDE OF THE FOOD PROBLEMS IN THE NEAR EAST REGION

Available data on the food gap in the FAO Near East Region, which consists of all Arab countries with the addition of Turkey, Pakistan and Iran, show that, during the last three decades, the average annual growth rate of food production increased by only 2.2% compared to an increase in food demand which exceeds 5%. This led to an increase in the dependence on costly food imports from outside the Region, which amounted to 44.3 million MT in 1988/90 in comparison to 8.1 million MT in 1969/71. The self-sufficiency ratio (SSR) for major food commodities in turn decreased remarkably during these decades. For example the SSR for cereals declined from 98 to 70%, for wheat from 80 to 68%, for rice from 108 to 86%, for sugar from 75 to 62% and for meat from 99 to 85%. This widening food gap, especially in the Arab Region, is expected to further increase, particularly, if appropriate measures are not taken at both national and regional levels to meet the rapid growth of food demand (FAO, 1993).

Trends in agricultural trade balance in the Near East Region are shown in Table 1, and trends in food imports in the Near East Region (Million US dollars) are shown in Table 2. The large difference between Arab countries and non-Arab countries in terms of trade balances in food and agricultural commodities should be noted.

In addition to the above mentioned constraints, the other factors that affect food production are : (1) The problem of land fragmentation, which hinders the application of modern technology in food production, e.g. Tunisia, Jordan and Egypt. (2) The land tenure system, which is a special problem affecting food production as in Egypt. (3) Inadequate water control and management combined with inefficient drainage systems which has led to progressive loss of cultivated land in many countries. (4) Insufficient use of agricultural inputs such as improved seeds, fertilizers and insecticides, e.g. Sudan and Yemen. (5) Continuous and high rates of urbanization, more and more of the good agricultural land being lost, e.g. Egypt, Syria and Jordan. (6) Desertification and deforestation are becoming real threats to the life of rural populations and food production capacities, e.g. Somalia and Sudan. (7) Agricultural credit facilities have not been always used in favour of small farmers. (8) The marketing system of basic foods from producers to consumers has always been to the disadvantage of producers. (9) The wide gap between agricultural research and agricultural extension services, has had a negative effect on the transfer of modern technology in several countries of the Region (FAO/RNEA, 1992).

Table 1
Trends in Agricultural Trade Balances in the Near East Region* (\$ million)

COUNTRY	1976	1977	1986	1987	1988
Afghanistan	+ 161	- 153	- 81	+ 52	+ 39
Algeria	- 826	- 1 115	- 2 052	- 1 952	- 2 302
Bahrain	- 97	- 134	- 245	- 256	- 260
Cyprus	+ 24	+ 44	- 5	+ 12	+ 1
Djibouti	- 26	- 35	- 80	- 86	- 92
Egypt	- 643	- 724	- 2 954	- 2 883	- 4 421
Iran	- 1 209	- 1 616	- 1 059	- 1 622	- 1 544
Iraq	- 529	- 753	- 1 571	- 1 593	- 2 265
Jordan	- 228	- 216	- 443	- 460	- 483
Kuwait	- 430	- 520	- 954	- 925	- 986
Lebanon	- 251	- 310	- 410	- 379	- 484
Lybia	- 473	- 722	- 1 168	- 1 089	- 1 155
Mauritania	- 43	- 46	- 71	- 88	- 101
Morocco	- 195	- 254	- 246	- 213	- 149
Oman	- 97	- 124	- 361	- 349	- 379
Pakistan	- 1	- 15	- 93	+ 36	+ 146
Qatar	- 86	- 105	- 227	- 222	- 244
Saudi Arabia	- 971	- 1 484	- 3 389	- 3 464	- 3 403
Somalia	+ 11	- 31	- 63	- 55	- 38
Sudan	+ 426	+ 474	- 64	- 223	+ 262
Syria	- 92	- 24	- 261	- 251	- 288
Tunisia	- 77	- 136	- 289	- 204	- 481
Turkey	+ 1 137	+ 1 002	+ 1 552	+ 1 382	+ 2 096
U.A.E.	- 348	- 407	- 919	- 1 032	- 1 083
Yemen Arab Rep	- 160	- 208	- 407	- 342	- 434
Yemen Dem.	- 58	- 74	- 173	- 148	- 203
TOTAL :					
ARAB STATES	- 5 948	- 6 948	- 16 219	- 15 768	- 18 989
NON-ARAB STATES	+ 112	- 432	+ 476	- 140	+ 738
TOTAL NEAR EAST	- 5 081	- 7 380	- 15 743	- 15 908	- 18 251

* Agricultural Trade Balance = Agricultural Exports - Agricultural Import

Source : FAO/Agrostat (1992)

Table 2

Trends in Food Imports in the Near East Region (Million US \$)

COUNTRY	1970 - 75 Average			1983 - 88 Average		
	Cereals	Other Food	Total Food	Cereals	Other Food	Total Food
Afghanistan	10.6	28.3	38.9	23.9	89.3	113.2
Algeria	168.2	292.3	460.5	734.9	963.7	1,698.6
Bahrain	10.9	24.6	35.5	28.1	153.8	181.9
Cyprus	23.3	27.7	51.0	54.5	67.7	122.2
Djibouti	3.0	4.1	7.1	13.5	25.8	39.3
Egypt	350.3	156.8	507.1	1,588.7	1,406.8	2,995.5
Iran	233.8	392.4	626.2	744.8	991.6	1,736.4
Iraq	110.3	200.6	310.9	732.4	976.2	1,708.6
Jordan	26.6	70.4	97.0	147.6	325.3	472.9
Kuwait	36.7	130.3	167.0	125.7	700.1	825.8
Lebanon	57.3	107.2	164.3	78.7	318.6	397.3
Libya	78.8	160.4	239.2	247.1	579.2	826.3
Mauritania	11.7	17.8	29.5	45.1	58.1	103.2
Morocco	119.9	180.4	300.3	273.2	238.8	512.0
Oman	10.2	18.6	28.8	70.2	237.2	307.4
Pakistan	100.3	80.4	180.7	130.3	537.8	668.1
Qatar	5.8	25.2	31.0	29.4	131.9	161.3
Saudi Arabia	104.8	189.6	294.4	1,163.9	1,988.8	3,152.8
Somalia	15.0	10.7	25.7	60.9	38.6	99.5
Sudan	21.5	60.6	82.1	122.2	82.9	205.1
Syria	64.9	111.7	176.6	240.0	248.0	488.0
Tunisia	39.3	86.8	126.1	176.7	192.4	169.1
Turkey	93.9	54.7	148.6	131.0	255.3	386.3
U.A.E.	28.0	66.8	94.8	127.3	744.3	871.6
Yemen Arab Rep.	25.2	30.3	55.5	130.6	228.1	358.7
Yemen Dem.	20.0	26.0	46.1	65.2	122.3	187.5
TOTAL :						
ARAB STATES	1,308.4	1,971.1	3,279.5	6,201.4	9,761.0	15,962.4
NON-ARAB STATES	461.9	583.5	1,045.4	1,084.5	1,941.7	3,026.2
TOTAL NEAR EAST	1,770.3	2,554.6	4,324.9	7,285.9	11,702.7	18,988.6

Source : FAO/Agrostat (1992)

As a consequence of these effects the income gap between rural and urban communities has encouraged rural migration to the cities, which has resulted in new food consumption patterns for those migrants. Problems of the gap between food production and food consumption in the Arab Region will be further elaborated upon in later sections.

FACTORS AFFECTING CHANGE IN FOOD CONSUMPTION PATTERNS IN THE ARAB MIDDLE EAST COUNTRIES

In examining the factors affecting change in food consumption in the Arab Middle East countries, it should be observed, that there are vast differences in socio-economic, ecological and cultural conditions in the different countries. The Region contains the poorest countries (Somalia, Sudan) and the richest countries (U.A.E., Qatar) of the world; the over populated Egypt to the least populated Qatar and from those of highest illiteracy rates (Yemen, Mauritania) to those with some of the lowest rates (Jordan, Tunisia) in the developing world. Due to these wide differences and the complex interrelations among the factors affecting food consumption in the Arab Region it is difficult to consider all the factors involved. In addition, differences in government policies and programmes (particularly as regard to the socio-economic development plans in the countries of the Region and their implications) also significantly affect food consumption and nutrition.

Finally in the context of the Middle East food carries special social and cultural meanings in various communities and psychological significance well beyond consideration of nutritional value or physiological needs.

1. Economic Factors

The food consumption pattern in a given country is a function of food prices and consumer income. Food consumption patterns change as personal income grows. In fact, there is a positive relation between GNP/capita and food energy derived from animal sources, fat and sugar. Additional factors are that low income groups tend to be conservative in their food choices and resistant to change, while high income groups show increased demand for convenience foods and for eating meals outside the home (FAO, 1989).

Food prices are conditioned by several factors. Locally produced food costs are initially affected by prices of agricultural inputs, such as fertilizers, insecticides, high yielding varieties, as well as by rainfall and/or the price of water for irrigation. They are also affected by the marketing and distribution systems, seasonal

variations, food taxation or subsidies, price control or free market, storage and processing, food losses and wastages, use of by-products (as in the case of wheat bran, or molasses in case of sugar industry) and international market demand (as in the case of olive oil in Tunisia or potatoes and rice in Egypt). Several countries ration basic food commodities such as Jordan, Egypt and presently Iraq especially for vegetable oils, sugar and rice. The price of imported food is affected by the international market (supply and demand) and by agreements between governments as in the case of wheat prices (FAO, 1989).

Many governments of the region do have certain food policies especially as regard to price control mechanisms for basic food commodities as in the case of wheat bread in Egypt, couscous in Tunisia, sugar in Syria and rice in Jordan. These food policies need to be reviewed and modified. Recently, Egypt has adopted structural adjustment programmes for both the producers and consumers. These programmes have affected supply and demand for several food commodities. In addition to the above, economic factors such as devaluation of local currency, inflation, and exchange rates also affect food prices.

Consumer income is fundamental in determining food choice. It is influenced by the degree of the economic development of the country, distribution of income, family size, cost of non food items, employment policies and income generating activities as well as the geographic location of the consumer in rural or urban areas.

2. Environmental Factors

The amount of rainfall and its distribution, affect food production and, in turn, food prices and farm income. Certain countries such as Sudan, Somalia and Morocco sometimes suffer from drought. As the price of sorghum increases in Sudan, the price of livestock decreases due to the shortage in animal feed and its high price. Floods also affect food production. Seasonal variations also determine food availability as in the case of fruits and vegetables.

3. Social and Cultural Factors :

Social and cultural factors affect food consumption patterns. The level of education, family size, employment of women, health and nutrition education are important determinants. In addition, cultural factors including religion, beliefs and taboos and local traditions are also significant. This is seen in the spread of bottle feeding replacing breast feeding in many parts of the region as well as the widespread adoption of street foods for low income groups and of fast and convenience foods for those with high income. With the changes in life styles, particularly in countries importing labour, new

food habits have emerged. This is especially noticeable in the Gulf countries that import large numbers of Asian workers.

4. Food Industries and Advertisements

The food industries and their advertisements play a vital role in changing consumption patterns in several countries of the Arab Middle East. This is exemplified in the wide spread consumption of soft drinks and "empty calorie" foods. Furthermore the canning and freezing industries, make it possible for the consumer to have access to several food choices all the year around. The expansion of the dairy industries has also contributed to the increased consumption of dairy products for certain income groups. The food industries also change consumption patterns by improving food appearance such as colour, texture, odour, and flavour, and accordingly the food demand increases. In most countries of the Arab Region food industries are expanding at a very fast rate. As a result of these expansions, more urban as well as rural consumers are becoming users of processed foods such as biscuits, sweets, soft drinks, and snack foods.

5. Physiological and Psychological Factors

Age, sex and physiological requirements, play major roles in food choices. Psychological conditions of the consumer affecting emotions, moods and appetites can significantly change food consumption patterns as in the case of marriage and other special occasions such as religious feasts. This is well seen in the Arab countries particularly during the month of Ramadan where an increase in consumption of certain types of food commodities, especially fat, sugar, and meat are observed.

6. Disaster

The Arab Region faces both man-made disasters, especially wars and international conflicts, as in Iraq, Sudan and Somalia as well as natural disasters such as drought and flood. These disasters have short and long implications on changes in food consumption patterns. Food aid has also contributed to these changes as in the case in Sudan of wheat replacing sorghum which was not previously known to the nomadic population (FAO/RNEA, 1992).

TRENDS IN FOOD CONSUMPTION PATTERNS FOR DIFFERENT FOOD GROUPS IN THE ARAB REGION DURING THE LAST 30 YEARS

The trends in food consumption patterns in the Arab Region are derived from the FAO Food Balance Sheets showing per capita food availability by commodity in a year (FAO/Agrostat, 1992). Only very

limited numbers of countries in the Region have data on national household food consumption derived from surveys based on representative samples of their communities. Food consumption surveys, however, tend to over-estimate actual consumption, particularly for some commodities that can be subject to partial loss and wastage during preparation and consumption. Such over-estimation also includes, other commodities that can be stored at household level such as cereals, oils and sugar.

Cereals

Cereals contribute more than half the food energy and protein supply to the population of the Arab countries. The most popular cereal in many of these countries is wheat which is largely imported and heavily subsidized. Rice follows wheat in order of importance, while sorghum is the basic cereal for a country such as Sudan. Barley is also consumed in North African countries.

For the purpose of this paper a review of the trends of the consumption of major food commodities is presented and discussed briefly using the Food Balance Sheet data.

Cereals availability on per caput basis increased in all the Arab Countries during the period 1961/63 to 1988/90. The lowest cereal consumption was in Somalia at 108.6 kg/head with the highest in Egypt 241.7 kg. (1988/90). Prior to 1961/63 the per caput cereal availability did not exceed 200 kg/head/year in any of the countries. However, in 1988/90 the per capita availability exceeded 200 kg/head/year in Algeria, Egypt, Iraq, Morocco, Syria and Tunisia. Lebanon and Somalia have not shown significant increases in cereal availability during the last 30 years in comparison with the other countries of the Arab Region.

Wheat

The per capita availability of wheat increased in all the Arab countries. Very high increases in the availability of wheat have occurred. These include Yemen (8 fold), Mauritania (6 fold), Somalia and Sudan (3 fold) and an almost doubling in Egypt. The highest per capita availability of wheat was noted in Tunisia (1988/90), followed by Syria, Algeria, Iraq and Egypt. These countries have a very heavy subsidy programmes for wheat. The lowest availabilities for wheat are in Sudan, Somalia and Mauritania. The per capita availability of wheat exceeds the average figure of the Near East (141.9 kg/Year) in Algeria, Egypt, Iraq, Jordan, Libya, Morocco, Syria and Tunisia.

Rice

Rice availability increased in all the countries between 1961/63 and 1988/90 with the exception of Saudi Arabia. Rice availability in Yemen and Mauritania has increased by 5 fold, while it has doubled in Algeria, Somalia and Syria. Rice is an important cereal in Egypt, Iraq, Jordan, Mauritania and Saudi Arabia where the supply is in excess of 20 kg/head/year. These countries exceed the average figures of 16.4 kg./head/year for the Near East Region.

Pulses

There was no significant change in the consumption of pulses during the period from 1961/63 to 1988/90 with the exceptions of Lebanon, Libya, Morocco, Saudi Arabia, Somalia and Tunisia. High consumption of pulses was observed for Lebanon, Mauritania and Morocco where the supply exceeds 10 kg/head/year. Promotion of the consumption of pulses needs to be emphasized for the Arab Countries and especially for a country such as Somalia.

Sugar

The per capita sugar availability increased for all the countries of the Near East Region during the period from 1961/63 to 1988/90. Increases were by 100% for Algeria, Egypt, Libya and Syria. Very high increases (almost 300%) were observed for Saudi Arabia during the same period 1961/63 to 1988/90. With the exception of Somalia, per capita availability of sugar increased by more than 50% in all the Arab countries. Per capita availability exceeded 35 kg./head/year (more than the average figure for the Near East of 28 kg./head/year) in Algeria, Egypt, Jordan, Libya and Morocco.

Vegetable Oils

All the countries of the Arab Region showed a very high increase in per capita oil supply during the period from 1961/63 to 1988/90. The highest increases were seen in Yemen (almost 600%), Mauritania, Libya (more than 350%), Algeria (almost 300%), Tunisia (over 250%), and Morocco (over 200%). In countries such as Algeria, Iraq, Lebanon, Libya, Syria and Tunisia the per capita oil availability exceeded the average figure for the Near East Region. The highest vegetable oil availability was observed for Tunisia and Libya (20 kg/head/year) and the lowest in Yemen (4.7 kg/head/year).

Total Meat

The per caput meat availability increased for all the countries except Sudan, Somalia and Mauritania. A very high increase was noticed in

both Saudi Arabia (7 fold) and Libya (4 fold). Algeria showed the lowest meat supply (10 kg/head/year) while the highest was in Saudi Arabia (43.7 kg/head/year).

Poultry

Comparing 1961-1963 with 1988-1990 values for the Near East Region, per caput poultry supply increased, on average, by over 300% during the last 30 years. The largest changes in per capita availability were noted for Saudi Arabia from, 0.8 kg/head/year to 32 kg/head/year, for Jordan from 0.8 kg/head/year to 20.3 kg/head/year, for Libya from 0.3 to 13.7 kg/head/year, for Iraq from 0.6 kg/head/year to 12.2 kg/head/year and for Yemen from 0.4 kg/head/year to 6.6 kg/head/year. In contrast the per capita availability of poultry in Somalia, Sudan and Mauritania has not changed significantly over the last 30 years. The per capita availability of poultry in such countries as Iraq, Jordan, Lebanon, Libya and Saudi Arabia exceeds, by far, the Near East average. The highest per capita supply of poultry was observed for Saudi Arabia, Jordan and Lebanon, while the lowest supply was seen in Sudan and Somalia.

Milk

The per capita availability of milk at the regional level did not significantly increase during the last 30 years. However, the per capita supply of milk doubled in Algeria, and almost tripled in Libya and Saudi Arabia. In contrast milk supply decreased in both Mauritania and Iraq. The highest per capita milk availability was observed in Somalia, Mauritania and Sudan while the lowest per capita supply was in Egypt and Morocco.

Vegetables

The average per capita availability of vegetables generally increased for the Arab Region over the last 30 years. A very high per capita availability was observed for Algeria (3 fold), Saudi Arabia and Libya (4 fold) with the supply almost doubling in both Tunisia and Lebanon. Vegetable availability decreased however in Jordan, Somalia and Sudan. The lowest availability for vegetables was noted for Somalia and Mauritania, while the highest was seen in Lebanon, Libya, Egypt and Syria.

Fruits

Only a slight increase in the per capita supply of fruits has occurred in the Arab Region during the last 30 years. The highest rate of increase in fruit availability has been in Morocco, Yemen and Saudi

Arabia. There were, however, no significant changes in fruit availability over the same period in either Algeria or Egypt. The highest per capita fruit supply, over 100 kg/head/year, was noted in Lebanon, Saudi Arabia and Syria, while the lowest was seen in Somalia, Sudan and Mauritania.

In summary, therefore, it can be concluded from the food availability data that :

- There has been an increase in the availability of all food groups at the Region level over the last 30 years.
- Cereals (especially wheat and rice), sugar, vegetable oils, meat and poultry showed significant increases in availability, while there were only slight increases in the per capita supply of pulses, milk, fruits and vegetables over the same period.
- There were large variations between countries in the food availability trends. High rates of increase were noted for Libya, Saudi Arabia and Yemen, while very low increases, even sometimes negative, were noted in Sudan, Somalia and Mauritania.
- Changes in per capita GNP have affected changes in food consumption patterns of several countries.
- The prevalence of under-nutrition (particularly micronutrient deficiencies) and of over-nutrition, in the different countries are associated with changes in the per capita average availability of different food groups.

TRENDS IN AVERAGE PER CAPUT/DAY CONSUMPTION OF FOOD ENERGY, PROTEINS AND FATS IN SELECTED COUNTRIES OF THE ARAB REGION

Food Balance Sheet data reflect national per capita food availabilities according to the sources of different food commodities as converted into food energy, proteins and micronutrients. Table 3 shows Food Balance Sheet data for countries in the Arab Region. Food energy, protein and fat availability per caput per day increased at different rates in most countries from 1961, 1971, 1981 and 1989 respectively. For example, the daily per caput food energy availability in Libya doubled from 1,654 Kcal in 1961 to 3,324 Kcal in 1989. For the same country, protein supply ranged from 39.2 g. in 1961 to 80 g. in 1989 which also doubled. In Saudi Arabia, food energy availability increased from 1,772 Kcal in 1961 to 2,874 Kcal in 1989, and protein supply increased from 48 g. in 1961 to 86 g. in 1989. Both the above countries also experienced a very high increase in fat availability. For

Table 3

Average consumption of calories, protein and Fat per Caput/day according to the National Food Balance Sheets

COUNTRY	1961			1971			1981			1989		
	Calories	Protein (g)	Fat (g)	Calories	Protein (g)	Fat (g)	Calories	Protein (g)	Fat (g)	Calories	Protein (g)	Fat (g)
Algeria	1736	47.9	32.1	1834	48.1	35.9	2604	66.9	59.6	2866	76.6	61.2
Egypt	2272	61.3	45.2	2467	64.7	53.3	3206	79.4	73.3	3336	83.5	78.4
Iraq	2066	58.3	41.9	2291	61.3	43.6	2815	73.8	62.1	2887	71.8	75.3
Jordan	2218	56.3	48.1	2497	68.3	62.2	2629	68.9	56.5	2634	71.4	62.0
Kwait	2595	76.8	76.0	2640	74.6	71.3	2961	90.2	93.0	3195	95.3	104.9
Lebanon	2466	65.0	62.2	2474	64.2	61.9	2875	83.0	85.2	3274	86.2	97.1
Libya	1654	39.2	32.2	2506	60.5	73.8	3564	88.0	128.9	3324	80.5	108.3
Morocco	2141	57.3	35.3	2464	65.5	42.1	2697	71.2	49.6	3020	81.3	55.6
Mauritania	1939	77.3	49.0	1874	71.8	50.9	2095	71.8	57.3	2685	79.3	61.0
S. Arabia	1772	48.1	26.5	1886	48.3	33.9	2777	77.7	80.2	2874	86.5	82.5
Somalia	1699	59.0	56.4	1714	58.1	62.8	2075	62.0	78.5	1906	59.1	65.3
Sudan	1832	55.9	53.8	2209	61.6	68.2	2312	68.6	76.8	1974	57.2	63.7
Syria	2362	65.1	59.7	2412	64.2	65.0	3105	84.2	93.7	3003	78.6	82.7
Tunisia	2103	56.4	43.1	2368	63.1	57.6	2779	77.5	65.3	3119	83.3	85.7
U.A.E.	2814	72.5	85.2	3208	78.2	76.1	3199	101.6	110.3	3309	101.6	111.5
Yemen	1908	58.9	36.4	1961	58.8	36.0	2070	61.8	39.1	2142	60.0	33.5
WORLD	2262	61.9	49.9	2455	65.2	56.0	2610	68.5	62.7	2710	71.0	68.5

Source : FAO/Agrostat (1992)

example, in Saudi Arabia, fat availability per caput per day increased from 26.5 g. in 1961 to 82.5 g. in 1989, almost a 3 fold increase. In Libya, fat availability increased from 32.2 g. in 1961 to 108.3 g. in 1989. This represents an increase of more than three times. However, other countries in the Region, such as Egypt, Iraq, Jordan, Lebanon and Tunisia showed steady increases in food energy, protein and fat availability, but were not as high as those for Libya and Saudi Arabia (FAO, 1989).

Other countries in the Region such as Yemen showed a limited increase in food energy supply but still remained below the average daily requirement. For Sudan, Somalia and Mauritania there was no significant change in the availability of food energy, protein and fat during the same period.

It should be pointed out that while Food Balance Sheet data indicate the trend of availability for different food commodities in different years, they do not reflect the distribution of these foods among different socio-economic groups or illustrate intra-family distribution. Therefore, the Food Balance Sheet data should be supplemented with household food consumption survey data and household budget expenditure survey data of different socio-economic groups and at family level. Food Balance Sheets, by themselves, do not demonstrate differences that may exist in the diets consumed by different population groups or by different socio-economic groups, ecological zones and geographical areas within a country; neither do they provide information on seasonal variations in the available total food. Nevertheless, Food Balance Sheets constitute the main source of data used for the assessment and appraisal of the global food situation. High food energy intakes per caput per day coupled with large increases in fat consumption are known to be associated with the prevalence of non-communicable diseases of affluent societies such as cardiovascular diseases, hypertension, diabetes and cancer and hence, such data may be used to alert the countries involved to take the necessary action. On the other hand, low average per caput daily food energy availability reflects the prevalence of under-nutrition among large numbers of the population and is especially significant for the vulnerable groups.

CONCLUSIONS AND RECOMMENDATIONS

- The Arab Region has witnessed an enormous changes in its food consumption patterns during the last 30 years. Such changes for different food groups have not occurred previously throughout the long history of the Region. These changes were not only in the oil rich countries, but were also in the poor countries of the

Region such as Sudan and Mauritania in which wheat and rice are replacing the traditional cereal sorghum.

- The greatest changes were seen in the consumption of cereals, sugar, vegetable oils and meat which are mostly imported. Changes for pulses, milk, fruits and vegetables were less significant than for the other food groups.
- The absence of a clear and well defined Food and Nutrition Policy, as well as the lack of nutritional awareness are both contributing to widening the production-import gap for food in the Arab Region which is increasing at an alarming rate. Food production is failing to meet the increasing demand for certain food commodities.
- In some countries present policies, especially regarding subsidies for wheat, rice, sugar and vegetable oils, are encouraging over consumption and in consequence increasing food waste.
- This is an urgent need to raise the level of awareness regarding food and nutrition issues to policy makers, planners, communities and even individuals. Food and nutrition awareness must be also expanded to cover all segments of the population including rich and poor, as well as those from urban and rural areas.

In view of the major health problems associated with diet in the Arab countries increased nutrition awareness will play a critical role in the future. This should include :

- Promotion of the concept of a balanced diet through use of the mass media.
- Emphasizing the need for energy dense foods such as cereals and pulses as well as increasing the use of vegetables and fruits among poor communities.
- Partial replacement of energy-rich foods such as cereals, sugar, fats and meat with foods such as low-fat milk, fruits and vegetables among the high income groups of population.
- Development of nutrition awareness messages formulated according to the socio-economic conditions and geographical location of the target groups.
- Consumer education on the quality and safety aspects of food. Special emphasis should be given to the promotion of hygienic

practices in the handling of foods at household level and in food establishments.

- Nutrition surveillance and food information systems should be established particularly, in drought-prone areas of the Region. Such surveillance activities should be linked to the decision-making process such that information is provided to the specialists who need it in a timely manner, so that food shortages and potential of famine may be averted.

To achieve the above food and nutrition goals, countries of the Arab Region are urged to formulate National Plans of Action for Nutrition, which should be guided by the International Conference on Nutrition (ICN) World Declaration and Plan of Action for Nutrition, which were adopted unanimously by all countries of the Arab Region in December 1992.

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