

**Market and Trade Policies for Mediterranean Agriculture:
The case of fruit/vegetable and olive oil
MEDFROL PROJECT**



Agricultural Situation Report – LIBYA

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1. INTRODUCTION

With the Mediterranean Sea on its north and the vast Sahara desert in its south and making about 95% of its territory, Libya is for the most part a dry and an arid country. Compared to its North African neighbors, the agriculture sector contribution to the country's Gross Domestic Product (GDP) in Libya is a lot lower and has been declining ever since oil discovery in 1958. Before that time and shortly after, the agriculture sector was the main source of revenue for the Libyans making about 30% of the GDP. After the 1960s, with increasing oil production, exports, and favorable world market prices, the agriculture sector share has rapidly fallen to less than 5% in 2003 according to the International Monetary Fund (IMF) country report of 2005 (table 1). Inversely, the share of the oil sector increased to more than 55 % of the GDP. Gradually, the country became wealthy but with an economy that is less diversified, heavily based on oil exportation, and totally State controlled. With increasing oil revenues, the share of non oil related industries remained small.

Table 1. Libya's sectoral distribution of GDP in 1999 – 2003, at Current Prices and % of GDP at factor cost

Sector	1999	2000	2001	2002	2003
Agriculture, fishing*, and forestry	10.3	8.1	7.5	5.3	4.3
Oil production	28.4	39.8	39.2	52.8	61.2
Public education, health, and other services	19.8	17.2	17.8	13.0	11.4
Other sectors**	41.4	34.9	35.3	28.8	23.0

International Monetary Fund (IMF), 2005; * Fisheries sub-sector contribution in the agricultural GDP is estimated at around 9%; ** The sum of mining, manufacturing, electricity, gas, water, construction, trade, hotels, restaurants, transportation, communication, storage, financing, insurance, business services, and housing.

The retreating agriculture share in Libya's GDP has also been accompanied by diminishing employment in the sector. From the 1960's up until 2000, the aggregate sector (agriculture, fishing, and forestry) was the leading employer among all the other sectors; it employed about 239 000 individuals making about 17% of Libya's total labor force. In subsequent years, however, the sector employment has dramatically declined to reach about 101 000 individuals by 2002, thus decreasing to about 5% of total employment. Recent data of the Food and Agriculture Organization of the United Nations (FAO) indicate that population economically active in agriculture has declined further down to about 94 000 in 2004, of which a large percentage, 67%, is females (table 2). Inversely, employment by the other sectors, especially those of manufacturing, trade, hotel and restaurants, and public administration and services has increased noticeably.

Table 2. Libya's total economically active population and population economically active in agriculture in 2004

All economically active population	2 020 000 inhabitants
- as % of total population	36 %
- female	25 %
- male	75 %
Population economically active in agriculture	94 000 inhabitants
- % of all economically active population	5 %
- female	67 %
- male	33 %

FAOSTAT database, 2005

As for the food processing industry, when one examines Libya's agricultural productions, its yearly large imports and small exports matrices of food products, one can safely say that the importance of the food processing sub-sector in the macroeconomic indicators of agriculture sector could be also low, a reflection of that of the agricultural sector as a whole. The State has built and ran several conservation and transformation food processing units since the early 1960s (RMBEE, 1998). To date, however, the capacity of the existing units still does not satisfy the domestic needs; nearly all of them mostly process the imported products.

In general, agriculture in Libya is highly constrained by very scarce fresh water resources, limited arable land, and low soil fertility. Subsequently, it is characterized by an extensive production system with low productivity and predominantly pastoral livestock oriented. The exception is in the narrow belt of about 25 Km wide along the coast that is relatively of mild Mediterranean climate with more or less adequate rainfall.

Grown in this strip is most of the agricultural produce. In 2002, fruits (442 000 Ha, 650 000 Mt) and vegetables (36 300 ha, 699 000 Mt), both made the largest cultivated area and the largest tonnage production in the country (table 11). Cereals came in second with 381 300 ha and about 253 050 Mt of production. Olives, covering about 100 000 ha with 150 000 Mt production, were third in importance. The levels of agricultural production do not meet local demands as evidenced by the large specter and quantities of agricultural produce that are imported every year.

2. NATURAL CONDITIONS AND LAND USE

Ninety five percent of the 1.75 Million km² making the Libyan territory is desert or semi desert. In the northern narrow Mediterranean strip reside about 75 % of the 5.7 Million of total population at a density of about 150 inhabitants per square kilometers. The density per km² of arable land is estimated to be around 300 inhabitants. As it is shown in table 3, the average population density in the country as whole is about 3 %; in some areas it drops to less than 1 percent. Of the total population, only 13 % is rural. The coastal strip also harbors most of the 2.15 Million hectares of Libya's total estimated arable and permanent pasture land (FAO, 2005), and the cities of Tripoli, the capital, and Benghazi, the second largest city.

Generally, the country's terrain is constituted of mostly desolate areas, and flat to rolling plains, plateaus, and depressions. According to FAO, Libya can be divided into four sets of terrains: 1) the Coastal Plains, that run along the Mediterranean sea with varying width, 2) the Northern Mountains, that run close to the coastal plains and include the areas called Jabal Nafusah (the Mountains of Nafusah) in the west and the Jabal al Akhdar (the Green Mountains) in the east, 3) the Internal depressions that cover the centre of the country and include several oases, and 4) the Southern and Western Mountains. The Sahara desert extends from the southern foothills of the Mediterranean belt to the borders of the country of Chad.

2.1 Land and water resource potential and constraints

2.1.1 LAND RESOURCES AND USE

The 2 150 000 ha total arable land and permanent pasture make approximately 1.2% of Libya's total land area. A yearly average of about 1.82 Million ha is cultivated for annual crops; only about 0.34 Million ha is for permanent crops. Permanent pasture area accounts for about 13.3 Million hectares (table 3).

Confined between the Mediterranean Sea and the Sahara desert, the climate in Libya along the coast is of Mediterranean type, in the interior of the country, it is of dry and extreme desert type. The major climatic regions as reported by FAO (2005) include:

- The Mediterranean coastal strip with dry summers and relatively wet winters;
- The Jabal Natusah and Jabal Akhdar highlands that experience a plateau type climate with higher rainfall and humidity and lower winter temperatures, including occasional snow on the hills; and
- The southern and the interior zones where pre-desert and desert climatic conditions prevail with scorching temperatures, large daily temperature extremes, and practically zero rainfall.

Table 3. Libya's population, agricultural labor force, and land use in

INDICATORS	1979-81	1989-91	1999	2000	2001	2002
Population & Agricultural Labor Force						
Population, 1000 person	3 047	4 305	5 136	5 237	5 340	5 445
Population annual growth, %	4.6	2.1	2.0	1.9	1.9	1.9
Rural / Total Population, %	31	18	13	12	12	12
Density Inhabitant/km ²	2	2	3	3	3	3
Agricultural Labor Force, 1000 person	234	143	110	108	104	101
Agricultural Labor /Total Labor Force, %	25	11	6	6	6	5
Land Use						
Total Land, 1000 HA	175 954	175 954	175 954	175 954	175 954	175 954
Arable Land + Permanents Crops, 1000 HA	2 080	2 153	2 150	2 150	2 150	2 150
Arable Land, 1000 HA	1 754	1 807	1 815	1 815	1 815	1 815
Irrigated Land, 1000 HA	223	435	470	470	470	470

FAOSTAT database of 2005 as summarized by EU-MED AGPOL, 2005

2.1.2 WATER RESOURCES AND USE

Two characteristics distinguish Libya's water resources: 1) the generally very low and erratic rainfall over the country, and, 2) the significantly large quantities of non renewable fossil water that are available in its south and southeast Sahara desert aquifers.

As for rainfall, it usually takes place during the winter months, but with great disparity in time and space. The average annual rainfall for the country as a whole is about 56 mm per year (table 4). Ninety three (93%) percent of the country receives less than 100 mm per year. The highest rainfall takes place over the northern Tripoli and Benghazi regions; both are the only areas that receive an average annual rainfall of more than 250-300 mm, a level considered necessary to sustain rainfed agriculture (FAO, 2005).

According to FAO's country profile (2005), the total volume of fresh water that can likely be available for use in Libya is estimated to be around 3 820 Million m³ per year (table 4). Of this amount, 170 Million m³ comes from surface water, and 650 Million m³ comes from the annual recharge to groundwater aquifers. Depletion rate of the nonrenewable aquifers is estimated at about 3 000 Million m³ per year. Because of the predominantly dry conditions, most of the estimated 200 Million m³/year of annual runoff in Libya evaporates. Little of it recharges the underlying aquifers, thus limiting the regular renewable surface water resources to about 100 Million m³ per year. The aquifers that are recharged are the ones that are in the northwestern and the northeastern zones of the coastal plain.

The 16 dams in operation in Libya have a total storage capacity of about 385 Million m³ with an average annual storage capacity of about 61 Million m³ (table 21 in appendix). However, because of the damage incurred by some of these dams, the reported estimated real average of water quantities that can be retained by these dams does not exceed 30 to 40 Million m³/year. Total renewable groundwater resources are estimated at 500 Million m³ per year.

Table 4. Water sources in Libya

Source	m ³ per year
Renewable water resources:	
Average precipitation	98.53 x 10 ⁹ 56 mm/y
Total actual renewable water resources in 2004	0.6 x 10 ⁹
Total actual renewable water resources/inhabitant in 2004	106
Total dam capacity in 2000	385 x 10 ⁶
Non-conventional sources of water:	
Produced wastewater in 1999	546 x 10 ⁶
Treated wastewater in 1999	40 x 10 ⁶
Desalinated water produced in 1999	18 x 10 ⁶

FAO AQUASTAT database, 2005

As for non renewable water, in the early 1950s during the oil explorations, significantly large amounts of fossil fresh water resources were discovered trapped in the aquifers underlying the Libyan southern desert. These constitute four major underground basins.

1. The Western aquifer system which includes three interconnected sub-systems:
 - a. The Murzuq basin
 - b. Jabal Hasawnah system
 - c. Al Hamadah al Hamra system which includes the Jabal Nafusah - Suf-Ajjin-Tawurgha sub-basin, Ghadamis sub-basin and Al Hamadah al Hamr system
2. The Jifarah Plain system;
3. The As Sarir Al Kufrah basin system; and
4. The Al Jabal al Akhdar system.

Other sources of water, but of minor importance, in Libya are: the desalination plants which have an estimated capacity of 18 Million m³, most of which are in inadequate operating situation, and about 40 Million m³/year of waste water that are treated and used for agriculture.

FAO estimates the water demands in Libya to be around 4.3 km³ per year. As mentioned earlier, most of Libya's population lives in the northern plains in the band coasting the Mediterranean Sea. Also, most of Libya's arable land exists over this coastal area that is underlined by the only known rechargeable aquifers in the country. Because of the increasing and large water demand and the uncontrolled water over usage throughout the years, the water level has declined very drastically in these aquifers. In addition, the pollution of the shallow aquifers around the cities and the high salinity caused by

seawater intrusion into most of the coastal aquifers, both, have made these diminishing water resources almost unusable. Consequently, a far-reaching water mobilization project, "The Great Manmade River Project" (GMMRP), was designed by the State in the 1970's and started in the 1980's to transport about 2 300 Million m³ per day of water off the four fossil water aquifers in the desert. The aim is to alleviate the severe water shortage in the northern region, to satisfy the increasing water needs for domestic and industrial purposes, and to irrigate about 750 000 Ha.

Table 5. Libya's water withdrawal and use

Withdrawal and use	m ³ /yr
Re-used treated wastewater in 1999	40 x 10 ⁶
Depletion of renewable groundwater resources in 1998	600 x 10 ⁶
Use of non renewable fossil groundwater in 1998	3 708 x 10 ⁶
Total water withdrawal in 2000	4 268 x 10 ⁶
- irrigation + livestock use in 2000	3 544 x 10 ⁶
- domestic use in 2000	600 x 10 ⁶
- industry use 2000	124 x 10 ⁶
- per inhabitant use in 2000	815
- Use as % of total actual renewable water resources in 2000	711 %

FAO AQUASTAT Country data, 2005

Currently, most of Libya's water usage comes from these non renewable water reserves through the GMMRP. In 1998, about 3 708 Million m³ of fossil ground water was transported from the wells of the As-Sarir – Al Kufrah basin, and from those near the village of Tazirbu, about 200 Km further south, through an elaborate large pipeline transport system. According to FAO (2005), of the 4 268 Million m³ total water withdrawal in 2000, about 3 544 Million m³, i.e. 83%, was used for irrigation and livestock, 600 Million m³, 14%, for domestic use, and 124 Million m³, representing only about 3%, for industrial use (table 5).

The total water withdrawal is estimated around 711 % of the actual total renewable water resources in the country, indicating that one day in the future water would be even more of a critical resource than what it represents for now, especially with the increasing population in the country. More than 30% of the present domestic water demand is supplied by the GMMRP.

2.1.3 IRRIGATION AND DRAINAGE

Because of the arid nature of most of Libya's territory, irrigation has long constituted a common and important practice. According to FAO (2005), the total area which is prepared for irrigation in Libya is estimated at about 470 000 hectares, all of which is equipped for full or partial control irrigation, but only about 2% of it is equipped with some form of drainage. Sixty seven of it, 316 000 Ha, was actually irrigated in 2000 and represented about 22% of cultivated area (table 6).

Throughout this area there exist several large projects, settlements, and smallholder farms with three main modes of irrigation: 1) private irrigation, concentrated in the Jifarah Plain, the Jabal al Akhdar, and the Murzuq Basin, is practiced on 1 to 5 ha plots for the most part, and represented about 80% of total irrigated area in 2000 (table 7), 2) irrigation by small-scale farmers of small plots cultivated within the State established large-scale irrigation schemes which are supplied by water from the southern fossil aquifers, and, 3) irrigation in pivot circles operated by State technicians and workers in large-scale State run farming setups. The last two represented less than 20% of all irrigated area in 2000 (table 7).

Table 6. Libya's areas and crops under irrigation and with drainage in 2000

Item	Quantity or %
Full or partial control irrigation equipped area:	470 000 ha
• area irrigated from groundwater	98.7 %
• area irrigated from surface water	0.65 %
• area irrigated from wastewater	0.65 %
• irrigated cultivated area % of arable land	22 %
• area equipped actually irrigated	67 %
Irrigated crops in full or partial control irrigation schemes:	
• Total irrigated grain production	135 500 Metric tons
• of total grain production	62 %
Harvested crops:	
Total harvested irrigated cropped area	441 000 ha
- Annual crops: total	210 000 ha
• wheat	70 000 ha
• vegetables	60 000 ha
• barley	50 000 ha
• potatoes	10 000 ha
• pulses	10 000 ha
• groundnut	10 000 ha
• tobacco	1 000 ha
• Permanent crops: total	230 000 ha
• olives	110 000 ha
• fodder	70 000 ha
• fruit trees	40 000 ha
• citrus	10 000 ha
	140 %
Irrigated cropping intensity	
Drainage - Environment:	
Total drained area	9 000 ha
• area equipped for irrigation and drained	• 9 000 ha
• other drained area (non-irrigated)	• 0 ha
• drained area as % of cultivated area	• 0.4 %
Area salinized by irrigation	190 000 ha

FAO AQUASTAT Country data, 2005

Table 7. State and private actually irrigated areas in Libya around 2000

Area	Irrigated area, ha			Private irrigation,
	State *	Private	Total	% of Total
Al Jabal al Akhdar	0	24 000	24 000	100.0
Al Kufrah - As Sarir	18 500	8 500	27 000	31.5
Jifarah	0	142 000	142 000	100.0
Hamada el Hamra	22 000	15 000	37 000	40.5
Murzuq	18 500	67 500	86 000	78.5
Total	59 000	257 000	316 000	81.3

FAO AQUASTAT Country data, 2005; * State constructed irrigation perimeters

About 90% of the fruits and vegetables, and more than 60% of grain productions are obtained under a variety of irrigation and farming schemes. Because of the prevailing sandy soils in most of the arable land, sprinkler irrigation is practiced on nearly all the irrigated plots in Libya. About 99% of irrigation uses groundwater, while the remaining 1% is irrigated by surface water and treated wastewater.

2.1.4 SOIL CONSTRAINTS

As mentioned above, the scarcity of suitable arable land is one of the two major constraints to agricultural production in Libya. In addition, the mostly sandy soils prevailing in the country are shallow and coarse with limited natural fertility. Under the common dry climatic conditions, with hardly any vegetative cover, sandy soils in the country are severely exposed to wind erosion. Salinity and sodosity constitute important problems in the north mainly due to irrigation for a long time by water contaminated by the sea and poor drainage. As result, substantial soil degradation is taking place in the country. In 1998, FAO reports that about 190 000 hectares are with salinity problems in varying degrees due to improper irrigation and drainage practices.

3. PERFORMANCE OF THE AGRICULTURAL SECTOR

3.1 Introduction

The agricultural sector in Libya has been developing, but the prevailing climatic conditions, the low fertility of most of its soils, and irrigation problems limit the output. The Sahara desert covers about 95 percent of Libya's land, and much of the remainder is used for grazing. Most of the arable land and pastureland of Libya is in the western parts of the coastal belt. Grains are grown and some livestock is grazed to a lesser extent in the southeast area. Cultivation is sporadic and dependent on rainfall. Although total agricultural production has increased as a result of irrigation projects and the use of fertilizer, Libya still must import large amounts to satisfy its food needs. Principal crops produced include watermelons, tomatoes, wheat, potatoes, citrus fruits, dates, and olives; principal livestock include sheep, goats, followed by cattle, camels, and poultry.

Crop yields, rainfed or under irrigation, are generally low in Libya (table 8). For example, the average yields of rainfed and irrigated wheat, 650 Kg/ha and 1400 kg/ha,

respectively, and barley, 450 Kg/ha; 750 Kg/ha, respectively, are much lower than those realized in other neighboring North African countries and are a lot lower than the average yields obtained in the European Mediterranean countries. The average irrigated and rainfed yields for fruits, vegetables and oil crops, as well as animal performance, are also generally low (table 23 in appendix).

Table 8. Estimated rainfed and irrigated crop yields in Libya in 2000

Crop	Yield in kg/ha	
	rainfed	Under irrigation
Wheat	650	1 400
Barley	450	750
Dates	2 800	8 600
Potatoes	-	7 300
Pulses	600	1 500
Citrus	-	10 500
Apples	8 300	20 000
Grapes	2 300	10 400
Vegetables	6 700	13 000
Olives	700	2 200
Groundnuts	-	1 800

FAO AQUASTAT Country data, 2005

The number of agricultural land holdings and cooperatives, 163 714, in Libya is quite small (table 9) and is indicative of the scarcity of arable land. Furthermore, small sized farms dominate the structure of land holdings. Farmsteads less than 5 ha make the bulk, 48%, of total land holdings, farms of more than 5 but less than 10 ha account for about 25%, those of more than 10 but less than 15 Ha, about 12.30%, farms more than 15 but less than 100 ha make 16.74%, and those of more than 100 ha hardly make 0.5% of total land holdings in the country. The latter large size farms are mostly owned by the State and run by its technicians and employees.

Table 9. Land holding and cooperatives in Libya in 1987

Land holding class, Ha	No	%
LESS THAN 0.5 Ha	5887	3.60
-1	7615	4.65
-2	17654	10.78
- 3	16495	10.08
- 4	14909	9.11
- 5	12500	7.64
- 10	40406	24.68
- 15	20143	12.30
- 20	8039	4.91
- 30	9454	5.77
- 40	4101	2.50
- 50	2432	1.49
- 75	2489	1.52
-100	904	0.55
100 ha AND MORE	686	0.42
TOTAL	163714	100.00

AOAD database, 2005

3.2. Products

Like the case and the tradition for most of the countries of North Africa and the Middle East, the arid climate, the scarcity of suitable arable land, and the existence of vast areas of arid steppe and pasture had oriented agricultural activities in Libya mainly towards pastoral livestock production.

Shown in table 10 are livestock and animal products in Libya during 1992 – 2002. Total live ruminants, including camels, cattle, sheep and goats, added up to about 6 522 000 heads in 2002 with sheep and goats dominating the national herd. During the period of 1992 to 2002, live sheep numbers have declined from 5.6 to 4.5 Million, while those of goats increased from 1.25 to 1.72 Million. Red meat production has followed similar trends and declined from 101.5 to 84.1 Mt tons in the same period. Poultry meat and egg productions, on the other hand, have increased from 74 to 105 and from 35.75 to 55 Mt tons, respectively. National milk production peaked in 1997 to 286 000 and declined to 230 000 Mt in 2002.

Table 10. Livestock numbers and animal products in Libya during 1992 - 2002

Item/year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Live, 1000 head											
Camels	155	160	100	101	100	105	130	130	163.26	162	162
Cattle	135	128	140	145	145	160	153	153	142.21	140	140
Sheep	5600	5650	6000	5100	5500	5000	6000	5150	4124	4500	4500
Goats	1250	1260	1260	1100	1200	1250	1250	1250	1720	1720	1720
Production, Metric tons											
Camels	6.5	6.58	6.68	7	3	4	3.1	3.48	8.61	6	6
Red Meat	101.5	61.58	61.98	74	78	92.8	100.3	82.01	86.74	84.13	84.13
Poultry meat	74	72	83.80	102.8	100	97	101.65	91.40	104	107	105
Milk	222	201.81	235	250	265	286	224	270	270	270	230
Eggs	35.75	36.83	38	44	45	31.5	25.63	48.84	60	60	55

FAOSTAT data base, 2005

The relatively “intensive” farming in Libya has traditionally been in or around the northern Mediterranean coastal belt where most of the fruit, vegetable, olive, and cereal productions take place.

Shown in table 11 are total cultivated areas and productions for the major lines of agricultural plant products in Libya during 1992 -2000. In table 12, more detailed data is shown for the most important products.

Fruits, and vegetables to some extent, have been taking more of the available arable land areas since 1992, probably because of more irrigation water arriving through the GMMRP. The data (FAO, 2005; AOAD, 2004) indicate that, in 2002, fruit horticulture was the most important plant production activity in Libya using about 442 000 H and producing 650 000 metric tons. In 1994 and 1995, fruit planted area was about 388 430 hectares. It declined to 343 000 ha in 1997, but pick up again in 2002 to reach 441 830 Ha, making about 20% of total arable land. In that year, watermelons and melons, followed by dates and citrus were the major fruit productions in Libya.

In terms of output, vegetable production was the highest plant production in the country with about 700 000 metric tons in 2002. Vegetables largest reported cultivated area, 45 440 ha in 1997, declined to 36 300 ha in 2002 making about 2 % of total arable land. Tomatoes and onions were the major vegetable productions in that same year.

Meanwhile, the cereal crops, which have long dominated the scene of Libya’s cultivated land areas, have been ceding ground. With irrigation water arriving to the North through the GMMRP, cereal cultivated area dramatically dropped from about 450 000 ha in 1993 to about 204 000 ha in the following year; the lowest acreage was about 145 000 ha in 1997. Thereafter, cereals gradually and variably regained cultivated land areas to reach about 381 300 Ha, about 70 000 ha short of that of 1993, thus occupying the second largest cultivated area in 2002 and representing about 18 % of total arable land.

In the third place, olive trees that produced about 150 000 Mt tons were scattered on about 100 000 ha in 2002 or about 5% of total arable land. FAO reported food balance sheet data show that in the 1995 – 2002 period, annual average olive production was about 187 000 Mt; average annual olive oil production was about 7 000 Mt (table 24 in appendix).

Potato production is also an important activity in Libya. Annual production increased from 14 000 Mt to over 100 000 Mt between 1961 and 1985. Over the same period the area planted in potatoes increased from 3,000 ha to 16,000 ha. In 1996 and in 1997, total production was 205 000 Mt. In 2002, production was 195 000 Mt using about 10 000 ha of total cultivated area (table 12).

As for fodder area, data indicate that it also has gone through important fluctuations during 1992 – 2002. In 1992, the 92 000 ha occupied by fodder drastically dropped to 37 500 ha in 1994, increased to about 70 000 ha in 1995 and 1996, declined back to the level of 1992, gradually increased to the highest reported area, 115 000 H, in 2000, and thereafter stabilized at 86 000 ha in 2001 and 2002 making about 4% of total arable land (table 11).

3.3. Intermediate inputs

Availability of data concerning values of Libya's agriculture actual intermediate input and cost of agricultural productions is limited, neither in FAO nor in AOAD on line statistical databases. It is worth noting here, however, that with the exception of urea, Libya imports nearly all of its agricultural intermediate input needs in fertilizers, pesticides, and agricultural machinery and tractors. One can only stipulate that, like its North African Mediterranean countries, intermediate input usage in agriculture production is a lot less intensive compared to the European countries.

3.3.1 Fertilizer and plant protection products

FAO statistical data in table 13 show that in the 8 year period of 1995 – 2002, average total fertilizer consumption was 67 500 tons per year, with an average of 32 Kg/ha of arable land. Total consumption did very steadily decrease from 89 000 Mt in 1995 to its lowest point of 50 500 Mt in 1998. In 1999, it sharply bounced back to 86 500 Mt to near the level of 1995. In 2000, it again fell drastically, but picked up in 2001. In 2002, total consumption, which was 61 900 Mt, remained much less than that registered in 1995. These observed yearly fluctuations in total fertilizer consumption could probably be the result of climatic conditions effects, quantities of fallow land, and the countries reactions to UN sanctions.

Except for 1999 and 2000, by far, phosphate fertilizer has constituted the main fertilizer used with an average of more than 55% of total fertilizer consumption during 1995 – 2002. Quantities of nitrogenous fertilizer utilized, of which significant amounts of domestically produced urea, are second in use, and followed by those of potash fertilizer.

Libya produced about 400 000 tons of urea per year from 1995 to 20002, the nitrogenous substance that is used as fertilizer or as ruminant feed.

Values of Libya's imported fertilizer and plant protection products shown in table 14 indicate that in 1995 – 1997, annual average value of total fertilizer imports was about 17 000 000 USD (8 USD/ha arable land), about 30% of total imported agricultural requisites. From 1998 to 2003, it had more than doubled to reach an average of about 75% per year (46.5 USD/Ha) of total imported agricultural requisites. On the other hand, the annual average value of imported disinfectants, fungicides, and insecticides, which was about 9 300 000 USD at about 17% (4.3 USD/Ha) in 1995 - 1997, has declined to represent only a bit more than 6% of total imported requisites from 1998 to 2003.

Table 11. Libya's total cultivated areas, 1000 ha, and productions, 1000 MT, of major agricultural plant products during 1992 – 2002

Total Item/year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Fruits Area	NA*	NA	382.43	382.43	338.26	343.25	347.72	NA	368.52	441.83	441.83
Production	485.2	597.69	599.53	599.53	494.71	543.02	623.65	531	538.50	405	650
Vegetables Area	36.7	45.3	37.29	37.95	29.26	54.44	29.74	31.55	51.63	31.55	36.3
Production	644.1	681.3	588.52	600.11	599.46	679.71	665.99	691.39	707.69	651	699
Olives Area,	NA	NA	NA	NA	NA	NA	NA	NA	130	100	100
Production	168.8	186.6	168.8	168.8	185.68	194.96	185.88	275	165	150	150
Cereals Area,	454	451.83	204.95	269.85	197.68	146.19	180.36	349.82	279.30	238.35	381.30
Production	298	300.67	130.90	145.75	161.8	181.1	256.79	377.82	340.33	285.95	253.05
Oil Seeds Area,	8	7.76	7.81	16	11.02	12.09	NA	0.2	0.2	0.25	0.25
Production	15	14.73	14.89	30.12	20.67	22.65	NA	0.3	0.4	0.50	0.50
Pulses Area,	12	12.04	6.05	5.39	NA	3.41	1.30	3.10	3.070	2.55	1.32
Production	13	13.28	27.27	27.05	NA	30.02	2.17	11.86	4.49	3.40	1.90
Fodder, Area	92	37.5	47.75	70	69.86	38.17	61.2	75.84	115	86	86

Data compiled from FAO, 2005 and AOAD, 2004; Where zero number was reported in the original data, it was presumed as not available and was replaced by NA = Not Available.

Table 12. Cultivated areas, 1000 ha, and productions, 1000 Mt, of Libya's main fruits, vegetables, cereals, pulses, and oil seeds in 1992 – 2002

Item		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Fruits												
Apples	Area	NA	NA	NA	NA	NA	NA	NA	NA	4	4	4
	Production	49.2	40	40	40	41.92	39.89	41.92	31.91	4.5	5	20
Figs	Area	NA	NA	NA	NA	NA	NA	NA	NA	3	3	3
	Production	27	20	20	26.92	28.27	26.85	28.34	17.35	10	4	10
Pomegranates	Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Production	25	15	15	15	14.25	13.54	14.31	4.06	4.06	2	15
Grapes	Area	NA	NA	NA	NA	NA	NA	NA	NA	7.23	8	8
	Production	28.2	30	30	30	36	37.8	36.15	38.56	50	40	30
Citrus	Area	NA	NA	NA	NA	NA	NA	NA	NA	10	6.51	6.51
	Production	68	50	50	60	63	101.87	62.96	49.98	176	50	84
Dates	Area	NA	NA	62.5	62.5	62.8	64.06	6.3	0	50	NA	NA
	Production	119	125	125	125	125.6	128.11	126	114.15	120	140	200
All melons	Area	14.59	14.8	14.51	14.57	14.9	10.2	10.52	10.65	18.5	11	15
	Production	244.6	250	236.68	237.39	252.9	235	242.08	244.4	255	275	300
Vegetables												
Cauliflower , Cabbage:	Area	1	0.86	0.64	0.67	0.42	0.63	0.64	0.31	0.25	0.5	0.5
	Production	9	8.12	6.05	6.29	7.56	7.5	7.73	5.51	6.5	10	10
Eggplant	Area	0.35	7.6	0.3	0.3	0.2	0.2	0.36	0.44	0.35	0.25	0.2
	Production	7.5	9.3	3.85	3.85	3	3	15.45	14.04	9.52	5	4
Cucumbers , Gherkins	Area	0.75	0.8	0.45	0.45	0.5	0.5	0.88	0.9	0.7	0.7	0.6
	Production	28.2	29	4.42	4.72	6	6	30.91	28.08	22	10.5	10
Green peas	Area	4.2	4.2	4.17	4.17	2	2	2.06	1.46	2.33	2.1	1
	Production	20.9	21	20.85	20.85	10	10	10.3	7.28	11.67	10.5	5
Dry Onions	Area	9	9.3	9.31	9.67	8.5	8.5	6.13	8.84	13	9	9
	Production	152.3	158	158.29	164.46	170	170	122.58	176.8	178	180	180
Tomatoes	Area	7.9	8.6	7.92	8.13	7.5	7.5	9.15	8.96	16.5	8	10

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Production	190.1	214	158.38	162.56	150	150	236.94	215.28	225	160	190
Cereals											
Sorghum + Millet Area	3	2.97	8	5	6.3	8	6.5	4.1	2	1.5	1.5
Production	2	2.01	6	5.5	7.2	12	7	7.1	4	3.6	3.6
Maize Area	1	0.57	0.3	0.25	0.38	0.5	0.8	0.2	2	1	1
Production	1	0.59	0.24	0.25	0.4	0.8	2	1.2	5.78	2	1.5
Wheat Area	114	82	17.78	11.6	19	48.7	38.33	60.52	50.4	34.5	29
Production	90	60	44.36	23	28.2	32.9	55.07	68.9	64	48.5	40
Barley Area	253	225.02	178.88	253	170	88.99	134.72	288.24	223.1	200	350
Production	198	156	80.3	117	124	135.4	192.72	305.51	264.05	230	250
Other											
Potatoes Area	19	20.98	9.54	9.92	8.2	8.2	8.45	5.53	9.5	10	10
Production	150	154.48	190.88	198.32	205	205	211.18	138.2	190	195	195

FAOSTAT database compiled by EU-MED AGPOL, 2005; where zero number was reported in the original data, it was presumed as not available and was replaced by NA = Not Available.

Table 13. Libya's fertilizer consumption in 1995 – 2002, Metric ton

Fertilizer/year	1995	1996	1997	1998	1999	2000	2001	2002
Consumption								
Nitrogenous Fertilizers	30 000	16 600	17 500	20 000	43 600	31 700	20 700	17 700
of which, Urea	1 600	NA	NA	8 000	27 500	23 000	NA	NA
Phosphate Fertilizers	55 000	40 400	40 900	27 000	34 700	18 000	47 000	39 200
Potash Fertilizers	4 000	5 400	3 300	3 500	8 200	5 300	5 500	5 000
Total Fertilizers	89 000	62 400	61 700	50 500	86 500	55 000	73 200	61 900
Use, Kg/ha Arable land: 1979-81= 36; 1989-91= 45				28	48	31		
Urea Production	409 500	398 800	383 400	408 200	386 860	407 100	365 200	389 600

FAOSTAT data base, 2005; where zero number was reported in the original data, it was presumed as not available and was replaced by NA = Not Available.

Table 14. Value of Libya's imports of fertilizer and plant protection products, 1000 USD

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Fertilizer									
Nitrogenous Fertilizers	7 000	5 000	2 000	203	350	500	634	600	600
Phosphate Fertilizers	11 600	11 000	10 000	8 113	6 000	4 000	2 303	2 300	2 300
Potash Fertilizers	0	0	0	0	0	0	768	770	770
Fertilizers Manufacture, nes	1 000	1 500	1 500	1 627	3 000	4 500	5 625	5 600	5 600
Natural Sodium Nitrate	0	13	0	0	0	0	0	0	0
Natural Phosphates	0	22	0	97 991	90 000	90 000	90 000	90 000	90 000
Total	19 600	17535	13 500	107934	99 350	99 000	99 330	99 270	99 270
% of total requisites	30.8	31.4	28.3	78.3	78.0	74.1	71.7	74.6	74.1
Plant protection products									
Disinfectants	0	0	0	1 330	0	0	2 826	0	0
Fungicides	0	0	0	5 776	0	0	4 182	0	0
Insecticides	0	0	0	981	0	0	1 515	0	0
Total	10 000	9 000	9 000	8 086	8 100	8 300	8 524	8 253	8 295
% of total imported agricultural requisites	15.7	16.1	18.9	5.8	6.2	6.2	6.1	6.2	6.2

FAOSTAT data base, 2005

Table 15. Number of tractors and harvester-threshers in Libya in 1995 - 2002

Total machinery	1995	1996	1997	1998	1999	2000	2001	2002
Tractors	36 297	36 902	37 507	38 112	39 450	39 733	39 750	39 750
Tractor/ 1000 Ha: 1979/81, 13.4; 1989/91, 45				17.9	18.7	18.7		
Harvesters-Threshers	3 477	3 477	3 477	3 477	3 477	3 477	3 504	3 410

FAOSTAT data base, 2005

Table 16. Value of Libya's imports of agricultural machinery in 1995 – 2003, 1000 USD

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Soil Machinery	1 275	1 000	800	680	900	2 000	4 016	1 899	2 200
Agriculture Machinery	12 000	11 000	10 000	9 670	12 000	16 000	20 954	14 656	15 900
Tractors Agric Total	9 000	7 500	6 000	4 552	4 000	2 500	517	2 892	2 470
Harvesters-Threshers	9 500	8 000	6 500	5 218	5 000	4 700	4 275	4 798	4 695
Milking Machines	2 200	2 050	1 900	1 720	1 400	1 100	878	1 274	1 165
Total	33 975	29 550	25200	21 840	23300	26 300	30 640	25 519	26 430
% of total agricultural requisites	53.4	52.9	52.8	15.8	17.8	19.7	22.1	19.2	19.7

FAOSTAT data base, 2005

Table 17. Agriculture Price indices (PIN) in Libya, base 1999-2001

	Year												
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Agriculture	77.3	77.8	83.5	91.4	96.5	101.1	104.5	108.7	96.9	94.4	98.8	101.6	104.4
Cereals, Total	101.1	85.0	76.9	67.8	76.4	103.4	101.5	99.1	99.8	101.1	97.4	97.8	97.9
Crops	78.8	81.4	85.6	91.9	96.4	102.4	101.4	108.6	98.5	92.9	94.9	96.0	99.8
Food	77.0	77.6	83.6	91.5	96.5	101.2	104.9	108.9	96.9	94.2	98.8	101.6	104.3
Livestock	75.0	74.8	80.2	90.2	95.1	96.6	102.5	100.4	99.4	100.2	101.6	100.4	100.9
Non Food	86.1	84.8	82.4	88.1	94.3	95.9	87.7	99.6	99.6	100.7	100.7	100.7	109.1

FAOSTAT data base, 2005

3.3.2 SEEDS AND SEEDLINGS

With respect to actual inputs of seed, the only available data are those for total quantities used for cereals, potatoes, total oil crops, and egg production. During the 1995 – 2002 period, of the annual average of 199 000 tons of total cereal domestic production, about 61 000 Mt (160 Kg/ha of cereal area), 25%, was used as seed, of which 12 000 Mt of wheat, 38 000 Mt of barley, and 11 000 Mt of maize. Of the average annual domestic production of 188 000 Mt of potatoes, about 10 000 Mt (1 Mt/Ha) were used as seed. Average quantities of seed used for oil crops was 1 000 Mt, that for egg production was about 7 000 Mt per year during the same period.

Data concerning quantities and value of plant seeds used for fruit plantations and forestation are also limited. However, various reports mention that Libya has pursued an extensive reforestation program in recent decades. Since the 1960s, the government has planted Millions of seedlings in western Libya in an effort to prevent further soil erosion and desertification. According to FAO (2003), total forest area covered 358 000 Ha, 0.2% of total land area in 2000 with 190 000 ha of natural forest and 168 000 ha of forest plantation.

3.4. Machinery and equipment

The number of hectares of arable land per tractor in Libya represents the lowest in all of North Africa. As it is shown in table 15, there were 13.4 tractors for 1000 ha in 1979 – 1981. In 1989 -1991, the number grew to 45, and later in 1998 through 2000, it dropped to about 18 tractors per 1000 hectares. The total number of tractors has increased to 39,750 in 2001 by about 3 453 tractors since 1995. However, the number of Harvesters-threshers seem to have stagnated at about 3 477 since 1995 according to AOAD online statistics of 2005. Libya imported an annual average of about 25 Million USD (11.6 USD/HA arable land) of soil machinery, tractors, harvesters-threshers, milking machines, and other agricultural machinery such as seeders, hay rakes and pumps, from 1995 to 2003. From 1995 to 1997, this value represented the bulk of imports, about 52%, but in the subsequent years from 1998 to 2003, it declined to about 18% of total imported agricultural requisites (table 16).

3.5 Water use

Libya is home to the world largest water transport engineering scheme, the Great Man-Made River. The project is under the public Authority of Water Utilization. The cost of the two accomplished phase one and two of the project is around 14 billion US dollars and was totally financed by the State with no external loans. At present, the irrigation water from the project is available to the users at no cost. The completed project which may total an investment of more than \$25 billion USD indicate the high priority concerns of the State to provide for domestic and irrigation water.

The project aims to bring water from the desolate distant southern desert to the populated northern belt region of the country. The ultimate objective is to provide the much-needed

water for the northern belt where more than 80% of the population lives, and where nearly all of Libya's arable land is located. The idea of the project was thought of right after the discovery of the fossil reservoirs in 1953; first it was dismissed because of environmental considerations, but later, the project was adopted in the 1960s. The initial feasibility studies were conducted in 1974 and the work was begun in 1984. The project was planned to be completed in five phases over 25 years.

According to water-technology.net (2005), in the first phase, which was completed in August 1991, about 1,200 km of pipeline and channel systems were constructed from the Sarir and Tazerbo basins in the south-east of the country to the northeast of the coastal belt. The system is capable of carrying 2 Million m³ of water daily to the coastal regions around where the cities of Sirte, Brega and Benghazi are located.

Phase II was completed in September 1996. The pipeline transport system delivers about 1 Million m³ per day from the south western aquifer of Fezzan to the city of Tripoli and the Jeffara plain in the western parts of the coastal belt.

On going phase III is dealing firstly with the expansion of the existing phase 1 system by constructing more pumping stations and about 700 km of pipeline. The objective is to bring an additional 1.68 Million m³/day and thereby increase the total capacity to 3.68 Million m³ per day. Secondly, it is dealing with digging new field wells at Al Jaghboub basin, laying about 500 km of new pipeline, and constructing a receiving reservoir south of Tobruk. The objective is the supply of about 138,000m³/day to Tobruk and the coast.

Phase VI and V of the project will involve the extension of the distribution network together with the construction of a pipeline linking the Ajdabiya reservoir to Tobruk and finally the connection at Sirte of the eastern and western systems into a single network.

In total, the GMMRP will require the drilling of 960 wells with depths varying from 450 to 650 meters and upon completion the network of pipelines will extend to about 3,380 km. The network of wells will cover an area of 8000 square km.

Some of the large agricultural schemes associated with the project were offered by GMMRP Water utilization Authority to foreign capital investment for implementation, operation and management and marketing to encourage foreign capitals investment (gmrwua.com, 2002). The priority was given to three projects located near the cities of Benghazi, Sirte and Tripoli, for the production of forage crops, legumes, flowers or other higher value cash crops:

- The Tarhuna project located about 120 km to the south of Tripoli with a total area of about 1200 hectares and an annual water allocation of about 12 Million m³;
- The Sirt Al-Qardabia project with a net irrigated area of about 5400 hectares and an annual water allocation of about 57 Million m³.

- The large farm project in AL-KHADRA area located 25 km south to Benghazi with net irrigated area of about 6000 ha and an annual water allocation of about 59 Million m³.



Source: www.water-technology.net, 2005

3.6 Labor force and employment in agriculture

Since the discovery of oil, total employment in Libya has more than tripled from about 434 000 in 1970 to about 1 575 000 in 2002. Although the total number of agriculture labor has also increased, its share in the total employment has diminished from about 25% in 1981 to about 5% by 2002. The fisheries sector employs about 14 000 workers, a small fraction - around 1% - of the total national labor force.

Like many other oil producing countries with small populations, Libya has attracted a significant number of workers from other countries. Since 1983 when it was at its highest, the number of foreign workers has been gradually decreasing; it did radically decrease in specific years because of mass deportations of workers from certain countries. Although data on agricultural labor wages are not available, the fact that a large number of foreign workers participate in agriculture indicate that the level of salaries is relatively higher than in their native countries; mostly from Tunisia, Morocco, and Egypt. An estimated 70% of all salaried Libyans work for the public sector and are paid by the State.

3.7 Price and incomes

Agriculture is one of Libya's government main concerns. The State has been implementing large investments and instituted important support for agriculture development, especially for irrigation water. At present, no water fees are imposed on users of water for irrigation purposes. The products of basic character, such as food and

medicine, are also totally exonerated. Luxury products are, however, heavily taxed, 70 to 200%.

Compared to 1999 – 2001 as a 100 base, the FAO reported price indices for agriculture as a whole and for food both followed nearly the same trend (table 17). Although they increased gradually, they stayed generally lower during the period of 1992 to 1996. They increased steadily and were higher during 1997 – 1999, decreased in 2000 and 2001 but stayed higher than those of the period 1992 – 1996, and increased again in 2003 and 2004. From 1992 to 2004, the two price indices increased by about 27 points. Livestock price indices have also increased by about 30 points from 1992 to 2004. Meanwhile non food price indices increased slowly up until 2003, and sharply in 2004.

Using 1999 as a base, AOAD (2004) reported that the general cost of living was lowered by about 11% in 2002 and by about 20% in 2003; similarly, the food cost of living has decreased by about 12% in 2002, and by 23 % in the same years. The limited retail price data reported for certain food by the same organization seem to indicate that for the most part those prices did not change from 2001 to 2002: barley in Libyan Dinar (LD) (1.27 USD/LD in 2002 according to IMF, 2005) was at 260 LD/ton (about 204 USD); potatoes, tomatoes, dry onions, and oranges, at 500 LD/ton (400 USD); cabbages, 700 LD/ton (550 USD), and poultry meat, at 1500 LD/ton (1200 USD). The retail prices for other food sources of protein, however, did increase: beef from 7500 (5900 USD) to 8000 (6300 USD), and eggs from 2666 to 2833 LD/ton; mutton prices are the only ones that decreased, from 9000 in 2001 to 8000 LD/ton in 2002.

4. UPSTREAM AND DOWNSTREAM SECTORS

Libya subsidizes a number of imported products and organizes their distribution to the population through consumption associations. A national company of agricultural marketing has been attributed the responsibility of marketing the productions from the producers to the consumers and supplying public services such as the provisioning centers of hospitals, etc. In the same way, associations and production cooperatives supply inputs and market agricultural products of their members. This indicates that the State has for a long time been overseeing the marketing and distribution chains of agricultural input and output products. It is only recently that when some free market development measures and privatization are being implemented by the State.

4.2 Food processing sector

A satisfying description and analysis of the food processing sector situation in Libya is difficult to make here because in depth relevant and recent data, especially those concerning products, employment, output, and economic parameters and importance, were not available. However, it is safe to say that, in general, the food processing industry share in Libya's economy is not important in the aggregate agricultural sector, primarily because most of the food products are imported and ready for consumption. This is particularly the case for sugar and edible oil products. According to a report of a study on agri-food industry in the Maghreb countries by the Réseau Maghrébin d'Etudes Economiques (RMME, 1998), there were no industrial units for the extraction of sugar

up until 1995 in Libya. The report mentions that, since the 1960s, several cereal storage and conservation silos have been erected throughout the country with a capacity of more than 140 000 tons in 1995. The cereal mills in the cities of Tripoli, Sebha, and Zliten had a capacity of producing 400 tons per day in 1995. In the early 1980s, an infant food manufacturing unit using cereals, vegetables and dry fruits was started. Several other units producing animal feed were also built. All of the existing mills and mixing units are in or around Tripoli and mostly use the imported raw material and they do not satisfy all the country's needs, especially those of wheat flour and semolina.

4.2.1 – FRUIT AND VEGETABLES

Fruit and vegetable conservation and transformation sub-sector is the most important of the food processing sector. There are about 20 such units in the country that were built, owned and initially ran by the State; most of which have been privatized by now. These units transform the local produce, about 18 000 tons of citrus (mostly for juice and pulp) and about 1 500 tons of table olives and vegetables per year, but for the most part use imported fruits and vegetables.

4.2.2 – OLIVES AND OLIVE OIL

Average olive oil production is estimated at about 7 000 tons with very little fluctuation. The existing extraction units use modern equipments. Libya imports most of its edible oil needs; over the period from 1999 to 2002, it has imported about 1 Million ton of olive oil at a value of 12 Million US dollars.

4.2.3 – MEAT AND MILK

As for meat, practically there exist no transformation units in Libya; the prevailing meat treatments are the local and traditional and methods of seasoning and sausage making. Concerning milk and its derivatives, there exist several raw milk collection centers affiliated with industrial units that treat mostly imported powder milk into cream, yoghurt, and some cheeses. The limited number fish processing units exclusively deal with conservation by refrigeration and freezing. Other existing units in Libya deal with coffee and spice preparations.

4.3 Food consumption¹

According to FAO food balance sheet for Libya, the average quantities of food utilized in the period 1995-2002, indicate that, on the national level, the highest average per capita per year food utilization² (labeled as per capita supply in the sheet) was for vegetables, 206 kg/year representing about 32% of total food, followed by that of cereals, 197.6 kg accounting for 30% of total food, of which 84.2% was wheat. Per capita tomato utilization, 90.8 Kg/year was the highest

¹ Unfortunately the limited retail prices available from AOAD, non were available in FAOSTAT, and the lack of food survey data do not permit relevant in depth evaluation of household food expenditures in Libya.

² The term 'per capita supply' and reported in Kg/y for the products was verified to have been obtained by dividing the quantities of domestic utilization of the product as food by the average population of 5 090 875 inhabitant in 1995 - 2002. Supply does not necessarily mean utilization or consumption.

among all vegetables. Fruit utilization was in the fourth position with 56.8 Kg/year making about 8.7%, after milk with 73.7 kg/year and making 11.3% of all food. Dates and oranges ranked high among fruit utilization. Potato utilization, 34.8 Kg/year, was also relatively high.

5. TRADE AND TRADE PERFORMANCE IN AGRI-FOOD PRODUCTS

Libya's over all trade balance has been positive mainly because of its large exports of oil. Agriculture trade balance, however, has been negative for a long time. Libya must import most of its needs of food to satisfy its domestic demand. Agricultural products and food imports represent a significant proportion of its food needs. The value of agri-food products exports is insignificant and accounted for less than 0.6 % of all its total exports from 1998 to 2001.

5.1 – Structure of trade in agri-food products

Since 1979, Libya's total exports averaged about 14 billion USD per year, of which an average of only 34 Million USD was for agricultural produce. However, the imbalance in agricultural product and food trade has decreased since then (table 18), partly due to decreased imports of oil of maize, milk, mutton meat, and barley imports, and increased exports of animal skin and hair products. Total agricultural imports decreased from about 1.2 billion in 1979 to about 790 Million USD by 2001.

Table 18. Libya's total and agricultural trades in Million USD

Foreign Trade	1979-1981	1989-1991	1998	1999	2000	2001
Total Exports	17 861.00	11 110.00	6 126.50	7 900.00	9 663.40	8 376.80
Agricultural exports	0	37.7	48.8	35.3	56.3	31.2
% of total exports	0	0.34	0.8	0.45	0.58	0.37
Total Imports	6 823.50	5 207.00	5 687.00	6 200.00	3 537.50	4 131.60
Agricultural imports	1 223.80	1 235.50	1 112.80	832.9	763.6	790.1
% of total imports	17.9	23.7	19.60	13.43	21.59	19.12
Agriculture trade balance						
Exports-Imports	-1 223.70	-1 197.80	-1 064.00	-797.6	-707.3	-758.9

EU-MED AGPOL data base, 2005

5.1.1 CEREAL TRADE

Libya is a major importer of cereals. According to the FAO food balance data for the period 1995 – 2002 (table 24 in appendix), the highest imported quantity of all agricultural products was cereal grains and their products. An average of 2 013 Mt of cereals, 84% of total cereal domestic utilization, was imported per year, of which 67% was wheat, 11.7% barley, 9% maize, and 6% was rice. Libya, however, did export about 91 000 USD of wheat flour per year in 2000 to 2002, an insignificant amount compared to the 220 Million USD worth of the product imported annually in the same period (table 19).

5.1.2 FRUIT AND VEGETABLE TRADE

Libya's average annual production of fruits, 336 000 Mt, satisfied about 91% of its domestic utilization in 1995 – 2002 (table 24 in appendix). Except for lemons, limes, and dates for which there were some exports, Libya imported an average of about 25 Million USD annually to make up for the 9% deficit in its needs of most of the other fruits in the same period (table 19).

Domestic production of vegetables and consumption are the highest among all the major lines of agricultural products in the country. During 1995 – 2002, the annual average locally produced quantities have met about 75% of Libya's utilization of vegetables (table 24 in appendix). The 25 % deficit accounted for about 50 Million USD per year for vegetable imports in 1999 20002 (table 19). While the country was in balance with its domestic supply of onions and most of the other vegetables, tomatoes made up the bulk of its vegetable imports. Libya, however, did export an annual average of 10 000 Mt of tomatoes and 4 000 Mt of onions in 1995 – 2002.

5.1.3 OLIVE OIL TRADE

Libya's annual average olive oil production was estimated at about 7 000 Mt in the period of 1995 to 2002 (table 24 in appendix). To make for its deficit in the product, about 44% of the 29 000 Mt total domestic utilization, the country imported about 13 000 Mt of olive oil annually in the same period at an average value of about 16 Million US dollars (table 19).

5.1.4 ANIMAL PRODUCTS

Libya is relatively self-sufficient in meat and egg production. From 1995 to 2002, the annual average of 162 000 Mt of locally produced meat went for about 98% of total domestic utilization. The deficit, about 2%, was supplied by an average annual import of 5 000 Mt of mainly beef and sheep meat; average annual mutton and lamb meat import values were about 5 Million USD from 1998 to 2002. The amount of eggs produced annually satisfies nearly all of the country's utilization as food. On the other hand, milk production, about 191 000 Mt/year, provided for only 50% of Libya's total domestic utilization during 1995 to 2002. Consequently, the country imported the equivalent of its production at an average value of about 61 Million USD per year from 1998 to 2002.

Libya is an exporter of skin, wool, and hair of cattle, sheep, and goats, whose values ranked among its top agricultural export commodities since 1998. Average annual total value of these exports was 5.18 Million USD from 1998 to 2002.

Table 19. Values, 1000 USD, of Libya's top 20 agricultural export and import commodities in 1998 -2002

Top 20 exports	1998	1999	2000	2001	2002
Skin Dry-Salted Sheep	0	0	0	439	5 296
Oil of Maize	10 000	4 000	28 000	2 900	2 900
Wool, Greasy	251	720	270	270	1 004
Oil of Palm	958	958	958	958	958
Wool, Scoured	130	1	1	1	654
Oil of Coconuts	483	483	483	483	483
Lemons and Limes	453	453	453	453	453
Hides Wet-Salted Cattle	870	860	3100	717	330
Skins Dry-Salted Goats	0	0	0	739	310
Skin With Wool Sheep	3 705	3 705	1 300	424	268
Groundnuts Shelled	5 700	5 700	13 700	8 263	208
Butter of Cow Milk	0	206	206	206	206
Butter	0	206	206	206	206
Garlic	0	124	508	365	139
Vegetables Prepared nes	114	114	114	114	114
Hair Carded or Combed	107	107	107	107	107
Flour of Wheat	0	0	92	91	91
Nuts nes	85	85	85	85	85
Dates	300	10	230	220	84
Groundnuts in Shell	405	344	330	188	82
Top 20 imports					
Flour of Wheat	144 641	98 000	217 728	199 847	240 228
Tomato Paste	48 829	72 870	32 800	5 3304	103 962
Wheat	54 000	37 000	57 744	40 430	75 340
Maize	23 000	25 000	95 551	36 602	63 000
Whole Milk, Evaporated	43 000	39 000	29 300	79 545	55 660
Sugar Refined	65 593	36 000	35 855	42 251	42 251
Food Wastes	39 232	1 620	4 500	33 598	37 213
Milled Paddy Rice	47 500	33 000	52 382	33 203	34 000
Beverages Non-Alcoholic	2 800	7 695	22 000	20 756	28 857
Oil of Olive	16 000	8 700	8 000	23 000	24 000
Oil of Maize	103 000	81 000	139 190	75 570	22 000
Cigarettes	10 258	16 576	13 900	1 588	21 765
Mutton and Lamb	1 757	2 100	2 800	2 800	18 416
Tea	50 000	15 000	25 924	40 550	18 406
Barley	42 176	18 000	5 941	24 991	18 126
Cheese (Whole Cow Milk)	14 059	24 000	22 266	16 200	17 029
Food Prepared nes	4 700	3 400	5 100	21 505	15 313
Chocolate Products nes	4 500	900	1 250	5 045	12 368
Hen Eggs	13 907	14 000	8 100	8 400	11 476
Bran+Milling Prod	10 304	10 204	10 204	10 355	10 473

FAOSTAT database compiled by EU-MED AGPOL, 2005

6. CONCLUSION AND OUTLOOK

Libya is for the most part a dry and an arid country. The Sahara desert covers about 95 percent of Libya's land, and much of the remainder is used for grazing. Most of the arable land and pastureland is in the western parts of the narrow Mediterranean coastal belt. The scarcity of suitable arable land is one of the two major constraints to agricultural production in Libya. The mostly sandy soils prevailing in the country are shallow and coarse with limited natural fertility and hardly any vegetative cover. They are severely exposed to wind erosion. Salinity and sodosity constitute significant problems in the north mainly due to improper irrigation and water contamination by the sea and poor drainage. As result, substantial soil degradation is taking place in the country.

Grains are grown and some livestock is grazed to a lesser extent in the southeast area. Cultivation is sporadic and dependent on rainfall. Although total agricultural production has increased as a result of irrigation projects and the use of fertilizer, Libya's agriculture performance remains low and the country still must import large amounts to satisfy its food needs.

The existence of vast areas of arid steppe and pasture had oriented agricultural activities in Libya mainly towards pastoral livestock production. Principal livestock include sheep, goats, followed by cattle, camels, and poultry. Libya is relatively self-sufficient in meat and egg production and is an exporter of skin, wool, and hair of cattle, sheep, and goats.

The relatively "intensive" farming in Libya has traditionally been in or around the narrow northern Mediterranean coastal belt where most of the arable land exists and most of the fruit, vegetable, olive, and cereal productions take place. The number of agricultural land holdings and cooperatives in is quite small with more than 80 % less than 15 hectares' area. Principal crops produced include watermelons, tomatoes, wheat, potatoes, citrus fruits, dates, and olives. However, yields are generally very low. Consequently, Libya imports the major part of its cereal needs. Its production of fruits satisfies about 91%, that of vegetables meet about 75%, and that of olive oil contributes to about 56 % of its domestic utilization.

With the exception of urea, Libya imports nearly all of its agricultural intermediate input needs in fertilizers, pesticides, and agricultural machinery and tractors. Although, the number of hectares of arable land per tractor in Libya represents the lowest in all of North Africa, intermediate input usage in agriculture production is a lot less intensive.

The food processing industry share in Libya's economy does not contribute much in the aggregate agricultural sector, primarily because most of the food products are imported and ready for consumption. Nearly all of the existing mills and mixing units treat the imported raw material but yet they do not satisfy all of the country's needs.

The other major constraint to Libya's agriculture is the scarcity of renewable water resources; erratic and low rain fall and the lack of surface water flows. Coupled with the

over use of renewable resources by the ever increasing population demand has led to keen shortage and sever pollution of the little water that is available in the country.

Irrigation, which has for long constituted a common and important practice in Libya, along with the increasing demands for domestic and industrial purposes, have resulted in very high over use of the country's renewable resources and led to keen water shortage and pollution of the few existing and low rechargeable aquifers. With the discovery of large nonrenewable fossil water resources, Libya is now home to the world largest water transport engineering scheme, the Great Man-Made River. Currently, most of Libya's water usage comes from these non renewable water reserves through the GMMRP. The water transported to the north by the project, where most of Libya's population and arable land and where most of the large agricultural schemes established by the State, is helping alleviate the water shortage and it will continue to do so as long as its supplies last.

The future of agriculture in Libya will primarily depend on solving the constraints of arable land and water scarcities. Other constraints that will have to be addressed are the factors related to structural and demographic aspects as well as the lack of well prepared and informed technicians and farmers. Government efforts in agriculture development have been characterized by sizable investments and subsidies. During the last two decades, Libya's policies have made progress toward the development of its agriculture. However, it seems that those efforts have not yet resulted in meeting the Government ultimate objective of full food self-sufficiency as can be seen from the increasing food imports by the country.

An ecologically sound and economically viable use of the country's all available resources, especially those of the nonrenewable and renewable water resources, not to forget its vast oil wealth, applied from production and marketing to processing and consumption is the key to improve productivity and help establish a sustainable agriculture scheme. Along with an adequate education-research to develop adaptable farming techniques and management, and vigorous extension, agricultural productivity in the country will have a good future.

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APPENDIX

Table 20. Basic statistics and population of Libya.

Physical areas in 2002:	
Area of the country	175 954 000 ha
Arable and permanent crop land	2 150 000 ha
- as % of the total area of the country	1.2 %
• - area under permanent crops	335 000 ha
• - cultivated land, annual crops, and temporary fallow and meadows	1 815 000 ha
Population in 2004:	
Total population	5 659 000 inhabitants
- of which rural	13 %
Population density	3 inhabitants/km ²
Economically active population	2 020 000 inhabitants
- as % of total population	36 %
- female	25 %
- male	75 %
Population economically active in agriculture	94 000 inhabitants
- as % of total economically active population	5 %
- female	67 %
- male	33 %
Economy and development in 2002:	
Gross Domestic Product (GDP) (current US\$)	19 100 Million US\$/yr
- value added in agriculture (% of GDP)	9 %
- GDP per capita	3 508 US\$/yr
Human Development Index (highest = 1)	0.794

FOASTAT database, 2005

Table 21. Dams in Libya

Dam	Reservoir capacity (10 ⁶ m ³)	Average annual design storage (10 ⁶ m ³ /year)	Dam	Reservoir capacity (10 ⁶ m ³)	Average annual design storage (10 ⁶ m ³ /year)
Wadi Mejenin	58	10	Zaza	2	0.8
Wadi Kaam	111	13	Derna	1.15	1
Wadi Ghan	30	11	Abu Mansur	22.3	2
Wadi Zaret	8.6	4.5	Wadi Tabrit	1.6	0.5
Wadi Lebda	5.2	3.4	Wadi Dakar	1.6	0.5
Wadi Qattara	135	12	Wadi Jarif	2.4	0.3
Murkus	0.15	0.15	Wadi Zahawuiyah	2.8	0.7
Bin Jawad	0.34	0.34	Wadi Zabid	2.6	0.5
Total				384.74	60.69

FAO AQUASTAT database, 2005

Table 22. Libya's groundwater abstractions by area and sector in Million m³ per year

Area	Domestic water supply**		Industrial ^a Water Supply	Agriculture			Total
	from GMMRP*	Local production		Projects	Private	Total	
Al Jabal al khdar	0	127		0	207	207	334
Al Kufrah - As Sarir	94	12	117	204	148	352	575
Jifarah	0	140		0	920	920	1 060
Hamada el Hamra	0	36		209	160	369	405
Murzuq	0	58	0	271	1 425	1 696	1 745
Jabal Hasawna	140					0	140
Total	234	373	117	684	2 860	3 544	4 268

FAO AQUASTAT database, 2005; * GMMRP = Great Manmade River Project; ** Domestic water supply includes 5-10 Million m³/yr of water used for industry which cannot be identified; ^a Identified supply

Table 23. Libya's average yields of crops, Mt/Ha, and of animal products, Mt

Product	1979-81	1989-91	1998	1999	2000	2001	2002	2003
FRUITS								
Apples	NA	10.24	11.76	12.27	12.16	11.90	11.90	11.90
Cantaloupes & Melons	5.51	5.53	16.67	16.06	16.06	16.06	16.06	16.06
Dates	NA	4.91	5.00	4.96	5.00	5.00	5.00	5.00
Grapes	2.96	5.02	5.00	4.94	5.00	5.00	5.00	5.00
Lemons and Limes	11.70	11.47	10.65	10.38	10.37	10.37	10.37	10.37
Oranges	11.47	11.17	9.88	10.12	10.12	10.12	10.12	10.12
VEGETABLES								
Onions, Dry	12.14	15.30	20.59	20.00	13.69	20.00	20.00	20.00
Onions + Shallots, Green	7.29	17.73	17.14	17.24	17.50	17.67	17.67	17.67
Potatoes	6.67	7.89	18.00	24.99	20.00	19.50	19.50	19.50
Tomatoes	13.76	13.85	22.22	24.03	13.64	20.00	20.00	20.00
Olives	0.00	1.15	1.82	1.72	1.70	1.67	1.67	1.67
CEREALS								
Barley	0.36	0.50	0.48	0.48	0.47	0.47	0.47	0.47
Maize	1.02	1.02	1.80	2.00	2.89	2.00	2.00	2.00
Wheat	0.50	1.09	0.88	0.79	0.76	0.79	0.76	0.76
ANIMAL, Carcass Wt:								
Cattle	0.11	0.11	0.09	0.09	0.09	0.10	0.09	0.09
<i>Beef and Veal</i>	0.20	0.20	0.17	0.17	0.17	0.17	0.17	0.17
<i>Mutton and Lamb</i>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Cow Milk, ton/cow/y	1.20	1.20	1.15	1.21	1.21	1.21	1.21	1.21

FAOSTAT database compiled by EU-MED AGPOL, 2005

Table 24. Libya's food balance, average of 1995 – 2002

Average population= 5 090 857	Domestic Supply					Domestic Utilization					Per Capita Supply				
	Production	Import	Stock	Export	TOTAL	Feed	Seed	Waste	Other	Food	Kg/ year	Calorie / day	g/ day		
	1000 Metric tons												Protein	Fat	
Vegetable Products											2932	61.5	78.4		
Animal Products											375	24.9	24.6		
Total											3308	86.4	103.0		
Vegetables	827	303	2	15	1117	-	-	68	-	1049	206.0	125	5.1	0.9	
Tomatoes	190	300	2	10	482	-	-	-	68	1049	206.0	125	5.1	0.9	
Onions	174	0	0	4	170	-	-	-	19	463	90.8	42	2.0	0.5	
Other	463	2	0	1	465	-	-	-	9	162	31.7	37	1.2	0.2	
Cereals	199	2 013	176	0	2388	883	51	114	333	1006	197.6	1529	39.9	4.9	
Wheat	131	1 353	47	0	1531	266	12	88	317	848	166.5	1256	33.9	4.3	
Rice		119	4	0	123	19		3	16	85	16.7	169	3.2	0.3	
Barley	59	236	125	0	420	302	39	0	13	0	67	13.1	93	2.6	0.3
Maize	2	196	0	0	197	183	0	10		5	0.9	6	0.2	0.0	
Milk	191	190	2	0	383			8	-	375	73.7	149	7.5	7.9	
Fruits	336	32	0	1	367	49	-	30	-	288	56.8	113	1.3	0.4	
Sugars	1	189	24	0	214	-	-	-	30	184	36.1	347	-	-	
Potatoes	188	10	0	2	196	-	10	10		177	34.8	72	1.1	0.2	
Meat	162	5	-2	0	165	-	-	-	-	165	32.6	151	12.0	11.1	
Eggs	53	3	-	0	56	-	7	3	-	47	9.2	36	2.7	2.6	
Pulses	19	12	0	0	31	-		2		29	5.7	53	3.6	0.3	
Seafood	33	14	0	5	-	8	-	-	-	34	6.7	12	1.8	0.5	
Oil crops	200	47	-6	11	230	1	33	21	102	74	14.5	101	8.2	7.0	
Olives	185	1	0	0	187	-	-	20	102	32	6.4	23	0.2	2.4	
Vegetable oils	8	120	14	5	136	-	-	-	24	113	22.2	535	0.0	60.6	
Olive Oil	7	13	9	0	29	-	-	-	1	28	5.5	133	-	15.1	
Stimulants	-	17	1	0	18	-	-	-	-	18	3.6	7	0.9	0.3	
Coffee	-	17	1	0	18	-	-	-	-	3	0.6	1	0.1	-	
Cocoa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Beans		3			3					1	0.2	3	0.0	0.3	
Tea	-	1	0	-	1	-	-	-	-	14	2.8	3	0.8	-	

FAOSTAT database, 2005

Table 25. Quantities and values of Libya's imports of agricultural products and food,
1992 - 2002

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Imports in Metric tons/HD											
Cereals and products											
Total Cereals and flour	203	220	1 283	176	1 040	2 099	2 745	852	2 718	3 004	2 508
Total Cereals and flour	2930	7370	980	6170	070	590	030	140	520	650	540
Wheat	163	119	156		207	279	268	244	193	217	196
Wheat flour	860	810	190	110340	330	000	820	010	030	650	750
Wheat	500	538	606		433	594	764	491	427	266	712
Wheat flour	000	270	630	557650	040	170	710	690	330	550	660
Wheat flour	480	492	334		255	366	1 259	220	1 000	901	829
Wheat flour	000	670	570	337690	970	660	240	820	430	860	360
Barley	600	789	687			620	215			141	146
Barley	000	670	980	762750	70 540	870	000	90 470	37 820	490	720
Maize	50								276	147	402
Maize	000	35 710	25 510	18220	264 80	11 820	5 370	5 370	660	630	410
Rice	206	14	106			272	202		164	124	
Rice	000	1130	200	89860	85 150	780	480	72 630	530	700	92 370
Pulses											
Lentils	0	0	0	0	2830	150	70	40	190	870	960
Chickpeas	0	0	0	0	14 860	120	4 980	2 280	2 420	2 460	3 340
Broad Beans	0	0	0	0	400	1 140	30	230	2 280	700	1 370
Total Pulses	10			133							
Total Pulses	000	9 330	2 630	640	74 950	8 460	10 980	2 880	6 560	4 740	6 940
Oil seeds											
Shelled											
Groundnuts	0	0	200	120	0	10	130	450	20	90	50
Sesame	100	40	300	300	60	200	30	130	240	90	220
Soya Beans										100	11
Total Oil Seeds	1 100	510	490	490	6 660	26 360	51 660	54 860	26 270	780	7230
Total Oil Seeds										101	11
Total Oil Seeds	1 200	1 310	990	910	6720	26 850	52 920	55 440	26 540	010	7640
Vegetable oil											
Soya Bean Oil	1 200	2 030	2 740	2 020	330	40	900	1 340	470	1 250	750
Cottonseed Oil	4 000	0	4 000	2 670	6 110	5 040	5 350	0	0	0	0
Olive Oil	1 000	660	0	730	10	10	10	9960	40	20	70
Sesame Oil	0	0	0	0	0	0	0	0	250	30	30
Sesame Oil	48			103			13		187	10	
Corn Oil	000	59 700	69 700	410	87 050	99 110	3610	96 630	650	6850	74 610
Linseed Oil	0	0	0	0	40	100	160	570	50	30	250
Margarine	10										
Total Vegetable Oils	000	14 470	14 630	14 790	2 770	2 600	6 340	3 860	1 390	1 390	180
Total Vegetable Oils	150										
Total Vegetable Oils	810	114710	75850	111460	97330	108360	143830	117980	188550	109580	76360
Vegetables											
Fresh Tomatoes	19										
Fresh Tomatoes	000	23330	25590	23950	21290	23260	23410	12870	220	20	20
Onions	20										
Onions	000	17340	13390	18610	9260	16490	17340	20350	10	160	310

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Processed and Preserved Vegetable	3 000	2580	2160	3210	440	2130	2130	1360	180	220	450
Total Fresh, Processed and Preserved Vegetables	118 000	130 660	137 210	156160	151690	160090	197130	91270	69770	58850	47040
Fruits											
Orange and Mandarin	0	0	0	0	0	0	0	20	20	120	90
Lemon	0	0	0	0	40	30	30	30	70	60	110
Bananas	10000	6260	5 820	8400	9080	10440	11280	12120	11480	26220	22130
Apple	0	0	0	0	0	0	0	0	4720	4590	7690
Fresh Grape	5770	6800	8 250	11090	9090	9280	9210	12920	30	150	100
Dried and Fresh Date	3600	3290	3 230	3620	5420	4450	4680	4420	50	310	50
Fresh, Preserved or Canned Olive	0 18	0	0	0	110	30	30	50	670	1340	4270
Total Fruits	600	14 890	15 100	17200	56 030	33 830	37 050	16 630	17 380	33 550	33 340
Livestock & animal products											
Live Cattle and Buffalo	55 000	27720	47 120	114000	140000	108030	177900	223480	13000	590	1170
Live Sheep and Goat	180 000	145110	126 180	266000	226000	132450	175680	123460	4020	4020	9340
Total Red Meat (Fresh, Preserved and Meat Preparations	25 130	17820	14500	46360	18560	22950	35480	10850	2930	10780	17330
Beef (Fresh, Preserved and Meat Preparations)	25 000	17730	14500	21420	9440	10250	15000	10190	1410	880	2350
Sheep and Goats Meat (Fresh, Chilled or Frozen)	130	90	0	0	340	260	260	300	1490	8300	14930
Other Meat (Fresh, Chilled or Frozen)	0	0	0	0	410	350	400	20	20	0	10
Total Meat (Dried, Salted, Canned and Meat prepara	24 600	21530	17790	24940	8370	12090	16960	60	10	10	40
Live Poultry	0	0	0	0	30	0	0	0	0	1470	0
Fresh Milk	1 200	800	870	930	1200	3120	2010	3120	950	1920	2950
Chicks	0	0	0	0	0	0	0	240	0	1430	20
Poultry meat (Fresh, Chilled or Frozen)	4 500	5230	5070	6020	180	270	3090	270	650	530	1070

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Milk Product (Liquid Form Equivalent)	284 800	281250	338600	368430	461030	471870	425920	525070	280240	548120	637770
Cream	1 200	800	870	560	850	1460	1210	1280	440	210	390
Dried Milk and Cream	10 000	10670	10400	10480	16900	12290	12430	19620	150	240	220
Evaporated or Condensed Milk	1 500 14 000	670	750	830	1190	1230	1320	180	23100	14850	14850
Cheese	000	17180	16330	19140	25310	30550	26750	30340	7800	7810	13660
Butter and Ghee	4 800	3670	3520	3790	6680	6710	5830	6630	1170	1610	2180
Total Egg	500	400	1640	390	3110	500	1340	0	790	100	2520
Table-Egg	500	400	1640	390	290	500	470	430	790	10	180
Import Values in 1000 USD											
Cereals and products											
Wheat flour	123 000	125420	167890	173020	160130	232250	260410	82690	59040	40430	88960
Barley	78 000	104000	103440	114680	10060	115330	63650	14960	6070	22970	12090
Wheat	67 000	62530	65850	85150	78270	120620	414250	30500	222600	183680	153780
Maize	9 300	7030	5210	3640	5260	2630	1480	1480	97690	33640	41980
Sorghum	0 86 000	0	0	0	0	0	0	0	0	0	0
Rice	56010	41140	39870	39630	135880	90640	17610	53550	30520	27060	
Total Cereals and flour	364 270	354990	274870	416360	293350	607280	530250	147250	556990	312720	325330
Pulses											
Lentils	0	0	0	0	2390	130	150	20	130	470	260
Chickpeas	0	0	0	0	18290	140	9680	1830	2770	1890	990
Board Beans	0	0	0	0	420	1380	60	170	2270	520	380
Total Pulses	7 200	7310	2330	42840	31930	3600	22350	2340	7530	3570	2270
Oil seeds											
Shelled											
Groundnuts	0	0	400	240	0	40	680	990	30	140	40
Sesame	190	70	510	510	260	1270	670	410	970	270	360
Soya Beans	400	220	170	170	4260	15810	7570	23560	23850	45400	22630
Total Oil Seeds	590	350	1080	990	4550	17260	78750	24970	24890	45920	23260
Vegetable Oils											
Soya Bean Oil	1 950	1840	2320	1710	500	80	1650	1290	470	1240	370
Cottonseed Oil	4 200	0	4200	2800	6410	5290	5610	0	0	0	0
Olive Oil	2 000	1360	0	1060	40	60	30	11840	100	20	40
Sesame Oil	0 58 000	0	0	0	0	0	0	0	390	40	20
Corn Oil	000	75680	89020	109110	93650	122480	133780	73650	139190	75570	39870
Linseed Oil	0	550	520	580	660	580	40	110	90	40	140
Margarine	5 900	4310	4970	2420	5120	5890	6460	7030	2330	1810	120

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	161										
Vegetable Oils	420	125270	84370	117680	106390	134380	245120	99860	140300	79870	40700
Fresh, Processed and Preserved Vegetables											
Fresh											
Tomatoes	10	140	170	69610	49850	37410	52290	10	260	20	10
Onions	80	20	620	630	220	180	390	390	10	120	100
Processed and Preserved											
Vegetable	0	0	0	0	0	0	0	0	410	290	1460
Total Fresh, Processed and Preserved	30										
Vegetables	090	55990	29750	70240	50300	37590	52680	64490	58820	44100	33430
Fruits											
Orange and Mandarin	0	0	0	0	0	0	0	0	40	120	60
Lemon	0	0	0	0	0	10	30	10	60	30	40
Bananas	3500	2370	1080	2540	15450	2320	7500	7940	17630	24850	12770
Apple	2900	5070	20	80	19530	6410	50330	5960	6310	4550	5170
Fresh Grape	0	0	0	0	0	0	0	0	60	140	60
Dried and Fresh, Preserved or Canned											
Olive	1 900	3430	4810	3690	2110	3240	20010	2240	1730	2480	3910
Total Fruits	9 350	11300	7370	15180	37930	9900	82580	18660	26530	32950	22040
Livestock and animal products											
Live Cattle and Buffalo	40										
000	29670	11750	61700	170860	170860	14190	6690	9730	300	130	
Live Sheep and Goat	64										
000	79000	65480	44930	44930	44500	32180	24500	1390	1390	1540	
Total Red Meat (Fresh, Preserved and Meat Preparation)	5 520	4530	4440	4110	9120	15270	14520	6690	7920	25010	21550
Beef (Fresh, Preserved and Meat Preparations)	5 400	4450	4390	3500	6420	8300	10660	3380	4310	1850	2990
Sheep and Goats Meat (Fresh, Chilled or Frozen)	120	80	50	10	1680	6480	3530	2500	3550	20130	18530
Other Meat (Fresh, Chilled or Frozen)	160	200	240	200	550	90	320	0	40	0	10

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Meat (Dried, Salted, Canned and Meat preparations	360	210	390	400	470	400	0	810	30	10	20
Live Poultry Chicks	0	0	0	0	0	0	590	550	0	12480	160
Poultry meat (Fresh, Chilled or Frozen)	600	370	4360	5500	2090	4570	5200	810	1470	660	1040
Milk Product (Liquid Form Equivalent)	82										
Fresh Milk	700	88000	118540	92390	90910	75530	151130	102740	73640	83770	97470
Cream	1 500	830	520	910	10	210	1240	20	2270	3400	3010
Dried Milk and Cream	1 500	830	520	370	340	60	60	30	680	240	220
Evaporated or Condensed Milk	33										
Butter and Ghee	500	29670	29350	31650	33940	220	67340	37920	200	250	150
Cheese	25										
Total Egg	000	26960	38380	23110	24730	23790	22030	20270	25310	14020	14020
Table-Egg	9 700	8370	17120	13130	7360	4100	7580	8420	2130	2170	1390
	13										
	000	22170	32650	22680	24530	26610	74900	38540	22760	16200	13140
	6 800	7170	6320	6170	20	730	0	0	30	40	6510
	6 800	7170	6320	6170	20	50	0	0	30	40	510

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