A review of The National and International Agro-Food Policies and Institutions in Egypt

Soliman, Ibrahim and Mashhour, Ahmed and Gaber, Mohamed

Professor of Agricultural Economics, Faculty of agriculture Zagazig University, Zagazig, Egypt, Professor of Agricultural Economics, Faculty of agriculture Zagazig University, Zagazig, Egypt, Professor of Agricultural Economics, Faculty of agriculture Zagazig University, Zagazig, Egypt

12 October 2011

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By

Ibrahim Soliman, Ahmed Mashhour and Mohamed Gaber

Professor of Agricultural Economics, Faculty of agriculture Zagazig University, Zagazig, Egypt

INTRODUCTION

The study presents an analytical profile for the performance and policies of the agro-food sector in the Egyptian economy and rural society, the agro-food industry, the agro-food production and consumption, the agricultural sector Structure and policies. In addition, the study concerned the agro-food trade performance and policies. The caudal part of the study concerned a future perspective view of the Egyptian agricultural sector

1 DESCRIPTION OF AGRO-FOOD SECTOR

1-1 Importance and Role of Agro-Food Sector

1-1-1 Relative Size to national economy

Agricultural sector is a major sector in Egypt's national economy. It is responsible for achieving food security, by using human and natural resources with technology and capital in intensive way. The economic reform program has been significant although unequal across sectors. Agriculture has received closer attention than manufacturing and some services, which are only being liberalized gradually. Reform in agriculture, which began in the 1980s, has reduced government control over production, pricing, and distribution (Soliman, 1998). As a result, there appear to be no major remaining restrictions on annual production and most agricultural products appear to be freely tradable. While reforms in the manufacturing sector have continued, they have not been as rapid. All import and export bans and quotas have been abolished (World Bank, 2008).

The annual average of the period (1995-2007) showed that agricultural sector provided about 31% employment opportunities of the total workforce (Table 1), contributed approximately by 16% of GDP, and by nearly 9% of total exports (Table 2). The agricultural sector has achieved a steady increase in the volume of investments directed to such sector. Agricultural investments reached about 1.13 billion US$ in 2005/2006 and rose to approximately 1.5 billion US$ in 2006/2007 even though it had not passed 6.3% of total public investment (Al Bahnasawy, 2009). While 35% of the economically active population was employed in agriculture in 1995 (Table 4), the agricultural share in total Egyptian GDP was only 17%, the same year, (Table 2). Such role of agricultural sector declined to 27% of employment, (Table 1**)** and 15% of GDP (Table 2), in 2007.

In wards, there was a low growth rate of the Egyptian agricultural production, over the last decade (

Table 3), associated with imbalance between a low share of this sector in GDP and relatively higher share in total employment. Such imbalance implied lower productivity, in terms of average value of agricultural output per agricultural worker, comparing with the national level, (Table 1), where the agricultural labor productivity reached only 50% of the national one. Egypt has remained a net importer of agricultural products, although its agricultural trade deficit has decreased in recent years (Table 2).

1-1-2 Agro-Food Sector and the society

Agriculture is not only a vital economic sector; it is mainly, a style of life. Even though modern agricultural systems have been developed to simulate, in numerous activities, the production relations of industries, agriculture cannot grow without being enveloped by a satisfactory living of the rural population.

1.1.2.1 Rural Standard of Living Indicators

The standard of living of rural community is a major criterion of rural communities. Therefore, this study has utilized the data t of two modern successive household budget surveys, conducted by the central Agency of Statistics and Public Mobilization (CAPMAS) of Egypt in 2000 and 2005, in order to estimate some major indicators of the standard of living in rural regions of Egypt and compare them with urban regions of the country, (Table 5). From that table, while the food price level raised at 9.4% annually between the year 2000 and 2005, it raised annually at 2.1% in urban region. This shows how government for urban much more than rural biased the food price subsidy policy and market control function.

Table 6, also, shows that although the ratio of Rural annual per capita income (total expenditure) to urban level at current price raised from 55% in the year 2000 to 84% in the year 2005, at real level (constant price of 2000) such ration decreased to only 39%. This was due to a decrease in the real annual rural per capita income at 9% while such decrease was only 2% in urban areas. Consequently, , the standard of living in rural regions is less than urban region at current prices and has gotten worsen at constant price level. Interpretation of such performance is due to less economic growth and less food subsidy policy in rural than urban.

1.1.2.2 Agriculture Share in Rural Household Income

Table 6, presents the household's income structure in both rural and urban regions in Egypt. While agricultural activities were the main source of income in rural area, i.e. around 62% such activities were only 16% in urban regions. While income from wages and salaries was almost one third of urban household's income it was only 18% in rural regions. The rest of income sources was derived from residential building rent, commercial projects and financial activities. Such sources represent about one-half of urban household's income and only one-fifth of the household in rural regions. In words, the opportunities for non-agricultural sources of income in rural areas are much more less than urban. Accordingly, the increase in non-agricultural population in rural areas is going to be an abundant burden on the national economy in Egypt over time, as will be seeing in the following section.

1-1-2-3 Non- Agricultural Rural Population

The demographic changes in population structure (Table 4) show a very important issue that has affected much the performance of the Egyptian Economy. While the total population size grew from about 52 million inhabitants in 1986 to around 83 millions in 2009, and the urban population grew at almost the same rate, the rural population has shown vital demographic changes over that period. The share of agricultural population in rural society declined from almost one-half of the rural regions in 1986 to only 29% at a decline annual rate of 0.3%. On the other hand, the non-agricultural rural population increased from only 7% of the rural communities to more than 29% of such communities at annual growth rate of

8.2%. The resultant was a growth of total non-agricultural population, either living in rural or urban regions from 51% of the total population to more than 71% along the last three decades. It seems that the newly urbanized population has shifted from food producer to only consumer, but simulating the high urban propensity to consume, either quantity wise or quality wise. In addition, such abundant non-agricultural population usually has not satisfactory opportunity income and/or employment either in rural or urban regions. They have made extra pressure upon the demand for agro-food sector, without sharing in expanding its supply**,** (Soliman, et al, 2000).

Either the non-agricultural population stayed in rural communities or migrated to new urban community, they are always suffering from lacking of satisfactory jobs to cover their ambitious acquired desire to improve their consumption attitudes. Accordingly, they have become a main source of expanding the population categories under the poverty line and the enlargement in the food and other services subsidies.

The expelling factors surpassed the attracting ones in rural societies, particularly with the liberalization of the agricultural market by 1986/1987. This was due to the lack of integrated rural development programs, until the onset of the 21 century in Egypt. Since 1994, Egypt's Human Development Reports and the growing number of indicators of well-being have consistently shown the persistent level of deprivation of rural communities. They are deprived in terms of physical infrastructure facilities as well as education access and outcomes. Moreover, the quantity and diversity of job opportunities is far more restricted in rural Egypt and can explain the strong tendency for rural-urban migration and the very fast expansion of informal Slums (Ashwaiyat) which offer intermediate earnings and living conditions between rural and urban regions.

1.1.2.4 Poverty in Rural Versus Urban Communities.

Where the gross national product (GNP) per capita expresses a national average of wealth, it does not provide an insight into the levels of actual wealth distribution to individuals within the state. Accordingly, Ginny coefficient provides a useful language to show the principal factors that characterize equality and inequality for nation states and communities inside states. By focusing on social equity the Ginny coefficient provides a useful guide (Litchfield A, 1999). In Egypt Lorenz Curves and Ginny Coefficients are estimated from the Household expenditure surveys conducted in Egypt since 1958/1959 till now. The estimates are for urban and rural regions. Ginny coefficients can be used usefully, as one means to discuss economic and social reform, to forecast upon trends towards civil violence, organized crime and migration rates.

The poverty rates as shown in (Table 7) indicates to the concentration of the poor in rural areas and particularly those in Upper Egypt. Even though rural regions are poorer than urban, inequality in income distribution is less in rural than urban regions of Egypt, (Table 7). However, more income distribution equality associated with much less income level than urban, is a disadvantage, as it means that poverty is wide expanded and more deeper in rural than in urban

1.1.2. 5 Does Migration Reduce Unemployment and Poverty in Egyptian Rural

Migration broadens young people's opportunities and offers them a way to earn higher income and gain skills, (The World Bank, 2004). However, many Egyptian youths aspire to migrate; few actually succeed to do so. According to SYPE (2010), 15% of Egyptian youth, 18-29 years old, aspire to go live or work abroad, but only 1.6% had managed to do so. By now, It is well established that migration from Egypt is mostly made up of temporary migration to other Arab countries, whereas the proportion of return youth migrants from European destination countries is almost negligible, perhaps because those who go there do not return (UN Department of Social and Economic Affairs, 2009)

. Education appears to be a powerful motivator for migration of both young men and young women. Surprisingly, both the aspiration and actual migration rates increase steadily with education. It ranges from 4.5% for those with no school certificates to 20.9% for those with university education (ILO and Ministry of Manpower and Migration, 2009). University-educated young men are nearly 3.5 times as likely to migrate as men with no school certificate are, and university-educated women are more than 8 times more likely to migrate than their counterparts with no school certificate are. It, apparently, means that the higher the education level in Egypt, the less is the opportunity to be employed, (Migration (DRC), 2007). However, El- Kogali S. and Al-Bassusi N, (2001) add that the increase in both migration level aspirations as well as actual migration with education level reflects the role of education in in facilitating migration. Men from urban slums milieu and from rural areas are much more likely to migrate than men from urban non-slum areas (El-Kogali, S., and E. Suleiman, 2001). Absence of job opportunities (51%), poor living conditions (33.9%), the relatively low income in Egypt compared to other countries (33.0%), the need to assist their families financially (14.7%), and the need to earn money (12.7%) are motivations behind migration.

Table 8, shows high proportion of Cairo and Giza population are from internal migration. The majority of migrants are from Upper Egypt rural areas where is relatively the lowest income communities. This may be behind the increase in the numbers of slum dwellers in Cairo and Giza, which amounted to more than 6 million people, representing about 50% of slum dwellers in Egypt in January 2008. (ILO, 2008). According to data from the Central Agency for Public Mobilization and Statistics some studies point to the negative impact on the educational process of these massive immigrations into peril-urban metropolitan region “Cairo and Giza” (El-Kogali, S., and E. Suleiman, 2001). In addition, the three cities along the western bank of sues canal, Port Said, Ismailia and Suez, have showed the highest rate of migration among their populations. However, the reasons were mainly due to duel migration (out from and to) during wars at sues canal borders over the period 1967-1973, (UN, 2009).. Most of rural immigrants to the Arab countries and their job opportunities are mostly in the farming and construction sectors as unskilled labor were from rural areas of Egypt, (These opportunities have been the main source of savings in the form of remittances which are subsequently used to engage in projects as young entrepreneurs (Zohry, A. and Harrell-Bond, B., 2003)

1-2 Main Agricultural Commodities

1. 2. 1 Crops

The total agricultural area was around 3,689 million hectares in 2009. The major component of the agricultural land is the Nile delta and its valley until the Sothern border of Egypt, which is called the old land. It represents 70% of the total. The rest is reclaimed desert land called new land (Table 9). Most of agricultural land (97.6%) is surface irrigated by Nile water. The rest is 2% underground water and 0.4% rain fed, concentrated at the north west of Mediterranean shore. More than 80% of water resources in Egypt are utilized for agriculture, (Soliman, 2010). The permanent crops share was 22% of the agricultural area, (Table 9).

As shown from (Table 9) the cropped area is about 176% of the agricultural land. This means that the Intensification factor of Egyptian agricultural system in land is closer to two crops a year per hectare (Cropped Area/ Agricultural Area). The intensification rates of old and new land are 189% and 147%, respectively. To identify the main crops, it should be noted that, there are three cultivated seasons (winter: October-May), (summer: May-August), and (Nile: August-October). The area of the winter season, occupies by 78%, followed by summer season (62%), and the fourth category is Nile season crops, which occupies around 8% of the total agricultural land. Accordingly, the main crops are going to be identified by season beside, the main permanent crops.

1.2.1.1 Permanent crops

Permanent crops last for more than one year on land. They compose of perennial crops (Sugar cane, and alfalfa) and trees (forestry, fruit trees, and Date palm). Date palm areas are concentrated, mainly, in the new (reclaimed) land. Sugar cane and alfalfa occupy together about 20% of the total permanent crops area. It should be mentioned, that most of alfalfa area is in new land as it biologically enrich, directly and indirectly, the new land soli fertility. Forestry (wood trees) acreage is almost nil of 1.2% of the total permanent crops area and located, entirely, in new land regions, which was originally desert area, (Table 10). Two thirds of Permanent acreage is allocated for fruits, which, also is mainly concentrated in new land where 50% of such acreage is for fruit trees. In addition, Date-palm area is concentrated, mainly, in the new (reclaimed) land.

Fruits are not only the main permanent crop, but they have also a significant share in Egyptian agricultural exports, 583 thousand tons of fruits, i.e. 6% of production, were exported in 2009. Citrus (Lemon, Limes, Mandarin and Oranges) are the main producing fruits in Egypt. Table 11 shows that the total production of this category among fruits production was more than one third in 2009. Citrus, also, represent one-half of the exported quantity of fruits in the same year, where the bulk was oranges. Citrus represent one third of fruits consumption. However, the share of fruits in daily calories intake is around 5% and 2% of protein intake, (

Table **12**). Even though, the average productivity of oranges in Egypt has reached only 61% of the world average in (Table 13).

Date palm as the second category among permanent crops in Egypt, occupying 20% of the permanent crops area (Table 10), provides about 1.3 million tons of production (Table 11). However, dates almost recognize self-sufficiency in Egypt. Only 5,000 tons are exported and one ton of special quality is imported from Saudi Arabia (Table 11). Egyptian per capita consumption of dates reaches around 15 kg per year, which provides 2% of the daily per capita calories food intake, (

Table **12**). Dates yield per hectare in Egypt is one of the highest levels in the world, around 15 tons per hectare, while the world average is around 5.75 tons per hectare, (Table 13). Surprisingly, that Egyptian agriculture holds such large acreage, big quantity of production and high yield of dates and exports only 0.4% of its total production.

1.2.1.2 Winter Crops

The main crops in winter are wheat and clover (Berseem). The later is the main fodder crop in Egypt. They occupy 6 month (Oct. – May). The first occupies about 55% of winter and the second occupies around 26% of winter area, (Table 14). Since the last decade, within the economic reform era, the government has provided a guarantee wheat price higher than the international price of wheat. This policy instrument encouraged farmers to deliver their wheat for being processed as subsidized common bread and to raise the wheat self-sufficiency as basic strategic crop. Such incentive p has lead to decrease the Berseem area, as competitive crop, from one third to less than one-fifth of agricultural area in Egypt. The area taken from under berseem allocated mainly for wheat and opened, relatively, a place for sugar beat area to expand, (Table 14). The changes in price policies would explain to some extend such changes in cropping pattern.

Wheat production reached about 7.4 million tons in 2009. Even though, it hardly covered 56% of consumption in that year, (Table 11). Egypt is the first importer of wheat in the world market, where. Wheat imports surpassed 5.9 million tons in 2009. The shortage of wheat production to cover consumption is not due to low productivity, as the Egyptian wheat yield reached 2.2 folds the world average in 2009, (Table 13), which put Egypt at the top of the world's countries in wheat productivity. However, as Egyptian Agriculture is fully surface irrigated with suitable weather and intensive fertilization the potential wheat

productivity is at least 50% higher than the existing level. It seems that, limits of available agricultural land in winter are the constraint, which is also associated with water limitation.

Wheat is not only the main imported item but it is also the main food item. It provides one third of daily diet calories intake and 36% of the daily protein intake, (Table **12**) .Therefore, it is the main item of the subsidized food package in Egypt. Almost 60% of wheat flower in Egypt reaches the market as subsidized "Baladi" bread, (Soliman and Eid, 1995). Therefore, using wheat as feed is unfavorable trend. The actual quantity utilizes, as feed is not known. The food balance sheet showed that 221 thousand tons were used as feed in 2009 (Table 11). Such quantity represented about 5% of domestic production. However, some older studies from field surveys should that the wheat quantity used for feed reached three times such estimate (Soliman and Abdul Zaher, 1984).

1.2.1.3 Summer and Nili Crops

The summer season crops are numerous as shown in (Table 15). However, the two most important ones are maize and rice, which represent about 40% and 32% of the aggregate total summer cropped area, respectively. They are concentrated in old land. In general, the summer crops are concentrated in old land region, because in summer, weather is hot and new land usually is much poorer land, close to sandy. Therefore, cultivating such crops in new land consumes more water and more fertilizers. Water charge is more costly in new land; due to not only more quantity, but also it is of the higher cost of irrigation network, using electricity power, sprinkle, and/or drip irrigation.

It should be mentioned, that a policy to raise the rate of self-reliance on domestic resources in preparing the common popular subsidized bread (Baladi) in Egypt had been followed until few years ago. Such policy intended to add 20% of maize flower to the flower delivered for processing the common bread, even though, the production of maize (5.5 million tons in 2009) covered only 58% of the total consumption **(**Table 11). Such policy, also, activated the demand for maize cultivation. This extra demand compensated the decrease in the demand for maize for livestock and poultry, where imported corn has become a main poultry and livestock feed ingredient. In addition, the demand for maize to make bread in villages has diminished to great extend associated with socio-economic development over decades (Soliman and Gaber, 1997).

Egyptian rice is a main exportable agro-food commodity. The exported quantity surpassed 27% of production in 2009. About 4% of domestic supply, i.e. 138 thousand tons were used for feed. This quantity was the broken grains. The yellow corn has recently introduced to the Egyptian agricultural cropping pattern, to replace partially the imported quantity for poultry and livestock feeding. The self-sufficiency of maize was 58%, i.e. 42% imported in 2009, (Table 11). Therefore, 6.2% of the cropped area in summer was allocated for corn, (Table 15). Such area was mainly, at the expenses of sorghum and maize acreage. The expansion in yellow corn area is a promising option to fulfill the gap in corn market for poultry feed, (Fawzy, 2009). The average yield per hectare of maize and rice reached in 2009 more than two folds the world average (Table 13). Even though, there is a probability to expand area and production of both crops. However, the limited water resource in Egypt is a constraint to expand rice area. Rice and maize are the second important food items in the Egyptian diet after wheat. Together thy provide 28% of calories and 23% of protein in the daily food intake, (Table **12**)Egyptian cotton, historically, was the main crop in the cropping pattern. However, empirically, cotton now is occupying not more than 6.5% of summer-cropped area (Table 15). Dramatic changes of Egyptian economy and contradicted Policies as well as lack of proper management of related institutional framework in Egyptian economy has lead to rapid deterioration in the area, yield, and associated domestic industry of cotton. Even though, cotton is still occupying almost, value-wise, the front of agro-food exports bill, (Soliman and Owaida, 2005). The Egyptian cotton still has a higher yield per hectare than the world average, and has unique quality of extra-long staple at the highest price in the international market.

The Nili seasonal crops are cultivated as late summer season. Therefore, almost the same summer crops are cultivated during this short period (August-October). The main crop is maize which occupies 80% of the Nili cropped area, of which 69% in old land and 7% in new land in 2009, **(Table 16)**. The feasibility of the Nili season is to utilize the short time left after early picking of cotton or after short season rice. In addition, a large area of it is cut as green maize, which is used for livestock feeding in summer to partially fulfill the lack of green fodders in this season.

1.2.1.4 Vegetables

Similar to field crops vegetables are cultivated along the three agricultural seasons in Egypt. This is because of the moderate Egyptian climate, as a main factor that generates competitiveness. Investigation of the vegetable yield per hectare in Egypt in comparison with the world yield average of comparable vegetable in **(**Table 13) shows that the Egyptian level is several folds the world average. This is an additional advantage, which enlarges the opportunity of Egyptian agriculture to approach comparative advantage in vegetables in the world market (Soliman and Gaber, 2004).

The most important vegetable crops are Tomatoes, Potatoes, Onion, and Green beans, in winter season. They occupy 32%, 19%15% and 8% of winter vegetable cropped area, respectively, (Table 17). Water melon for seeds, Strawberry, Tomatoes and Potatoes,, occupy 19%, 19%13% and 11% of summer vegetable cropped area, respectively, (Table 18**)**. During Nili Season Tomatoes, Potatoes, Egg plant and Green pepper occupy 29%, 26%, 8% and 7% of vegetable cropped area, respectively, (

Table 19) The main exportable vegetables from domestic Egyptian production are tomatoes, onion, potatoes, strawberry and green beans. Even though, the total quantity exported of vegetables was 930 thousand tons, it was less than 4.3% of production in 2009. This could be an evidence of the poor competitiveness of Egyptian production in the world market for many obstacles facing vegetables export (Soliman and Gaber, 2004). While the share of potatoes in total production of vegetables was 13%, its share in vegetables exports was 47% and while the share of tomatoes in vegetables production was 41% its share in vegetables export was 5% in 2009, (Table 11**)**

1-2 -2.Livestock

1-2-2-1 Livestock in the Egyptian National Economy

Livestock development is necessary in Egypt for four reasons. First, Egypt is a net importer of red meat to great extend and to some extend of dairy products, particularly butter and ghee (Table 11). Secondly, The Egyptian agricultural system is highly intensive with abundant by-products, which are economically utilized by livestock as feeds. Thirdly, the intensive farming system and the ambitious land reclamation program, associated with the absence of the silt after stopping the Nile Flood by establishing the high dam, in Aswan –south of Egypt- has dictated renewing the soil fertility with organic fertilizer from livestock.

The forth reason stems from the lack of sufficient animal protein in the Egyptian food consumption pattern. The main feature of male nutrition in Egyptian diet is animal protein. The average per capita daily intake is about 20.5 grams, i.e. 22% of the daily gross protein (

Table **12**). The nutritional recommended allowance, suppose to be at least 35 grams (Soliman and Eid, 1995b). Such deficit in animal protein, on average level, supposes to be more severing among low-income categories of the population (El Asfahani. and Soliman, 1989). The main share of animal protein in the daily Egyptian diet is red meat, followed by fish, then poultry and at the end dairy products (

Table **12**). This pattern does not reflect the recommended pattern and/or the economic efficiency of resources use. The ranking of animal protein produce on base of the least cost net protein utilized of the Egyptian diet in ascending order is: Fish (from fish farming), Table Eggs, Milk (from dairy buffalo), broiler

meat and the highest cost is the protein of red meat (cattle and buffalo meat), (Soliman, 1994). As the percentage of nutritionally vulnerable groups in Egypt is high (children, elderly people, pregnant and Brest feeder women) red meat is not the recommended source of protein to them. In addition, red meat is a source of raising the unfavorable cholesterol rate in blood (Soliman and Shapouri, 1984). Therefore, towards a feasible nutrition plan in Egypt based on health allowance recommendation and matches the economic principal of comparative advantage, priorities of investment should be given to table eggs, milk production from dairy buffalo and fish farming.

Table 25 and Table 26 show the relationship between farm size holding and livestock holding size. The most important noticed result is that 12.15% and 17.3% of cattle and buffalo holders are landless. 75% of cattle and 89% of buffaloes are with farmers who are holding less than 5 hectares. About two thirds of cattle and buffalo holding of less than five heads are with farmers who are holding less than 4 hectares. This means that the smaller the farm size the smaller also is livestock herd size on farm. The farmer usually determines the livestock herd size according to the available land holding, as it, in turn, determines the possible area of green fodder (Berseem) with other subsistence crops, mainly, wheat

1-2-2-2 Livestock Production Systems

The major livestock production system is the traditional mixed agriculture farming system (buffaloes and native cows) which is characterized by very small herd size -typically just one or two animals (Soliman et al., 1982). Traditional mixed farms produce crops and livestock for both home consumption and sales. Livestock, under this system, is relatively intensive and concentrated on smaller, subsistence-oriented farms in the irrigated cropping region. This intensive village-based system predominates for cattle, buffalo, and small ruminants and produce 80 % of all beef, 90% of all milk and dairy products, and 70% of all mutton. Then, the success or failure of Egypt's livestock development program depends upon their ability to influence traditional smaller farmer's decisions on investment in livestock. The traditional system still accounts for an estimated 75 percent of total milk production (Mashhour, 1995).

The other principal production system is the commercial buffalo dairy herd. These units, up to mid of eighties were known commonly as "Zaraba herds" or "flying herds". They are located on the outskirts of major urban centers, such as Cairo and Alexandria. Normally, there is no breeding or production of replacement animals from within these herds themselves. Rather, lactating buffalo cows are purchased from outlying rural villages, and these animals are sold for slaughter once they have completed lactation.

Recently, another transaction system has been raised. The dairy buffalo operator replaces his buffalo cow during the year, through agents, in order to keep his milk supply stable over the entire year. The culled buffalo usually returns to traditional herd, where the breeding system is found. This system composes of, relatively, small commercial dairy herds. Herds of 15 to 30 animals are common, while somewhat larger herds also exist. Most feeds are purchased and consist of clover, crop residues from nearby farms as will as food processing wastes and feed concentrates purchased through private and government channels. These herds account for an estimated 11 percent of milk animals and 13 percent of milk production (Soliman; Mashhour, 2000).

The public sector had a minor role in domestic milk supply in eighties, i.e. (less than 1 percent). It has disappeared since nineties. The share of foreign cattle and crossbred cattle seems little. However, recently, there has been substantial expansion in foreign dairy cattle as private sector enterprising, including a few large herds of these breeds as commercial dairies (Mashhour, 2005).

The extensive Bedouin system provides 30% of all mutton, which is destined primarily for export. The intensive commercial dairy system operates large and medium scale farms that, with 30,000 to 40,000 Holstein cattle in production, contribute 10% of all milk and dairy products (Winrok International Institute for Agricultural Development, 1993).

1-2-2-3 Comparative Advantage of Egypt in Meat and Milk from Cattle and Buffalo

Livestock production and productivity indicators concerning Milk, Meat, Hides, and Skins are presented in (Table **20**). The productivity criteria are the producing animals as a percent of the total stock and the average yield per producing animal. Both were compared with the world average.

The milk production is mainly from dairy buffalo and cattle, i.e. 98%. Almost sheep and goat milk are devoted for rearing lambs and kids. Dairy buffalo in Egypt surpasses cattle in milk yield in comparison with the world average. Socio-economic studies have shown that Egypt has comparative advantage in milk production from dairy buffalo (Soliman, 2004 and Soliman, 2008). The percent of milking buffalo and cattle in the stock are higher than the world average

The main source of meat in Egypt is buffalo and cattle, (85% of the total meat production). The milk yield and carcass weight of buffalo surpass the world average, but both criteria of the Egyptian cattle are less than the world average.

The Egyptian consumer taste does not give mutton and lamb meat a high priority. Therefore, sheep and Goats meat are of minor important in domestic supply. Such types are mainly demanded during religion occasions along the year (Soliman, 1985). Hide and skin productivity is much less per head than the world average.

Soliman, (2008) used the "Nominal protection Coefficient" as an indicator to estimate the comparative advantage of Egypt in milk and meat production from buffalo and cattle.

The "Nominal protection Coefficient (NPC)" is estimated from the following equation:

$(NPC)_{ij} = Pij0/Pija$

Where:

$(NPC)_{ij}$ = The nominal protection coefficient of the commodity (i) produced by resource j

Pij0 = Farm Price of the commodity (i) produced by resource j in the domestic (0)

Pija = Farm Price of the commodity (i) produced by resource j in the alterative market (a)

Where in our model:

i = m for milk and r for red meat,

j = (b) for buffalo and (c) for cattle

The farm price is used as the closest one to the costs of production value. The data were extracted from (FAOSTAT internet-site), using the statistical database of FAO over the period 1990-2005. The domestic market is the Egyptian market and the alternative one that supposes to perform competitive conditions is the average world market. It is assumed that the aggregate average of the world market reflects the fair free competitive market conditions. Accordingly, the judgment on the Egyptian market is concluded from the result of the following criteria:

If $(NPC)_{ij} \leq 1$ ~ Egypt has a comparative advantage in producing Commodity i by livestock type j, other wise it has not such advantage.

If cattle and buffaloes under Egyptian market conditions have shown comparative advantage performance in producing both commodities (milk and meat), another indictor should be used to judge which type of livestock should have the first priority in food security plan, given the deficit in feed availability in Egypt. Such indicator is presented by the following equation:

If $(NPC)_{bj} / (NPC)_{cj} \leq 1$ ~ buffalo production of commodity j (milk or meat) is more economical in utilizing resources under Egyptian market conditions.

Investigation of the results of calculating the nominal protection coefficient for milk and meat production in Egypt by buffalo and cattle, (Table 21 and Table 22) showed that Egypt has apparent comparative advantage in milk production from both types of livestock, because the estimated (NPC) was less than one in all concerned years. However, the estimated (NPC) for milk and meat produced by buffalo

was less than that estimated for cattle in all investigated years (1990-2005). The estimated coefficient for buffaloes was not only less than that for cattle but it also decreased gradually over time at speeder rate than cattle. This result gives buffaloes more economic advantage in Egypt than cattle, along with further involvement of the Egyptian economy in free market system.In lights of what shown above about the implication of comparative advantage, the nominal protection coefficient for milk production by buffalo was less than the estimated one for meat, particularly from the year 1994 until 2005. The results, also, showed that the farm gate price of milk and meat from buffalo was less than the international market. However, it was much lesser for milk than meat. Therefore, the development plan should focus upon raising buffalo milk productivity, particularly that milk price projection, would reach 2.5 folds its current level due to speed demand increase and slow production growth, (soliman, 2008). Among the major targets towards raising milk productivity from the Egyptian buffaloes herd are the annual milk yield per milking head and the herd structure, particularly the proportion of milking herd in the stock. The same study showed that, although the proportion of the milking buffaloes in the total herd of Egypt was significantly higher than the world average along the last two decades, it has had a rate of decrease by about -0.6% a year. In addition, the optimum milking heads proportion in total herd structure should be 50%, (Soliman, 2004). Accordingly, as the percentage of milking buffaloes in the Egyptian stock reached 41% in the year 2009 (Table **20**), such percentage should be raised by 19% above its current level to approach 50%.

Therefore, if the development plan oriented the credit policies, veterinary care programs, and feeding plan towards reaching the target improvement of buffalo milk productivity, the total milk production of Egypt would raise by about 29%, as calculated from the following equation (Soliman, 2008):

$r_{mp} = r_{mb} + r_{my}$

Where:

r_{mp} = growth rate in national milk

production r_{mb} = growth in milking

buffaloes number

r_{my} = growth in milk yield

Such increase would raise the self-sufficiency ratio from domestic milk production and shrink the speed of its price increase. There would be not only positive economic impacts but there would also be social impacts on nutritionally vulnerable groups by raising per capita consumption, particularly in rural regions.

.1-2-3 Poultry Production Systems

Poultry are represented by two distinct systems These are traditional farmyards and commercial farms. The commercial, industrialized system has varying degrees of vertical integration, is a high technology industry geared towards domestic and export markets, represents a L.E. 30 billions capital investment, employs 2 million people, and produce 70% of both broiler output and table eggs (Farid, 2006). Poultry kept on small farms are of wide structure and typology. Chickens are kept mainly for eggs, while pigeons, ducks, turkeys, and gees, along with rabbits, provide meat for the household. Farmyard poultry flocks consist of small, domestic breeds that command a premium price for their meat and eggs. Growth of these farm flocks is limited by the availability of household food and crop residues as their major feed source. Commercial chicken production depends more on imported feeds and other inputs, a dependency that has spread to a lesser extent to production of ducks, geese, rabbits, and turkeys for the urban markets.

The following Tableau shows th profile of these main systemsA Profile of Poultry Production Systems in Egypt

Production Unit	Broilers	Table Eggs
Small farm village	Farmyard flocks, medium scale farms (27%)	Farmyard flocks, medium scale farms (30-40%)
Extensive Bedouin	N. A.	N. A.
Intensive commercial	Vertically integrated commercial producers (73%)	Commercial farms (65-70%)

Source: (1) Goueli, A.; Soliman, I., (1984) "Productive Efficiency of the broiler Industry in Egypt "Proceedings of 17th World's Poultry Congress and Exhibition, pp.653-655, the World Poultry Science Association, Held at Helsinki, Finland. (2) Goueli, A. Soliman, I., and Mashhour, A., (1988) "Economic Efficiency of Family- Farm Small Scale Enterprise for Table-Egg Production Versus Layer Scale Enterprise" Proceedings of 18th World's Poultry Congress and Exhibition, pp 1399-1401. Organized by World Poultry Science Association, Held at Nagoya, Japan. (3) Winrok International Institute for Agricultural Development, (1993) "Animal Protein Food System" The Government of The Arab Republic of Egypt and USAID, Project No. 263-0202, December 1993.

In 2005, the total number of broiler (Exotic "Commercial" and improved native "Baladi") herd was reported to be 25,935 with an estimated annual production potential of 962 million broilers. The actual number of operative herd in 2005 was 20,512 i.e. only 80% of the total number while the actual production was 415 million birds, i.e. 43% of total potential production capacity. The total number of commercial laying hens in 2005 was 2,839 millions with an annual production potential capacity of 6.6 billion eggs. The

actual operative number of laying hens was 2,075 millions in 2005, i.e. 73% of the total volume, which produced 2.5 billion eggs, i.e. 38% of their total production potential (El Nagar, 2007).

The Poultry food products are meat and table eggs. Egypt through expanded private sector investments in both broiler and commercial hen egg industries over three decades has almost reached self-sufficiency in both products, (Table 11). Productivity of laying hens surpassed world average by 40%, while it is below the world average by 10% to 20% with respect to broiler, (Table 23). Higher mortality rate and less fed efficiency below the international norms were behind such lower productivity of broiler productivity (Goueili and Soliman, 1984).

1-3 Agricultural sector Structure

1.3.1 Farm Structure

In general, the Egyptian farming system has two major features. It is so intensive in production and too fragmented in farm size pattern. The first Egyptian law of land reform was released in September 1953. It limited the land holding by 84 hectares for a family (parents and children less than 21 years old) and by 41 hectares for a single person. The second law was in 1969, which reallocated the land holding size to be one-half of the first law limits, i.e. 4o hectares per family holder and 20 hectares per a single holder. Between the two law eras there were other presidential decrees package named nationalization decrees in 1961 that put all companies and firms under the state management including the agricultural sector. The land market was completely liberalized in 1997 when the land reform law was cancelled, which had dramatic impacts on the land holding pattern.

Table **27** and

Table **28** preset the relative frequency distribution of the agricultural land holding in Egypt over the period before the July 1952's Egyptian Revolution till the year 2000, which covered all structural changes in the land holding policy in Egypt. Unfortunately, no recent data on farm structure is available beyond 2000.

Estimates of Ginny Coefficient and drawing Lorenz Curve are two parameters for assessment of the

equality and Justice of wealth and resources in an economy. Gini coefficient provides a useful language to show the principal factors that characterize equality and inequality for nation states and communities inside states. When focusing on social equity, the Gini coefficient provides a useful guide (Litchfield A, 1999). As percentage, Gini coefficient ranges between Zero, which means full equality of the probability distribution of the concerned variable and 100%, i.e. full inequality (Lui, Hon-kwong, 1997). Therefore, Gini coefficient was estimated by this study for the frequency distribution of farm holdings of agricultural land in Egypt over the period (before 1992 till 2000)

Investigation ofTable **27** andTable **28** showed that the Gini Coefficient was about 61.1% before the first land reform law (during the royal era of Egypt. After the first land holding law the Gini coefficient decreased to 49.4%, i.e. had moved towards more equality. After the nationalization decrees in 19961, the Gini coefficient had decreased more to be 43.3%, due to the absence of economic incentives to establish a large farm and due to the stagnation in the land market. The absence of incentives was due to several reasons. Among those reasons that the land reform law prevented the owners from taken the land from the land tenants, once they were paying regularly the rent. However, the rent was fixed and too low, only 7 times the land tax, which was in itself very low 7-10 US$ per hectare. By definition, the Gini coefficient had decreased more to40.3% by the second land reform law in 1969. It should be mentioned, that the less is the Gini coefficient the more is the fragmentation in the land holding size, rather than, more equality. In the year 2000, i.e. three years after liberalization of land market and cancelling the land ownership limitation as well as freeing the land rent and leave it to the market mechanism have raised the Gini coefficient slightly to bearound 45%. However, if recent data were available after two decades of such dramatic changes in 1997, the lad holding pattern would be much different towards higher centralization of larger farm size. (Figure 1) shows the changes in the curvature of Lorenz curve of the agricultural land holdings distribution over the concerned periods.

1.3.2 Agricultural Labor

The total population of Egypt surpassed 82 million inhabitants in 2009, (Table 4) of which about 27 millions are economically active, i.e. around on third, (Table **30**). While the agricultural male labor was round 10% of the labor force the non-agricultural male labor was 59% in 2009 (Table **30**). In addition, the share of female agricultural labor was 10% of the total labor force. The non- agricultural female share in labor force was 15%. The major reasons behind such shrinkage in agricultural labor share in the economically active population are the decrease in the agricultural male labor by 0.4% a year over the period of Economic reform Era (1986-2009) while the non-agricultural male labor increased over the same period by 3.4%. Even though the female labor's share increased at a positive annual rate of 0.6%, the non-agricultural female labor expanded fast at annual growth rate of 6%. The expansion in mechanization system in agricultural production of Egypt over the last three decades was a main reason, as shown in the coming section, (Figure **2** and Figure 4). In addition, the market cannot afforded a satisfactory opportunity income from agricultural labor to rural population (Soliman and Owaida, 1997), as will be explained in the following section. Finally, the deepness of the poverty gap between rural and urban has been enlarged over the last three decades as was shown under the previous section on socioeconomic aspects of the agro-food system

1.3.3 Input Usage & Machinery

Evidences of agricultural human labor substitution for machinery labor are apparent from data of (Table **31**), (), (Figure 3) and (Figure 4). The density of human labor decreased from 3325 hours per hectare in 1986 to 3018 hours per hectare in 2008. Associated with human labor's density decrease the density of machinery labor increased from one tractor serving 49 hectares in 1986 to one tractor serving 34 hectares in 2008. The density of the mechanized harvesting system might show false conclusion, without explaining the reality of the apparent density. (Figure 4) and (Table **31**) show, falsely that the density of harvesters on agricultural was decreasing as the number

of hectares served by a machinery harvesting system was increasing over the period 1986-2008. In fact, the mechanical harvesting system in Egypt has shifted from three equipments (Harvester, threshing machine, and tractor) to only a one combine doing harvesting threshing and even transporting the yield to the farmer's storage (silo) by his house. Thereof, since mid of nineties the efficiency of harvesting farm operation has been drastically raised, as one combine becomes able to serve larger area of wheat and rice per day, (Soliman, 1997).

Beyond, human labor and machinery, farming system use intensively fertilizers, particularly in an intensive agricultural system as the Egyptian pattern. Even though the common three types of fertilizers Nitrogen, Phosphorus, and Potassium nutrients are used in the Egyptian soli, the most important one is nitrogen fertilizers, followed by phosphorus fertilizers. The density of application of these two types are presented in (Table **32**) and (**Figure 5**). The importance of the three types is concluded from comparing the density of use of each of them as effective nutrient. While nitrogen fertilizers density ranged between 222-486 kilograms per hectare per year, the phosphorus ones ranged between 39-75 kilograms per hectare per year and the potash 9-20 kilos. There was high fluctuation in the applied quantity per hectare over the period (19986-2008). Such fluctuation reflects, probably, changes in the price policies due to changes in the economic regime. In addition the intensification in cropping pattern and deterioration soli fertility due to not only, intensive cultivation but also due to raising of water table associated with poor drainage have played roles in this concern (Goulili, Soliman and Rizk, 1988). Such issue needs a further extensive study of the input- output relations with price policy analysis**.**

1-4 Agro-Food Industry

Food processed products chemical fertilizers are among the most important outputs of industrial sector in Egypt (MALR, 2010)

1-4-1 Description and Importance

The agro-Food industries in Egypt accounted for around 20% of GDP. On the other hand, agro-food enterprises employed a workforce of 500,000 people, i.e. 22.8% of the workforce of the Egyptian industry.

1-4-2 Main Products

The main sub- sectors, classified by value added, are sugar, oil and fats and mill products, accounting for around 86% of the total value added of the agro-food industry (African Development Bank, 2007). (Table 33) shows the food processing subsector has experienced significant growth (around 20% per year on average), fuelled by both a growing domestic (and tourism) consumer market and exports. The subsector's main activities are basically fruit processing (juices, jams, marmalades, confectioneries), frozen vegetables, cereals and biscuits for both domestic and export markets. Other products such as oil, flour, sugar, non-alcoholic and alcoholic beverages, dairy products and ice cream are more focused on the domestic markets (Selim, 2009).

1-4-3. Structure and Typology of the Food Industry

The structure and typology of agro-food industry in Egypt can be assessed based upon the processed proportion versus non-processed of each food item. (Table 34) shows the proportion of each food item utilized in processing industries as well as the proportion utilized under other industries. Obviously, the rest is devoted for non-processing use (say fresh or raw). The highest proportion processed was from sugar crops under refining industry and oil crops for food oil and meal extraction. Barley comes at the third rank as a raw material for beer processing. Examples of other industries is more than 10% of maize supply is used for starch and glucose sugar extracted from maize.

1-4-4 Investment

Number of Companies involved in Food Processing Industry in Egypt surpassed 84. While the initial issued capital has reached 2806 million Egyptian pounds, the aggregate investments have reached around 5026 million Egyptian pounds, (Table 35). Whereas, the Egyptian investors share in such investments reached 72%, the partners from Arab countries share has approached 25%. The rest, i.e. around 3% was from the rest of the world.

1-4-5 Agro-Food Trade Flows

(Table 36), shows that Cheese from whole cow milk represents the highest share in total value of agro-food industry exports from Egypt, i.e. are around 25%, in 2009. Molasses came at the second rank. It is extracted from sugar cane refining industry, i.e. around 20% of the total agro-food processing in 2009. Such total was about 213.3 million dollars. Frozen potatoes occupied the third rank with a share in the total value of agro-food commodities exported in 2009. Its share was 15%

2 CURRENT AGRICULTURAL AND FOOD POLICIES

2-1 Short Retrospective View of Egyptian Agricultural Policies

The period 1965-1986 was the Era of the Egyptian Government interventions in the agricultural sector. The control of crop area and install of the producers' price and compulsory purchase of the major crops were the policy instruments used. Thereafter, Egypt has practiced a package of economic policies, known as structural adjustment program (SAP). The program has applied earlier on the agricultural sector, since 1986/1987, compared with other sectors in Egyptian economy, when the Ministry of Agriculture and Land Reclamation (MALR) started to eliminate taxes and subsidies in agriculture products and selling the public agricultural companies. Structural adjustment program, started, empirically, 1990/1991, a financial year, aimed to improve the conditions of the supply structure on base of the comparative advantage principles, to correct distortions in economic policies, development of the local resources, and promote institutional transformation to reduce vulnerability to external shocks in the future (Hazell, et al, 1995).

Since 1991/1992, the Government of Egypt (GOVEG) has applied the reform policies on all sectors in the Egyptian Economy. The main structural changes were liberalization of both monetary and financial markets. Therefore, it liberated both interest and exchange rates. Investment structure has shifted to the private sector. Currently, the private sector share in Egyptian investment surpassed 70%. Those policy instruments were associated with privatization mechanisms of public firms. All those amendments have impacts on the resources use, the food supply, and unemployment and not only income growth, but also on its distribution (Mohammed, 2000).

The SAP application in the agricultural sector composed of five instruments. These are:

(1) Remove the farm price control,

(2) Eliminating restrictions on crop area,

(3) Cancellation of Government control in purchasing crops,

(4) Phasing out the subsidies on agricultural production inputs,

(5) Cancelling the Government deregulation, this prevented the entry of private sector in processing and marketing of agricultural products and agricultural production inputs (Hazell, et al, 1995).

The agricultural policy amendments can be classified under two dimensions. First, the policies geared to supply-side. Second, the policies directed to the demand-side.

The first package of reforms concerning the Policies Geared to agricultural supply was implemented during the period (1987-1994). Headed the State has oriented the application of the policy of economic liberalization to transition from central planning to indicative planning based on incentives. In this context,

the ministry of agriculture developed so-called benchmark-cropping pattern, as a main production-policy, which take into account to secure the national needs of strategic crops, achieve market stability, water conservation, and limiting the expansion in water-consuming crops (rice and sugar cane). Such policy made agricultural land use (cropping pattern) and agricultural rotation to be determined by farmers' decisions, except rice area, which has limited by a border of 1.2 million acres. The farmer who cultivates rice in a region not allowed for such crop pays a heavy fine. Whereas, other cereals, legumes, vegetables, fruits and fodders; area stayed unrestricted, barriers were induced to shrink the area under Egyptian cotton.

Up to 1986, there were two exchange rates for the local currency (Egyptian Pound, EGP). First official exchange rate equaled 1.43 USD/EGP and a free market exchange rate, which equaled US $ 0.47/EGP. The official exchange rate applied on all exports of cotton and rice, but did not apply to other crops. While half exports of crops, rather than cotton and rice, applied the official price, the other half applied the free market price. This excessive exchange rate levels resulted in low producer prices. Accordingly, there were indirect taxes on agricultural exports, which was equivalent to a taxed export price policy. In 1990, the official exchange rate was reduced to US$ 0.5/EGP, while the exchange rate fell in the free market to US$ 0.34 /EGP. In 1991, there was a common exchange rate and the market exchange rate was US$ 0.30 /EGP (The World Bank, 2010). However, GOVEG has continued subsidizing the various food products, most notably bread, sugar, and oil, for low-income groups.

. Agricultural development efforts have experienced major changes since 1980 in the different fields of agricultural production, due to expansion of agricultural areas, and improving productivity. These efforts have led to the increase of the agricultural land from 2.5 million hectares in 1980 to approximately 3.7 million Hectares in 2007, as well as increasing cropped area from some 4.4 million Hectares in 1980 to 6.4 million Hectares in 2007. The horizontal and vertical improvement in cultivated area and crop productivity, achieved an average annual growth rate in agriculture of 3-4%. However, such achievements faced notable increase in population associated with expansion in their needs due to economic growth, (MALR, 1982), (MALR, 1991).

The core of Policies directed to the demand-side was the consumer's price subsidy and distribution of some subsistence food items though rational cards. Therefore, such policies profile was presented under the section of price and income support policies

2-2 Objectives of the Agro-Food Policies

MALR has committed with the following objectives to achieve developed sustainable Egyptian agriculture system (MALR, 2009):

1 Sustainable use of natural agricultural resources;

2 Increasing the productivity of both the land and water units;

3 Raising the degree of food security of the strategic food commodities;

4 Increasing the competitiveness of agricultural products in local and international markets;

5 Improving the climate for agricultural investment;

6 Improving the standards of living and reducing poverty rates in the rural area

2-3 Price and Income support Policies

The price and income support policies in Egypt are classified as follows for the analytical purposes: (a) Producers' price support policy(b) Consumer Price Subsidy Policy, (c) Share of Food and Agricultural sector in the Total Subsidies Structure.

2-3-1 Producer's Price Support Policy

SAP eliminated the compulsory quotas delivery of major field crops. Such policy was replaced by an optional delivery system for all crops, except sugar cane. The sugar cane should be delivered to domestic

refineries at a price determined by GOVEG. Such price is usually above the international price (Soliman, et al, 1994). In addition, the Government has established a grantee price policy for major subsistence crops, wheat and rice, (usually at a level above the international market), with optional delivery of the production to government milling plants and/or agricultural cooperatives, (Soliman and Gaber, 1997) and (Soliman, et al, 1997). The objective was to encourage farmers to deliver their wheat for being processed as subsidized common bread and to raise the wheat self-sufficiency as basic strategic crop. This policy has lead to decrease the Berseem area from one third to less than one-fifth of agricultural area in Egypt for wheat and sugar beat area (Soliman et al, 1997)

.Financial assistance to the sector is provided in the form of subsidized price of water, (Soliman, Ibrahim, 2002), the latter being provided almost free of charge to farmers. The price subsidy policy was kept valid for diesel fuel used for agricultural machinery operations (Soliman and Owaida, 1998), cottonseeds, and cotton protection operation (Soliman, Owaida, 2005). The national program to increase productivity of sugar cane was applied free of charge and funded entirely by a governmental institution called the national sugar cane Council

2-3-2 Consumer's Price Subsidy Policy

The Government has continued subsidizing the consumer price of various food products since fifty years ago. Such policy focused upon most notably bread besides and quotas of other subsistence food items (sugar, vegetal oil; rice and pasta). Bread represents more than one third of calories per capita intake in the Egyptian diet and almost 60% of wheat consumption (Soliman and Shapouri, 1984). Subsidized common bread (83%extracted wheat flower) is delivered to the market at almost 70% subsidy in the price (Called baladi bread). Currently Egypt imports more than 55% of wheat required for such bread and the rest is from delivered domestic wheat to milling plants and/or agricultural cooperatives, at grantee price. Mill plants (mainly private) deliver the flower at subsidized price to bakeries (entirely private) to produce such bread at the subsidized price (Soliman, et al, 1997). Such policy is facing currently, many arguments. Among those are different types of the seepages of subsidy value. Such seepages stem mainly from using considerable amount (Soliman and Abdul Zaher, 1984) of this bread type for livestock feeding, particularly the commercial dairy farms around big cities. The subsidized low price flower is also Leaked to other processing purposes, rather than being backed as "baladi" bread. The seepage of such subsidized price bread expands to being smuggled, illegally, to the popular take away food shops and small restaurants and other not target categories. The big argument is that undeserved categories of the population (relatively high-income classes) buy such low price bread. Finally, it is sometimes a source of troubles when reaching such bread is difficult at times of shortage in the distribution centers. Troubles also raise between people and government due to low quality of this bread and/or sell it at less weight than the allowance (Asfahani. and Soliman, 1989) and (Soliman and Eid, 1992**)**

The rational card program concerns delivering monthly quotas to low-income households. Vegetal oil, sugar, and rice are food items provided to the consumer at quota system and recently pasta has been added. There are two levels of quota and subsidy. The First is the highly subsidized price of some food commodities, called supply commodities. The second is the less level of price subsidy for additional quota of food commodities. The purchase of this additional quota of partial subsidized price is voluntary, but both quotas are distributed through the rational card on per capita base of the household.

Currently, the ministry of the social security is responsible for such program. About 70% of Egyptian population (62 millions) enjoins such program of direct subsidy. However, there is a debate about the effectiveness of such policy. The drawbacks of the subsidy in kind are the seepages of the low price food items to what is called the black market. In addition, the consumers complain about the quality of delivered

quota. It is postulated that the government intend to purchase or import low quality of such commodities to keep the costs of subsidy at the lowest level. Another source of argument is the undeserved households registered in the program, as their level of income is above the poverty line (Soliman and Eid, 1995).

Even though 25% of the urban houses has connections of natural gas network, the bulk is still relay on the Butane-Gas pressed in standard containers for house use. This fuel type is vitally imported. It is available for the consumers at highly subsidized price. The government postulates that the subsidy of this price surpasses 80 %. Government imports it but the private sector, through contracts, distributes it to the consumers. (National Specialize Councils, 2006).

The arguments around consumer subsidy policies in Egypt have lead to a proposed alternative, which is issuing an electronic Card for each household deserves subsidy to use it for getting the subsidy allowance under this proposed program. Such alternative program is under experimental stage in one or two governorates in Egypt. Another alternative has been raised. It postulates that cash allowance is more effective substitute for subsidy in kind or via an electronic card (National Specialize Councils, 2006).

2-3-3 Share of Agro-Food sector in the Total Subsidies Structure

The total share of grants and social benefits in the subsidies structure is less than 20%, while the rest is the share of direct consumer's price subsidy, i.e. more than 80%, (Table 37, and Table 38).

Social benefits include social insurance pension, child pension, and contributions of the government budget in the pension fund. Other price subsidy types, beyond food and petroleum products, are electricity, exports promotion, Upper Egypt development program, industrial zones, medicines and infant milk prices, student health insurance, passenger transport, loans interest to poor households, low-income group housing, water companies, railways, training and internal trade infrastructure. The share of these other types of subsidies is only 16%.

The bulk of food subsidy is bread subsidy. It acquires 73% of total supply commodity subsidy. The difference between the imported wheat price and the subsidized price, delivered to the mill plants, is the value of subsidy per ton. However, the subsidy value per ton of domestic wheat delivered for backing the "Baladi Bread" is higher than the comparable imported quantity. This additional subsidy stems from the policy of paying a grantee price to the farmers, which is often, higher than the international market price. The difference is considered as an incentive to the farmers, not only for delivering their production to produce the subsidized flower, but also to gear them to cultivate more wheat area. The ultimate goal is raising the self-sufficiency rate of wheat. Recently, a new policy has been implemented to lower the entire reliance upon wheat flower in making the subsidized bread. Such policy mix maize flower with wheat flower at a ratio (1:4). The price of maize delivered to such process is also subsidized (Soliman and Gaber, 1997).

From the same set of tables, it is noticed that petroleum products represent the highest share in total direct and indirect subsidies in Egypt. It reaches around 46%, while food commodities supply price subsidy, devoted to consumers is around 19%. The subsidies left to the farmers, after liberalization of the market is less than 1% of the total subsidies in Egyptian economy. The farmer subsidy almost covers the expenditure of cotton protection operations on farm and sugar cane development program.

Solar price is the main petroleum product-enjoying subsidy. Its subsidy volume reaches more than 52% of all petroleum products subsidy, (Table 39). Raising its price affects much the performance of the economy, as it is the source of energy for operating the transportation means, either for commodities or passengers, generating electricity, operations of many industries and for agricultural machinery. Butane share in subsidies is 23% and it is the main energy source for cooking, and heating in houses. Restaurants also use Butane for preparing eating out meals, in addition to poultry farms heating. Therefore, the impacts

of phasing out solar and butane subsidy are wide spread in the Egyptian economy.

2-4 Input Use Policies

The Economic reform program in agriculture sector has not limited within liberalization of the market mechanism and privatization. it was associated with introduction and expansion of three packages of technologies

(1) The biological package, mainly introducing high yield varieties of the main subsistent crops, such as rice and wheat,

(2) The physical package, mainly expansion of agricultural machinery with introducing new systems such as combine harvesting system and leveling the soil using laser system, (Soliman, et al, 1994) and

(3) The chemical technology, which is mainly, applied intensification of chemical fertilizers, to such intensive agricultural system, (Soliman, 1992).

Even though the private sector has conferred full opportunities to trade and to deal with marketing of these three packages of technology, the agricultural cooperatives and the governmental machinery stations have stayed as important outlets that provide these inputs at prices moderately less than free market price (partially subsidized). The principal agricultural credit Bank activities were transformed towards commercial finance bank functions. When the importation and trading of agricultural requisites were privatized, the market performance has had negative impacts on small farmers, (Soliman, et al, 2003). That experience led GOVEG to intervene again through agricultural credit Bank and cooperatives in those markets. A quota per acre of agricultural requisites have being distributed through the outlets of the principal agricultural credit Bank branches and the common credit agricultural cooperatives in the villages, at a maximum 50% of inputs international prices (Soliman, et al, 2010a).

Table **29**, shows the impact of such policies on the productivity of these inputs derived from production function estimates made on rice farms in the same region by comparing productivity in 1986 (year of the onset of the economic reform application on agricultural sector) and lately in nineties of the twentieths century (in the year1997). Productivity estimated as the production elasticity coefficients. Apparently, the productivity of machinery labor has relatively increased as well as the fertilizers at the expenses of both human and animal labor. The interaction between higher yield rice variety and both machinery and fertilizers was positive at the expenses of human labor. The later diminished to great extent. Unfortunately, this issue was not associated with an effective integrated rural development program that might offer alternative jobs for the excess of human labor taken left agricultural activities. Such evidence supports the abundant increase in non-agricultural population of Egypt shown earlier in this study under human labor performances.

The production and trade of the seeds of the high yield varieties have left completely for the private sector at the market price without any subsidy. Only the ministry of agriculture provides the technical supervision and support. The agricultural research centers or the centers of seeds screening are allowed to sell the seeds at the market price. The commercial package is a sac contains 30 kilograms. In 2010, the seed prices of the main crops were US$ 18-20 per "sac" for wheat, US$ 280 per sac for rice, however the rice seeds sac I 25-30 kilograms. For hybrid maize the price varies by the variety, as the commercial unit is a sac weighing 12 kilograms, the price ranges between US$ 15-25 (Unpublished data from the Ministry of Agriculture, 2010).

As the nitrogen fertilizers are the major chemical fertilizers in the Egyptian agricultural system, there is still governmental intervention in its market mechanism. The two main commercial nitrogen fertilizer products are the Urea (46.5% Nitrogen) and Nitrate (33.5% Nitrogen). The agricultural cooperatives distribute quotas of these two types of fertilizers at partially subsidized price of US$ 14 per sac (50 Kg) while the free market price was US$ 17.5 in 2010. The quota is associated with the land holding card

registered in the cooperative. Phosphate and Potassium fertilizers are distributed at free market price, (MALR, 2010).

2-5 Rural Development Policies

A main target of the sixth development plan (2007-2012) is "the National Project for Targeting Needy Rural Households". It is conducted through the Ministry of Social Solidarity. It is a national project in order to target more accurately the most vulnerable households within poor areas. This project was launched during 2008. The Ministry has set itself the following goals:

(1) Determining the neediest households with regard to social welfare;

(2) Identifying the needs of households, which are eligible for care and support,

(3) Monitoring the appropriateness of services provided by the State to meet actual needs;

(4) Establishing a database of the neediest households with regard to social welfare;

(5) Developing social welfare programs that suits the needs of households, (UNDP, 2008)

This project is based on two main types of interventions, which are geographic and qualitative targeting, in an effort to reach the neediest households. The qualitative targeting was achieved through the design of a standard digital socioeconomic model (one model for rural areas and a second for urban areas)

to identify and classify the levels of need of households. The implementation of this model depends on preparing a detailed and comprehensive map of each household condition (through social field research) and preparing a file for each household, which determines the human and financial capacity of the households besides their livelihood needs. The measures rely on 37 of economic and social indicators of the household. Each one reflects one or more of the economic and social dimensions related to poverty and the standard of living.

The National Project for Targeting Needy Rural Households has relied upon "the Poverty Assessment Report in Egypt" issued in mid-2007 by the Ministry of Economic Development, in collaboration with the World Bank, (Ministry of Economic Development, 2007). It provided detailed information about the determinants behind the low standard of living and high rate of poverty, in addition to related indicators at the smallest administrative local unit (village and district). The map can help combat poverty and raise the efficiency of public expenditure through the accurate targeting of poor areas and by identifying their actual needs as well as reducing the leakage of benefits to the non-poor.

According to the poverty map the number of poorest villages has reached 1141, spread over ten governorates (Menia, Suhag, Asyut, Qena, Sharkia, Behera, sixth of October, Helwan, Beni Suef and Aswan. The total population of the poorest villages in Egypt reached about 11.8 million people. More than 1.1 million poor households live in these villages with 5.3 million poor people, representing about 45% of the population there (Table 40). The villages, out of Egypt's total number of 4,700 villages, account for as much as 54% of the total number of rural poor in Egypt. This is largely a result of the unequal distribution of public goods including physical infrastructure (water, sanitation and roads) as well as public services, namely education and health facilities. According to SYPE (2010), whereas rural youth account for 59% of Egypt's total youth, they account for 85% of Egypt's poor youth. Therefore, that being poor is very much a characteristic of residing in rural Egypt and thus having less access to public goods and services. Lack of access to schooling in turn becomes a major determinant of low quality work opportunities throughout life and thus the poverty cycle reproduces itself (Smith, C., and Rees, G., (2003)

2-5-1 the Institutional Framework of the Rural Development

Since the completion of the Poverty Assessment Report in 2007, the Government of Egypt has been working on a development plan that aims at implementation of the 'National Project to reduce poverty in more than one thousand poorest villages (UNDP, 2010). A ministerial group for social development was

formed in 2007. It included the Ministers of Housing, Utilities and Urban Development, Environment Affairs, Social Solidarity, Education, Higher Education, Health, Transport, Local Development, and the Secretary of the Social Fund for Development. The group aimed at coordinating the design and implementation of the projects between different ministries whose missions are to upgrade service delivery in the villages covered by the project. Moreover, new partners were added to this group in 2009, namely the Ministry of Family and Population, the National Youth Council, the National Sports Council, the General Authority for Literacy and Adult Education, and the National Post Authority. The philosophy of geographic targeting was to given the strong relationship between public services and poverty, the approach is to break the vicious cycle of poverty by removing those poor infrastructure conditions that perpetuate it.

2-5-2 Implementation of the Integrated Rural development

For Geographic targeting, finance availability, accessibility, and adequacy it is planned to implement this national large expanded project in three phases. Each phase lasts 3 years. They are: (a) 151 villages and 750 surrounding Hamlets (small communities) in 6 Governorates. These villages include nearly 1.5 million people and are located in 24 local units (between 3 to 5 villages in each local unit). The implementation of the first phase of the project started in October 2008, to be completed within two years starting from the financial year 2009/2010. The executive position of various ministries and agencies showed that the implementation of several projects in various domains has been completed during this phase. However, the problem of land allocation in the targeted villages is still the main obstacle to the implementation of various projects during this phase, (UNDP, 2008), (b) 912 villages in Additional 4 Governorates. Each village includes the hamlets) as satellites of a mother (large) village. (c) 78 villages in Another 4 Governorates, the implementation of this phase will begin within one year of the start of implementation of the second phase.

2-5-3 Rural Development Funds, time schedule and Limitations

Overall, success or failure in applying programs for the 1000+ poorest villages in Egypt will rest on the ability of all parties to sustain the financial requirements necessary for this huge and ambitious project in all its phases. It will also require a high degree of coordination amongst all ministries and government bodies involved. The estimated cost of the project during the first phase amounts to about billion Egyptian pounds). To be funded from the allocations provided form the state investment budget. It is distributed over the involved ministries.. The Ministry of Housing alone holds nearly 68% of the total estimated cost for this phase. The allocations for governorates amount to 690 million US$. This is besides an additional amount of 64 million US$ which includes 29 million US$ to cover drains and 37 million US$ as the cost of buying land distributed over the governorates (Soliman and Gaber, 2010).

.2-6 Agro-Environmental Polices

The Egyptian Agro-Environmental policies are presented in this section through two dimensions; (1) The Institutional framework and (2) Objectives and Instruments.

2-61 The Institutional Frame work

In June 1997, the responsibility of Egypt's first full time Minister of State for Environmental Affairs was assigned as stated in the Presidential Decree no.275/1997. From thereon, the new ministry has focused, in close collaboration with the national and international development partners, on defining environmental policies, setting priorities and implementing initiatives within a context of sustainable development. The Environment protection law no 4/ released in 1994 was restructured the Egyptian Environmental Affairs Agency (EEAA) with the new mandate to substitute the institution initially established in 1982. At the central level, EEAA represents the executive arm of the Ministry. The

Environment Protection Law no 4 issued in 1994, has a greater role with respect to all governmental sectors as a whole. The law has been designated as the highest coordinating body in the field of the environment that will formulate the general policy and prepare the necessary plans for the protection and promotion of the environment. It is also, follow-up the implementation of such plans with competent administrative authorities. The Environmental Protection Law has defined the responsibilities of the agency in terms of the following:

1- Preparation of draft legislation and decrees pertinent to environmental management,

2- Collection of data both nationally and internationally on the state of the environment,

3- Preparation of periodical reports and studies on the state of the environment,

4- Formulation of the national plan and its projects,

5- Preparation of environmental profiles for new and urban areas, and setting of standards to be used in planning for their development

6- Preparation of an annual report on the state of the environment to the President

.According to the environmental Law 4/1994, the mandate of the Egyptian Environmental Affairs Agency (EEAA) is to protect and promote the environment. It is established within the cabinet premier ship. The agency has a public juridical personality. It is affiliated to the component minster of Environmental Affairs with independent budget. It has several branches in the Governorates of Egypt. EEAA formulates the

general policy and lays down the necessary plans for protecting and promoting the environment. It follows up the implementation of such plans in coordination with the competent administrative authorities. It also has the authority to implement some pilot projects. The agency is responsible for strengthening environmental relations between Egypt and other countries and regional and international organizations. It recommends taking the necessary legal procedures to adhere to regional and international; conventions related to the environment and prepare the necessary draft laws and decrees required for the implementation of such conventions

2.6.2 Objectives and Instruments

The National Egyptian Environmental Protection Policies (MESA, 2010) aiming at natural resources conservation, protection of Air, water and soil quality. The policies are implemented through packages of programs and projects. Each program consists of three major components: information and monitoring; preventive and/or corrective measures; and supportive measures. Most of the information and monitoring activities are that of the Egyptian Environmental Affairs Agency. Some supportive measures, such as awareness and capacity building is also the responsibility of the Egyptian Environmental Affairs Agency Most of the corrective and preventive measures are that of central and local agencies to include in their plans the issue of protecting the environment. For example, combating desertification is central to the activities of Ministry of Agriculture and Land Reclamation (MALR); while protecting the Nile, canals, drains are that of Ministry of Water Resources and Irrigation (MWRI). The Egyptian Environmental Affairs Agency plays its role as a coordinating body that implements demonstrative pilot projects as prescribed by Law 4/1994.

1. Water Resources: The Government of Egypt, through the Ministry of Water Resources and Irrigation (MWRI), is updating a water master plan and initiating a special program for managing water demand. MWRI has embarked on implementing another program for managing water quality. Protecting the coastal waters and shores are also included in the NEAP capitalizing on previous efforts in that area. The working group on the water issue emphasized the need to reform the production and delivery of drinking water as well as executing planned activities to manage wastewater through specialized central authorities and local administrations. However, the working group argued for measures to manage the demand through charging the consumers for recovering the costs of delivering drinking water and

encouraging the conservation activities.

2. Air: EEAA has begun the development of National Strategy for Air Quality

Management to include executable plans, such as relocating small and micro industrial enterprises outside human settlements, programs for cleaner production techniques and energy conservation.

3. Land: (a) Agriculture: sound environmental agricultural development and management of rural settlements is a program that coincides with the plans and efforts of the Ministry of Agriculture and Land Reclamation (MALR), Ministry of Housing, Utilities and Urban Communities (MHUUC), and the Integrated Rural Development Program (Sherouk) that the Ministry of Local Development (MLD) executes. Through these central agencies GOE is implementing plans for sustainable land uses that encourage planning on a scale large enough to maintain the health of regional ecosystems. The implemented plans would also minimize food loses, employ biological control, host-plant resistance as means to reduce costs and conserve the environment. The achievements of "Sherouk- Project" in reconstructing and developing the Egyptian villages are: the outcome of participatory decision-making and building partnerships with local stakeholders to own the process and output.

4 Human settlements: the Government is encouraging the development of new cities, and secondary cities with desert frontiers, Allocating investments to develop new industrial estates and direct the development of these medium-size cities will create employment and housing, thus attracting new comers away from major metropolitan areas. Concerning the desertification, three Nationa Action Programs (NAPs) are included in the NEAP. The first is for the North Coastal Belts, the second is for Nile Valley and the reclaimed desert areas that share infrastructures with the land of old valley; and finally yet importantly, is for the oases and Southern remote desert areas. Each proposed NAP fits and suits the ecological conditions and addresses factors that trigger the desertification processes and their social and economic outcomes.

5. Marine Environment: the Ministry of Tourism is among the major institutions concerned with protecting the marine environment when planning and developing the country’s tourism industry. NEAP includes a program for managing national marine coastal zones. The main objectives of this program include establishing a dynamic process for national comprehensive coastal zoning (land and sea), and achieving Sustainable use of marine and coastal resources through a combination of scientific research, appropriate quotas and regulations, active monitoring and enforcement, and pilot projects allowing use of certain resources by local citizens. The responsibility of conserving Egypt's marine life lies mainly with the EEAA, which is responsible for setting the general environmental policy and formulating legislation standards and guidelines to protect the environment as well as having the authority to initiate national coastal zone management activities.

6. Waste: the MESA and the EEAA have formulated a policy for the proper management of waste in Egypt and this policy is currently under implementation. The National Municipal Solid Waste Program, which the Governor’s council that the Prime Minster heads approved in December 2000, presents an integrated management system to be implemented at the national level. User charges for solid waste collection and disposal are among the supportive measures adopted by the EEAA.

7. Biological Diversity: EEAA has adopted and implemented various measures and programs to meet the challenges of biodiversity in Egypt. EEAA is currently developing programs and measures to support Egypt’s declared natural protectorates, which cover about 8.5 percent of the area of the country. In Collaboration with various international donors, GOE is implementing projects to conserve biodiversity, including conserving the wetland and the environmental systems along the Mediterranean shores and a program for conserving Gulf of Aqaba protectorates.

8. Bio-safety: in this issue, safety is achieved through the provision of transparent information on the product and the process, and conducting adequate risk assessment and risk management by the

regulatory authorities in the receiving environment. The NEAP includes a program for regulating the handling and Unintentional release of biological material. It also includes a program for regulating intentional release of Genetically Modified Organisms (GMOs) in the environment.

The national environmental plan acknowledges the environmental effects on some social classes more directly than others, either because of their nature, ages, social and cultural aspects, or their direct relation with environmental problems. NEAP includes programs catered for six of these categories: children, youth, women, the elderly, physically disabled and marginalized people that both NGOs and governmental agencies can implement.

2-7 Infrastructure Policies

In the past half a century, Egypt has experienced remarkable progress in the provision of infrastructure in all areas, including transportation, telecommunication, power generation, and water and sanitation. Judging from an international perspective, Egypt has achieved an infrastructure status that closely corresponds to what could be expected given its national income level, as well as contributed to the progress in social and economic well-being of its citizens. The present infrastructure status is the result of decades of purposeful investment, (Loayza and Odawara, 2010)

In the past 15 years, however, a worrisome trend has emerged: Infrastructure investment has suffered a substantial decline, which may be at odds with the country's goals of raising economic growth. Improving infrastructure in Egypt would require a combination of larger infrastructure expenditures and more efficient investment. The analysis provided in this paper suggests that an increase in infrastructure expenditures from 5 to 6 percent of gross domestic product would raise the annual per capita growth rate of gross domestic product by about 0.5 percentage points in a decade's time and 1 percentage point by the third decade. If the increase in infrastructure investment did not imply a heavier government burden (for instance, by cutting down on inefficient expenditures), the corresponding increase in growth of per capita gross domestic product would be substantially larger, in fact twice as large by the end of the first decade. This highlights the importance of considering renewed infrastructure investment in the larger context of public sector reform. Despite this progress, in the last years there has been a slowdown or even a decline in some areas of infrastructure, particularly power generation and transportation. Associated with this decline, capital expenditures in Egypt have been reduced in the last decade, raising concerns that the country may have reached an unsustainably low level of infrastructure investment.

Egypt has had a high share of public investment in infrastructure even among MENA countries. Over the last few decades, however, public infrastructure investment in Egypt has been falling, and the decline in public investment has not been compensated by a rise in private investment,

(IFC, 2003) reports that private participation in infrastructure investment in the MENA region declined in the 2000s compared to the 1990s and in fact, its cumulative investment for 1990-2001 is smaller than other regions, even smaller than Sub-Saharan Africa. The World Bank (2003) concludes that the MENA region especially suffers from an unfavorable investment environment that prevents private participation in the last decade. Reflecting the specific situation of Egypt, the impact of infrastructure in the country has been studied from the following perspectives in the literature.

(1) Infrastructure is one of the determinants and binding constraints of growth performance. Using diagnostic approach and growth regressions, developed by Haussmann, et al. (2005), Dobronogov and Iqbal, (2005) and Enders (2007) found that inadequate infrastructure is not among most urgent binding constraints in Egypt, but inefficient financial intermediations and high public debt are critical growth constraints. Kamaly (2007) analyzes the sources of growth in Egypt for three decades (1973-2002). Using a new consistent estimate for capital stock and growth accounting technique, he claimed that capital stock seems to be the most important source of growth, and the downward trend in real output growth since the 1980s could be attributed to the slowdown in capital growth, including infrastructure. Nabil and

Vefganzounes-Varoudakis, (2007) investigated the linkage between economic reforms, human capital, infrastructure, and economic growth in the MENA region using Employing growth regressions that include different composite indicators of infrastructure on panel data consisting of 44 countries from 1970 to 1999. They found that the contribution of infrastructure on growth is substantial. At the country level, comparing the period for 1980-89 to 1990-99, the contribution of infrastructure to growth in Egypt fell from 1.0 to -0.9, while that of the average of MENA countries fell from 1.4 to 1.0. The drop in the contribution from infrastructure in Egypt was due to the decline in their measure of road networks experienced in the 1990s,

(2) Infrastructure has a significant impact on improvement of the business climate and encouragement of private participation in the economy. The World Bank report (2008) emphasized the importance of securing long-term fiscal sustainability in its basic infrastructure sectors while sustaining the quality of service delivery in them. Moreover, Ragab (2005) argues that better performance of infrastructure and more efficient regulatory framework are critical to improve the business climate and promote private domestic and foreign investment in Egypt, and,

(3) The majority of previous studies on the effect of infrastructure on private investment found a positive impact of public infrastructure investment on private investment. Shafik, (1992) claimed that public investment tends to crowd in private investment through infrastructure investment in Egypt. In a recent paper, Agenor et al. (2005) investigated the impact of public infrastructure on private investment in three countries in the MENA region (Egypt, Jordan, and Tunisia). They used a vector auto regression (VAR) model that accounted for both the flows and stocks of public infrastructure and controled for simultaneous interactions between these variables and private credit, output, and the real exchange. The impulse response analysis indicated that public infrastructure has both flow and stock effects on private investment in Egypt.

2-8 Consumer Policies

With a more liberalized economy, serious attention has being paid to ensure that mechanisms were in place to protect the consumer. Such attention is translated in real actions through passing and implementation of the consumer protection Law in 2006. The consumer protection societies have been also expanded to play the role of the civil society in building up the consumer awareness and education towards food specifications and safety issues. They also observe the effectiveness of transparency and building up the necessary trust in private producers and government on one side, and consumers on the other. The new law was a necessary tool for allowing Egypt to move further in the direction of trade liberalization and encouragement of private participation without compromising the government's obligation to provide legitimate protection to consumers (Soliman, 2000a) and (Soliman, 2000b).

In relation to consumer's policies, the Law of commercial fraud was adjusted in the year 2000. The penalties applied on the traders, who might violate the specifications have been shaper. Whereas, the monetary penalty was raised to hundred thousand Egyptian pounds, the punishment could reach custody (imprisoned) for one year.

The Egyptian Parliament passed Law 3/2005 on the Protection of Competition and the Prohibition of Monopolistic Practices. A Commission responsible for implementation of the Law has being operational since June 2005. Companies (public or private) that are established as for-profit are subject to the Law. Actually, they are dealing with at least 30% of the market share of a certain commodity. The Competition Law prohibits price collusion, production-restricting agreements, market sharing, and abuse of a dominant market position (Ministry of Trade and Industry, Egypt, 2010). Currently, this commission is under the super vision of the ministry of trade and industry. The penalties decided by the law have been recently raised by the Egyptian parliament to each 50 million Egyptian pounds.

The ministry of trade and supply since 1997 has adopted the attitude of the civil community to establish the consumer protection society. Until now more than two hundreds societies have been

established and approved. The passing of the consumer protection law has strengthened the effectiveness of these societies. They provide in addition to that, helping the governmental departments with respect to the oversight role in the market, they also provide an important function in terms of raising the consumer conscious towards food safety and sanitary (Soliman, 2000a).

3 TRADE POLICES

Before applying the economic reform program, GOVEG took control of trade in agricultural products allowing only little horticultural exports by private sector, under restriction of handing in 25% of the earned foreign currency to the Central Bank at the official exchange rate. That policy has been modified under the second Package of the reform policies directed to the demand-side to encourage private sector role in agricultural commodity exports. Dollar income was valued at the free exchange rate, associated with allowing the private sector to establish grading, loading and cold storage warehouses for exporting fruits and vegetables, (Soliman, et al, 2010b).. Since 1999, Egypt has not submitted any notifications to the WTO Committee on Agriculture, (World Bank, 2008).

This section includes, beside a profile of the agro-food trade of Egypt, a review analysis of the trade agreements, tariff and non-tariff barriers on trade flow.

3-1 General Presentation of Egyptian Agro-Food Trade

While the total merchandise exports of Egypt was 5700 million US$, its merchandise imports was almost triple exports value, i.e. around 16.9 million US$ in 2009. EU is the main client of th Egyptian merchandise export. It market absorbs 83% of such value, even though EU merchandise exports to Egypt covers only around one third of the letter's merchandise imports. Therefore, the Egyptian merchandise exports to EU cover only 76% of the EU exports t Egypt, (Table 42). The performance is worsening when we analyze the agricultural trade flow. Egypt agricultural exports to EU are only 6% of its total merchandise exports and Egypt agricultural imports from EU is only 3% of its total merchandise imports. However, the Egypt-EU net balance of Agro-food trade showed better performance than the Egyptian agricultural trade with the rest of he world, (Table 42)

The total agricultural exports of Egypt was 1201 million US$ and the total agricultural imports was 5420 million US$ resulting a deficit of about 78% of agricultural imports value. While the Arab Countries are the major market of the Egyptian agricultural exports, which receive around 44% of total agricultural exports, Egypt imports only 4% of its agricultural products requirements from Arab countries. Therefore the net agricultural merchandise balance between these two markets is positive, where exports cover 225% of imports. The EU market is the second important market for the Egyptian agricultural exports. Whereas EU share in the Egyptian agricultural exports is about 29%, EU share in Egyptian agricultural imports is only 11%. However, the net balance is negative, with a deficit of around 41% of the imports value of Egypt from EU. The other European countries receive 8% of the agricultural exports of Egypt and deliver to the Egyptian market 17% of its agricultural import with a deficit I the net balance of 90%.. None of North America markets imports agricultural products from Egypt, (

Table 43)

3-2 Trade Agreements

The total number of international agreements between Egypt and the rest of the world are 400. Among them 100 with European countries, 33 with African Countries, 85 with Asian Countries, 70 with north American Countries, 5 with south American countries, 2 with Australia. Numerous of these agreements related directly or indirectly to trade. The study extracted the following set of agreements that are purely for trade promotion. These are (1) COMESA agreement, (2) Egypt - EU Partnership Agreement, (3) EU/EGYPT Action plan, (4) Qualified Industrial Zone [QIZ], (5) Free and Preferential Trade Agreements

Between Egypt and the Arab Countries, (6) International Agreements [International Organizations - Asia - Europe, (7) AGADIR, (8) TIFA, (9) PAFTA, (10) MEFTA, (11) Global System of Trade Preferences (GSTP), and (12) Egypt-Turkey. In addition, there are some important agreements signed, as draft and soon will be applicable. These are:

(1) Egypt-(UEMOA) Free Trade Agreement: for the Establishment of a Free Trade Zone between Egypt and West African Economic and Monetary Union (UEMOA) the UEMOA is composed of eight West African member countries (Benin, Burkina Faso, Cote D'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo),

(2). Egypt- CEMAC Countries agreement for Regional Free Trade Area Negotiation, the CEMAC group are Cameroon, Central African Republic, Chad, Congo-Brazzaville, Gabon and Equatorial Guinea in Central Africa,

(3) Egypt- Nigeria Bilateral Free Trade Area with the goal of obtaining an economic preference ,as Nigeria is the economic powerhouse within the Economic Community of West African States (ECOWAS) group,

(4) Egypt-Tanzania Bilateral Free Trade Area to compensate the drawbacks stemming from Tanzania's withdrawal from COMESA,

(5) Egypt-Mercosur Preferential Trade Agreement which includes the Southern Common Market, regional trade agreement (RTA) between Argentina, Brazil, Paraguay and Uruguay founded in 1991 by the Treaty of Asuncion, which was later amended and updated by the 1994,

(6) Egypt- India Preferential Trade Agreements,

(7) Egypt-Sri Lanka free trade agreements,

(8) Egypt-Russia Free Trade Agreements

However, the study focuses upon the agreements between Egypt and EU countries and between Egypt and Arab Countries. They are classified into three groups Economic Blocks l agreements, multilateral agreements and bilateral agreements **(**Ministry of Trade and Industry, 2010).

3-2-1 Economic Blocks agreements:

3-2-1-1 Egypt - EU Partnership Agreement

Egypt started negotiations with EU for concluding a partnership agreement in 1995. Its initial signature was made on January, 26th 2001 in preparation for the final signature that was effective on June, 25th 2001. The Member States 0f the European-Egyptian Partnership Agreement are the EU members. According to the Agreement, a free trade area (FTA) will be established during a 12-year transitional period, from the date the agreement enters into force. During the third year both parties will decide upon the procedures, to be implemented on the following year, to further liberalize their trade in agricultural products, maritime products and processed agricultural products. The Agreement permits Egypt to take certain exceptional measures for specific periods during the transitional stage, if and when certain domestic industries face a threat as a result of liberalization of imports of similar goods from the EU. The Agreement includes implementation of WTO and GATT regulations against anti-dumping, subsidy and safeguard measures. The Agreement allows each party to enjoy Most Favorite Nation treatment MFNT) from the other party in trading services. The Agreement aims at increasing the flow of foreign capital, expertise, and technology to Egypt. Egyptian exports of manufactured goods to the EU will be exempted from tariffs once the Agreement enters into force, meanwhile, EU exports of manufactured goods to Egypt shall be tariff-exempted, according to the lists and period specified in the Agreement. Agricultural goods and agricultural processed goods shall not be tariff exempted but shall be treated according to the rules stipulated in the agreement, which defines certain quotas for specific goods with tariff privileges and certain market windows for exportation. The agreement is valid until terminated by either party by

notification to the other party. The Agreement shall cease to function after the elapse of 12 calendar months from date of notification.

In addition, the agreement aims at developing balanced economic and social relations through cooperation. While it contributes to the process of economic and social development in Egypt, it also encourage regional cooperation to promote peaceful coexistence and economic and political stability. as well as promoting cooperation in other fields of mutual interest. Egypt and the EU agreed on exempting certain quotas of agricultural products from custom duties and reducing the tariffs on exports that exceed these quotas.

With Respect to Egyptian Agricultural Products Exports to EU of Egyptian origin, they are either eliminated from tariffs or the rates are reduced. For products which the EU tariff system stipulates a value-based fee and a specific fee, reductions shall only apply to the value-based fee. .For specific products, tariffs will be eliminated within the quotas specified. Beyond the set quotas for quantities, either full tariffs are applied or a tariff reduction is implemented. Other Products are liable to a 3% annual increase on tariffs based on the volume of the preceding year.

As of December 1st and up to May 31st, the agreed upon entry price shall apply for fresh oranges within a tariff quota of 34000 tons, with regards to the preferential advantage of a value-based customs fee. The customs fee shall be reduced to a zero level, which was set at Euro 266/ton as of Dec 1st, 1999 and up to May, 31st, 2000 and readjusted to Euro 264/ton afterwards for the same period. The shipment's entry price is less than 2%, 4%, 6%, or 8% of the agreed upon price, the fixed tariff fee shall be equivalent to the 2%, 4%,6% or 8% percent of the agreed upon entry price. If the entry price is less than 92% of the agreed price, the fixed tariff rate set by the WTO shall then apply. As for the remaining quota of fresh orange (26000 tons), the value -based tariff rate shall be reduced by 60%.

Cut flowers have a quota of 3000 tons, under the following conditions: The price level of the Egyptian exports to the EU must be at least equal to 85% of the EU price for the same type of product and during the same market window. If Egypt's price level for any of these products is below 85% of the EU price level, preferential tariff shall cease to function, The EU shall reapply the preferential tariff, if and when the Egyptian price quotas exceed or equal 85% of the price level of the EU. With respect to EU Agricultural Commodity Exports to Egypt, the tariffs on EU agricultural exports shall either be eliminated or reduced to the level defined in for specific products; tariffs will be eliminated or reduced within quotas listed

The agricultural products used in the production of agricultural commodities. They are subject to CAP (Common Agricultural Policies) to attain the domestic prices higher than those prevailing in the international markets (especially products like grains, sugar and dairy products). The EU imposes the following duties on its imports of processed agricultural commodities:

1) Relative custom fees (between 2% and 12%) are applicable based on the processing operations of those commodities. Egyptian exports will be exempted from this custom fee.

2) A tariff fee on the agricultural components, equivalent to the difference between their international prices and domestic (EU) prices

3) A list of Egyptian processed agricultural products will be exempted from the relative custom fee while the tariff fee on the agricultural component will remain unchanged, whereas a number of other

Egyptian processed agricultural products will enjoy a 30% exemption of the tariff fee on the agricultural component in addition to the complete exemption from the relative custom fee

4) An additional fee shall apply on commodities whose component includes ingredients of grains, rice, sugar or dairy products.

EU Exports of Processed Agricultural Products to Egypt will be treated according to the following categories:

Products that will be exempted of all tariffs and other fees with a similar effect after two years from the

date the Agreement enters into force.
Products whose tariffs and other similar fees will be reduced according to the following time table:
A reduction of 5% of the basic fees after two years from the date the Agreement enters into force.
A reduction of 10% of the basic fees after three years from the date the Agreement enters into force.
A reduction of 15% of the basic fees after four years from the date the Agreement enters into force.
Products whose tariffs and other similar fees will be reduced according the following timetable:
A reduction of 5% of the basic fees after two years from the date the Agreement enters into force.
A reduction of 10% of the basic fees after three years from the date the Agreement enters into force.
A reduction of 25% of the basic fees after four years from the date the Agreement enters into force.

3-2-1-2 Greater Arab Free Trade Agreement (GAFTA)

Pursuant to Decision No. 1317 D 59, the Economic, and Social Council, at a meeting held on 19/2/1997, adopted the Executive Program, and set a timeline for the establishment of an Arab Free Trade Area in accordance with the 1981 Agreement for Facilitation and Promotion of Trade among Member Countries. The Agreement entered into force on 1/1/1998. All trade among Arab member countries was subject to a gradual phase-out from 1/1/1998 until 1/1/2005, which was the timeline set for establishing the Arab Free Trade Area. During the liberalization process Member countries were able, as per agreement during the implementation process, to schedule certain commodities for immediate liberalization. The FTA applies to all products as follows: Agricultural and animal products, from HS Chapters 1 to 24, whether in their raw or processed form. During the liberalization process member, countries were able to exclude from tariff reductions certain agricultural products depending on the production season. However, since 1/1/2005 all agricultural products became exempt from customs duties and other fees and charges having similar effect. Provisions cited in this Program shall not apply to products or materials banned from importation, circulation or use in any member country for reasons related to religion, health, security and environment or because of quarantine rules. Member countries are required to submit a list of these products, as well as a list of any related amendments. These provisions do not apply to commodities produced in free zones where specific procedures are yet to be established in connection with the treatment of such products. The Preferential treatment implies that the reduction rates reached zero level by 2005.

Seventeen Arab member countries have acceded to this Agreement to date Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Sudan, Syria, Tunisia, United Arab Emirates and Yemen. However, three of the countries in the region have not yet rendered effective the gradual phase-out of customs duties and any other duties or charges having equivalent effect (Palestine, Sudan and Yemen). Where Yemen reduces its import duties by 16% annually starting from 2005 to reach total exemption in 2010., Sudan reduces its import duties by 20% annually starting from 2006 to reach full exemption in 2010, and Palestine is exempted from reducing its import duties. Palestine exports to Arab countries are exempted from any customs duties or other duties having equivalent effect pursuant to the Arab Summit decision in Tunisia no.274 in 2004. The reduction rates reached zero level by 2005. All exceptions granted to member countries were terminated by 16/9/2002. The Arab rules of origin are currently being used in order to apply the GAFTA agreement. These rules of origin require at least 40% value-added. The detailed Arab rules of origin derived from the EU rules of origin are being developed currently. Their objectives are to protect Arab countries' production from substitute products originating in non-member countries and to give preferential custom treatment on applicable goods that fulfill the value added criteria.

All types of non-tariff measures (seasonal restrictions, import licenses, and other quantitative measures) have been eliminated. To dispute settlement mechanism member countries have established procedures for settling disputes among them and abolishing the authentication/certification needed for

rules of origin documents and certifications. Schedules of concessions under the GATS are now being discussed to reach an agreement on services in accordance with WTO agreement. A detailed schedule for services fees is being prepared to determine whether they include. duties with equivalent effect. The provisions of the GAFTA agreement including the customs reduction are not applicable to free zones products.

3-2-1-3 Pan Arab Free Trade Area (PAFTA)

The Establishment of the Pan Arab Free Trade Area was signed by the members of the Arab league on the February 27, 1981 to facilitate and development the trade among Arab States. Member States of the (PAFTA) are Egypt, United Arab Emirates, (UAE), Bahrain, Jordon, Tunisia, Saudi Arabia, Sudan, Syria, Iraq, Oman, Palestine, Qatar, Kuwait, Lebanon, Libya, Morocco and Yemen. The non member states include the Arab League members who have not yet finalized the procedures to join the area. They are Algeria, Djibouti, Somalia, and Comoros Islands, Mauritania. To enhance the implementation of this Agreement the member states agreed on February 19, 1997 on the arrangements to establish the Pan Arab Free Trade Area to be completed within 10 years. The Arab Summit held in Beirut in march 2002 and the Economic And Social Council meeting held in September 2002 decided to reduce the transitional period for the implementation of the Pan Arab Free Trade Area (PAFTA) to be seven years ending in January 2005.

The objectives of Free Trade Area (PAFTA), (Delegation of the European Union to Egypt, 2010) are to eliminate the customs duties and other fees and duties having similar effects. This objective was implemented as follows: 10% annual reduction on first of January of each year from 1998 to 2003 and by 20% for the years 2004 and 2005. Member States should eliminate all non tariff barriers (NTB's), including Administrative, Monetary, Financial and Technical barriers. The Arab Summit decided to grant the least developed member states a preferential treatment, through which their exports to the other member states should enjoy free access and exemption and custom duties, meanwhile they have to reduce their customs tariffs gradually in five installments starting from January 1, 2005.

The rules of origin applicable now require either to apply detailed rules of origin on the item that the member states reached a consensus about them or to apply the value added should not be less than 40% of ex- factory cost for the items that the member states could not reach a consensus about them. Detailed rules of origin have been under discussion among member states for some time, when agreed upon; it will replace the previous one. Trade in Services Agreement has been reached on the general Provisions of the Agreement. Negotiations shall start soon between member states to agree on the specific commitments of each member.

The tariff dismantling for all industrial and agricultural products started in January 1997 with a 10% customs duties reduction and finalized on 1st January 2005 with a final 20% customs duties reductions. Currently all products meeting the transitional rules of origin (products should have at least 40% Arab component) can access members' markets duty-free. Only 6 Member States (incl. Egypt) presented negative lists with products exempted from tariff dismantling, but they were valid for a maximum of 4 years and expired in September 2002. However, three of the countries (Morocco, Tunisia and Egypt) have added some administrative procedures for textiles products in order to obtain duty-free market access. The Arab League, who clearly stated that they should be removed, considers these measures as non-tariff barriers.

The Arab League's Economic and Social Council (ECOSOC) administer the PAFTA-Agreement with high officials meeting, at least twice per year. Under the AL ECOSOC, there is one Committee on ROO, and one on NTB, also meeting 2-3times/year. Dispute Settlement procedures have already been finalized. A focal point has been appointed in each MS responsible for dealing with complaints or problems faced by MS companies. If no solution is reached by the focal points, then the ECOSOC will act as arbitrator, if this fails, it goes to the Arab League Court for investment and trade problems. The Committee on ROO is

currently working in the establishment of detailed ROO. The General Framework has already been endorsed by the Eco-Soc and the ROO on agricultural products will be presented in the July meeting for endorsement. The expert group is currently working on the ROO for industrial products was finalized by the end of 2005 and presented to the ECOSOC for endorsement. The possibility to adopt the Pan-Euro-Med ROO as PAFTA ROO was initially discussed, but no agreement reached. The Committee on NTB is analyzing the different customs procedures, import/export documents, and costs related to customs clearance aiming at harmonizing them in order to enhance trade and investments in the region.

3-2-2 Multilateral Agreements

3-2-2-1 Free Trade Agreement between Egypt and EFTA States

Norway and Switzerland were among the founding member states of EFTA in 1960. Iceland joined EFTA in 1970, followed by Liechtenstein in 1991. Norway, Iceland (from 1994) and Liechtenstein (from 1995) are also parties to the European Economic Area Agreement (EEA) with the European Union, while Switzerland has signed a set of bilateral agreements with the EU, (EU, EEAS, 2010. Although the four EFTA countries are small, they are world leaders in several sectors vital to the global economy. The two EFTA Alpine countries – Liechtenstein and Switzerland – are internationally renowned financial centers and hosts to major companies and multinationals. The two EFTA Nordic countries, Iceland and Norway, stand out in fish production, the metal industry, and maritime transport. Accordingly, to make FTA with Egypt would generate mutual benefits.

The Egypt-EFTA agreement was signed in Davos in January 2007 and entered into force in August 2007, The Industrial products are treated as follows:

While the Egyptian exports to EFTA shall enjoy an immediate removal of all customs duties and other charges having equivalent effect, Egyptian imports from EFTA states, if they are originating in EFTA, shall be gradually abolished. This procedure occurs according to the schedules of four lists in which Egyptian tariffs are phased out differently over the years starting from the date of entry into force of the Agreement. The tariff reduction on Egyptian imports could be summarized as the following schedule:

List 1: includes the row materials that are important as inputs for most of industries, this list enjoys 75% reduction from the day of entry into force ,and it will be completely liberalized in the second year of entry into force (year 2008). The most important products included in this list are: Aluminum ores, sodium chloride, Sulfur, wood, parts of machines, aluminum oxide, cooper alloys.

List 2: includes the intermediate goods, the tariff phasing out will start in year 2008 and it will enjoy free access in year 2014. The most important products included in this list are: carbon, chemical preparations, papers, glasses, fibers, Tubes and pipes of vulcanized rubber, Insecticides, and Vacuum flask

List 3: includes the final goods, the liberalization of this list will be started in year 2010 and end in year 2017. The most important products are apparel, textiles, shoes, iron and steel, electrical equipments and machines.

List 4: includes mainly vehicles and some of the electrical engines and generators. This list will be liberalized in ten years (2011-2020).

It was agreed that the agriculture file would be dealt with on a bilateral basis. A List of agriculture exports to each EFTA member country was prepared, as well as lists of imports of agriculture products from

member countries, in accordance with Egyptian interests. Both parties agreed on the list of Egyptian exports that is to be accorded preferential treatment by EFTA countries, equivalent to the preferential treatment accorded to EU countries for 5 years. This preferential treatment will not be reciprocal. Negotiation is to take place by the end of the 4th year to the effect that Egypt accords the same preferential treatment to goods of EFTA. An article was agreed upon regarding the protection of IPR according to the Egyptian interests and the annex regarding trade in fish was agreed upon, according to the Egyptian interests. Both parties of the agreement apply the PAN-EURO-MED rules of origin, which allows products produced from materials originating in any of the Euro-Med countries to enter the EU market with Pan-Euro –Med preferences. Therefore, Egypt and EFTA can benefit from the PAN EURO -MED by establishing originating integrative industries and export them into the EU market.

A certain country can enjoy this accumulation, if some pre-conditions are satisfied. These are: (a) All participating countries must conclude FTAs among each other (such as Egypt-Turkey FTA), (b) All participating countries must conclude FTAs or Association Agreement with EU (such as EU-Egypt Partnership Agreement and the custom union between Turkey and EU), (c) participating countries, must employ the Euro-Med rules of origin.

3-2-2-2 AGHADIR Agreement

"Aghadir Declaration" was signed by the Hashemite Kingdom of Jordan, the Tunisian Republic, the Arab Republic of Egypt, and the Kingdom of Morocco in the Moroccan city of Agadir on 8th of May 2001 for the establishment of a free trade area for the Arab Mediterranean countries. However, the four countries signed in Rabat on 25 February 2004 the agreement on the establishment of the Free Trade Area between the four countries. It was agreed to apply the Pan-Euro med rules of origin on the goods exchanged among them. The agreement cited that the Arab countries member of the Arab league who are members of the Pan Arab Free Trade Area and have Association or a Free Trade Area agreement with the EU could join Aghadir agreement on the acceptance of its members. It has entered into force on 6/7/2006. The goals of the agreement are to establish a free trade area between the member states by 1/1/2005, to develop economic and commercial cooperation between the member countries and to encourage economic and industrial integration among member countries by applying accumulation rule to produce goods for export to EU as well as to their domestic markets. Even though it stipulates the Agreement shall be in force for an unlimited duration, however, any party to the Agreement can withdraw from it, if the Party concerned sends a notification to this effect to the Foreign Ministerial Committee. The advantages of the Agreement include exemption of all industrial and agriculture products from the entire tariff and the non-tariff measures as soon as the agreement is into effect, and applying the cumulative Rules of Origin, which will support and enhance the economic and trade cooperation among the parties. The agreement applies the pan euro med rules of origin so as to be benefited from the diagonal accumulation already applied in the context of pan euro-med rules of origin. On the other hand, it Pursuits to enhance trade exchange between Egypt and the signatory Arab countries since the volume of inter-Arab trade does not exceed 10% of their total trade volume currently, and it has even more benefits of expanding the European Union markets after the accession of ten new member states.

.This Agreement deals with many important issues such as customs systems, rules of origin, government procurements, financial transactions, safeguard measures, new industries, subsidy and dumping, intellectual property, standards and specifications, and establishing a dispute settlement mechanism. Rules of origin constitute one of the most important articles stipulated in the Agadir Agreement since it will increase the prospective European Market Access for products of Party states, which consequently will encourage investments and increase inter-country regional cooperation.

3-3 BILATERAL AGREEMENTS

There are several bilateral trade agreements between Egypt and Arab and Mediterranean countries, as shown in the following summary table. However, the study focuses on three of them as the most common and effective ones.

Articles	Lebanon	Syria	Morocco	Tunisia	Libya	Jordan	Iraq
Type of Agreement	Executive Program	Preferential trade agreement	Free Trade Agreement	Free Trade Agreement	Tariffs Agreement	Free Trade Agreement	Free Trade Agreement
Enter Into Force	15/3/1999	1/12/1991	28/4/1999	26/4/2007	18/6/1991	21/12/1999	8/7/2001

Source: Ministry of Trade & Industry, Trade Agreement Sector 09 August, 2010. Available in web site: http://www.tas.gov.eg/English/Trade%20Agreements/Publications/overview

3-3-1 The Free Trade Agreement between Egypt and Turkey

Egypt and Turkey began the first of six rounds of trade negotiations in 1998. Lately, they signed final draft on December 27, 2005 on a free trade agreement. The Agreement is drafted in accordance with the provisions of the chapters related to the free trade area in the Association Agreement between Egypt and the EU. The Egypt–Turkey FTA major components: and key provisions include the following: Abolishes Customs duties and charges having equivalent effect on both imports and exports, and all quantitative restrictions on imports and measures having equivalent effect in accordance with the provisions of the Agreement, and stipulates that no new measures on imports may be introduced and that those already applied may not be increased in trade between the parties.

The agreement lays down the system of Pan-Euro-Med accumulation of origin, which governs the application of the harmonized preferential rules of origin between the two countries. It governs the rights and obligations of the parties with respect to subsidies to be administered by Articles VI and XVI of the GATT 1994, the WTO Agreement on Subsidies and Countervailing Measures, and the WTO Agreement on Agriculture. It, also, outlines means of promoting investment and technology flows between the two countries to achieve economic growth and development. In addition, it establishes a framework for achieving gradual liberalization in trade in services in accordance with the provisions of the WTO General Agreement on Trade in Services (GATS).

It allows Egypt to take exceptional measures to protect infant industries or sectors that face difficulties in the form of increased customs duties. In this case Customs duties applicable on imports from Turkey into Egypt may not exceed 25 percent ad valorem and must maintain an element of preference for products originating in Turkey. The total value of imports of products subject to these measures may not exceed 20 percent of total imports of industrial products from Turkey, as defined in Article 3, during the last year for which statistics are available. These measures can be applied for a period not exceeding five years.

The agreement allows both parties to take measures against dumping or to apply safeguard measures in accordance with WTO Agreements, to take measures in case of serious shortage in an essential product to the exporting country that leads to serious difficulties, and to take measures in case of balance of payments difficulties in accordance with relevant WTO and IMF articles. The FTA establishes an Egyptian–Turkish Joint Committee with representatives to administer the FTA, resolving problems arising during implementation and discussing the possibility of further concessions.

The agreement protocol covered the abolition of customs duties and charges having equivalent effect on imports between Egypt and Turkey; as well as the exchange of concessions in basic agricultural, processed agricultural, and fishery products. Industrial products originating in Egypt shall enjoy an immediate removal of all customs duties and other charges having equivalent effect, when the FTA enters

into force. Therefore, all Egyptian exports of industrial products will enjoy free access to Turkey. It should be mentioned that, the processed agricultural products are not considered industrial products even though some are classified in the HS Customs duties as industrial.

List 1 covers raw materials that are important as inputs for most industries. This list enjoys 75 percent reduction from the Most Favored Nation (i.e. non-preferential) duty from the day of entry into force of the agreement. Products on the list will enter Egypt duty-free in the second year of entry into force of the agreement (i.e., 2008). The list consists of about 2,070 HS tariff lines, including aluminum ores, sodium chloride, Sulfur, wood, parts of machines, aluminum oxide, and copper alloys. Egypt's MFN duties on those products are 0, 2, 5, or 10 percent.

List 2 covers intermediate goods. Tariff phase-out for these products will start in 2008. Egyptian imports will enjoy duty-free access starting in 2014.The list consists of about 1,204 HS tariff lines, including carbon, chemical preparations, papers, glasses fibers, tubes and pipes of vulcanized rubber, insecticides, and vacuum flask. Egypt's MFN duties on those products are 2, 5, 10, 20, or 30 percent.

List 3 covers final goods for which tariff phase-out will begin in 2010 and end with complete liberalization in 2017. The list consists of nearly 1,650 HS lines, including apparel, textiles, shoes, iron and steel, and electrical equipment and machines. Egypt's MFN duties on those products are 2, 5, 10, 20, or 30 percent.

List 4 includes mainly vehicles and some electrical engines and generators. Tariff phase-out will occur from 2011 to 2020. The list includes only 23 HS lines. Egypt's MFN duties on those products are 10, 30, 40, or 135 percent.

The agreement includes concessions on agricultural, processed agricultural, and fishery products. The two parties have agreed to grant each other concessions as either tariff rate quotas (TRQs) or tariff reductions on agricultural, processed agricultural, and fishery products. The two parties exchanged the same concessions on processed agricultural products.

There are two tables of concessions. Table A includes agricultural and processed agricultural products originating in Turkey that will be subject to TRQs and/or reduced duties when exported to Egypt. Table B includes agricultural, processed agricultural, and fishery products originating in Egypt that face TRQs and/or reduced duties when exported to Turkey. Thus, Egyptian exports of agricultural products have better market access opportunities into the Turkish market than Turkish exports of similar products into the Egyptian market. Moreover, Egyptian fishery exports, except HS 0301, face a 50 percent MFN duty reduction when entering the Turkish market, while some live plants will access the Turkish market on a duty-free basis. Although limited, the products listed in Tables A and B are important for both countries. Nevertheless, the two countries may discuss expanding those concessions later through the joint committee.

3-3-2 Egypt-Turkey FTA and the Egypt-EU Association Agreement

The two parties have agreed to apply the Pan – Euro med Rules of Origin on the goods exchanged among them. Many aspects of the Egypt-Turkey FTA resemble the Egypt–EU Association Agreement, with entire sections adopted from it. Its rules of origin are identical to those governing each country's agreements with the EU (e.g., the "one list" is included), allowing them both to benefit from Pan-Euro Med rules of origin. In addition, the tariff phase period out for Egypt's nonagricultural goods is nearly identical to that granted to Egypt by the EU in recognition of Egypt's developing country status. The Association Agreement specifies four categories of goods at the product level, delineating a phase-out period of 3 years, 9 years, 12 years, and 15 years. These schedules have been largely incorporated, and on a product-specific basis, into the Egypt-Turkey FTA with specified years—2008, 2014, 2017, and 2020—to phase out tariffs on the four categories of goods. (The only differences between the Egypt-EU and Egypt-Turkey

agreement lists are three HS codes related to electrical engines and generators, which were moved from the third to the fourth list.).

According to the Agreement, imports into Turkey of industrial products originating in Egypt shall be allowed free of customs duties and other charges having equivalent effect, upon the entry into force of the Agreement. On the other hand, customs duties and other charges having equivalent effect on imports into Egypt of industrial products originating in Turkey shall be gradually abolished according to the schedules of four lists, which are identical to the lists attached to the Association Agreement. The dismantling of customs duties on Turkish goods of each list shall be affected one year behind the similar list of EU.

Regarding agricultural processed agricultural and fishery products, the two parties have agreed to grant each other concessions either as free tariff quotas or reduction of the customs duties on lists of these products.

3-3-3 Protocol between Egypt and Israel On Qualifying Industrial Zones (QIZ)

The Government of the Arab Republic of Egypt and the Government of the State of Israel noting the 25th Anniversary of the signing of the Peace Agreement between the Parties and desiring to promote economic and trade relations for the benefit of the Parties have agreed to conclude this protocol. In recognition of the requirements in the United States-Israel Free Trade Area Implementation in 1985, and on the recommendation of the private sector of the Parties have agreed to the creation of the Qualifying Industrial Zones (hereinafter the "QIZ"), and request the Government of the United States to designate them as "Qualifying Industrial Zones" under the legislation and proclamation. This Protocol shall enter into force upon the notification of both Parties on the completion of the necessary legal procedures required by them for the entry into force of this Protocol

The Parties hereby designate the following territories of their respective countries as enclaves where merchandise may enter for purposes of export, without payment of duty or excise taxes, no matter what the country of origin of the merchandise.

A For the Government of Egypt: includes areas as designated by the Parties and as approved by the United States Trade Representative (USTR).

B For the Government of Israel: includes an Area under Israeli Customs control within the boundaries of the land crossing border at Nitzana Crossing Point.

Based on the respective national legislation of the Parties, the competent authorities of Israel and Egypt shall establish the necessary procedures for assuring the speedy flow of goods into and out of these areas. The purpose of these procedures is to ensure the strict enforcement of the principles of duty and taxation pursuant to this protocol. In the case of the State of Israel, where factories located outside the zone shall contribute part of the 35 percent minimum content required by the legislation and proclamation, the Israeli customs authority shall ensure that inputs imported from abroad incorporated into goods shipped into the zone shall be exempt from duty.

A QIZ Joint Committee shall be established, in accordance with Article II of the Protocol, with two co-chairpersons: an Egyptian appointed by the Egyptian Government, and an Israeli appointed by the Israeli Government. A representative of the United States may attend the meetings as an observer

2. The responsibilities of the QIZ Joint Committee are: to supervision the implementation of the QIZ Protocol, verifying full compliance with the QIZ requirements, issuing and/or cancel certificates pursuant to Article E of the Protocol; determining the lists of companies pursuant to Article F of the Protocol; preparing an annual report that to be submitted to the relevant Ministers. The QIZ Joint Committee shall carry out its responsibilities on a quarterly basis. The QIZ Joint Committee shall convene quarterly, to determine the list of companies and issues the certificate to those companies. In order for the QIZ Joint Committee to determine the lists of companies to appear on the lists pursuant to the Protocol the following procedures must be followed:

A. The company shall provide its Authorities evidence of full compliance with all the requirements

of the QIZ Protocol for the previous quarter, no later than 15 days from the end of each quarter. This evidence shall include the following documents: the company ID, the type of products exported, the type of input purchased, invoices from Egyptian/Israeli suppliers over the last quarter, including contact persons, and total export of the company to the United States under the QIZ duty free treatment for the previous quarter supported by relevant documents. The authorities of the Party when receive the documents and evidence shall submit to the authorities of the other Party, no later than 30 days from the end of each quarter. The QIZ Joint Committee shall verify the data. in order to determine whether the requirements of the Protocol have been fulfilled. The Joint Committee issues the quarterly lists of the for the following quarter, based on the company's fulfillment of the requirements of the Protocol for the previous quarter.

Companies that have not previously exported under the QIZ Protocol, and that request to be included in the list determined by the QIZ Joint Committee after a quarter has already begun, will not be required to report until the end of the next full quarter. If any Party fails to attend the quarterly QIZ Joint Committee meeting, the Party that has attended the meeting may carry out the responsibilities of the QIZ Joint Committee. If the hosting Party fails to issue the invitation to the other Party to attend the meeting, the other Party may carry out the responsibilities of the QIZ Joint Committee.

The Israeli inputs that shall be recognized for the purpose of the QIZ must be direct relevant inputs.
10. The QIZ Joint Committee shall not recognize inputs purchased from Israeli enterprises as fulfilling the minimum content required from Israeli manufacturers unless those inputs fully comply with the rules of origin as stipulated in the US-Israel Free Trade Area Agreement.

11. Exemption of taxes bases on the quarterly total duty free export to the United States under the QIZ. If the QIZ Joint Committee finds that a company fails to comply with the requirements of the QIZ Protocol the following steps shall be taken:

1- For a first-time failure - the company will not be eligible for QIZ approval for the following quarter, for a second-time failure - the company will not be eligible for QIZ approval for the following two quarters, for every failure beyond the second time - the company will not be eligible for QIZ approval for the following four quarters.

2- In case there is a need for additional data in order to verify QIZ compliance, the QIZ Joint Committee may request the US Customs Authorities to provide the necessary data. In case the QIZ Joint Committee finds during the implementation of the above mentioned procedures a need to amend these procedures, it will submit a proposal to the Minister of Foreign Trade and Industry of Egypt and the Minister of Industry , Trade and Labor of Israel, for their approval.

All the industrial and agriculture products are exempted from the entire tariff and the non-tariff measures. The Parties shall assist United States authorities in obtaining information, including means of verification, for reviewing transactions for which duty-free access into the U.S. is claimed, in order to verify compliance with applicable conditions, and to prevent unlawful transshipment of articles not qualified for duty-free access into the USA, (Table 41)

3-3Tariff and Non-Tariff Barriers

3-3-1 Tariff Barriers

As Egypt has become a member of WTO, the tariff barriers were a big debate in the Egyptian trade policy. The government in treating tariff's list of rates was trying to make compromise between several national development objectives. On the national level there is a need for protecting the domestic enterprises from imports competition, in the same time, there is a need for facilitating the delivery of domestic industries imported requisites and raw materials. The ultimate target of trade liberalization agreements of WTO is to lower the tariff rates.

As the Customs Law No. 66/1963 stipulates in Articles 6 and 9 that the Customs tariff should be issued by a Presidential Decree that has the power of law, on condition that it be submitted to the

legislative authority in its current cycle as soon as it becomes effective. If Parliament is in recess, it is to be submitted to the following legislative cycle, tariff rate amendments were made through several successive

presidential decree over the last decade. Therefore, Egypt made several amended its on tariffs system over the last decade. The Presidential Decree No. 33 in 1999 was amended by the Presidential decree No. 300 in 2004, implying significant across-the-board tariff cuts and a reduction in the number of tariff bands. The only products excluded from tariff cuts were alcoholic beverages, tobacco, and cars with an engine greater than 1,600cc. No other changes in Egypt's MFN tariff have been implemented since 1999. The Customs tariff was amended by the Presidential Decree No 39 in 2007 and again was fatherly amended in the Harmonized System of the year 2009 Issued by The Presidential Decree of The New Customs Tariff No 51 in 2009 to reach a regulated system of the rate of custom tariffs in Egypt, (Ministry of Finance, 2010**).**

The tariff reductions that came into force then were largely driven by national and international changes the Egyptian economy had experienced at the time. The Egyptian Government's long term development plan since 2004 has been to create an investor friendly environment that is increasingly led by the private sector and that provides rapid job growth. In this context, a new Customs tariff issued by Presidential Decree No. 39/2007 has made amendments deemed necessary to achieve the Government's economic objectives in a changing environment. The main objectives of the amendments were as follows:

1. To simplify the structure of tariff rates with a view to reducing distortions in tariff rates and facilitating their implementation by all concerned parties. This objective is achieved through the following reductions: (a) 12 % down to 10 percent; (b). 22 %down to 20 percent; (c). 32 % down to 30 percent; (d) 40 %t down to 30 percent

2. To achieve a balance between tariffs imposed on manufactured products, intermediate goods and raw materials that are used entirely or in part in the production of final goods, while taking into consideration the contradictory goals of supporting the national industry reducing the burden on the Egyptian people, and supporting the various productive activities.

3. To comply with Egypt's commitments to the International Convention on the Harmonized Commodity Description and Coding System, as stipulated by Presidential Decree No. 33/1999, by adopting the HS 2007 issuance as the basis for the Egyptian Customs tariff. This will help facilitate Egypt's external trade, put Egypt's statistics at par with international standards, and ultimately serve negotiations on bilateral and multilateral trade agreements.

4. To review Article 3 of the Customs Law concerning the collection of Customs taxes due on goods that are subject to temporary admission – whether for repair purposes or for completion of manufacturing activities – in order to ensure sound implementation of the Law.

5. Eliminate many of the tariff lines and keep only those strictly necessary in order for the tariff schedule to be at par with international practice.

6. Reduce the current tariff rates on selected imports of basic commodities, medications (especially those used for chronic illnesses) and intermediate and capital goods used for production activities.

7. Support production activities while creating a fair and competitive environment that does not represent a burden on the Egyptian consumer.

8. Develop a partnership with all stakeholders to ensure transparency – a pillar of the international trading system – in the decision making process. The tariff schedule was discussed widely with all concerned parties such as commodity councils, chambers of commerce, the Federation of Egyptian Industries, a number of private and public sector production units, and industrial and investment compounds. The objective was to harmonize all points of view, and to ensure that all stakeholders are partners in the decision-making process to engage all parties and factors concerned with production and commercial operations.

9. Contribute to the creation of a clean environment by applying to selected environmental

products a Customs duty of 2 percent of the value of the product. (In cases where a lower tariff rate below 2 percent has been in force, the lower rate applies.) This tax will be applied on stations supplying vehicles with natural gas, on parts needed to transform vehicles to use natural gas, on equipment used to monitor and control various products of environmental concern, and on equipment for renewable and new sources of energy (wind and solar energy) and their spare parts.

Reviewing the (See attached PDF files into the Folder : TRADE TARIFFS) shows that the tariff rate on almost all food products are within the range 2-5% and the tariff rate on agricultural requisites is almost nil (free)

Egypt's average applied MFN tariff has fallen from 26.8% in 1998 to 20.0% in 2005, and the number of tariff bands has been reduced. While the majority of rates adopted by decree (normally the applied rates) remain well below Egypt's bindings, for 19 tariff lines, they exceed, sometimes substantially, the corresponding bound rates; imports from WTO Members are alleged to carry the bound or the applied tariff rate, whichever is lower. Despite recent tariff reforms, Egypt's tariff system remains complex, with numerous exemptions, reductions, and concessions. In addition to tariffs, imports are subject to a general sales tax of between 5% and 45%, which also applies to domestically produced goods **(WTO, 2005).** The 2005 tariff contains 5,687 lines at the HS eight-digit level, of which 99.8% carry ad valorem duties. Egypt does not apply compound, mixed, or seasonal MFN tariffs.

3-3-2 Non-Tariff Barriers

There are other Trade Barriers rather than tariffs, which have been adjusted and relaxed during the economic reform program application. Imports are not subject to licenses or prior approval. However, a wide range of imported products is subject to mandatory quality controls. Since its last Review, Egypt has imposed 14 definitive anti-dumping duties and two safeguard measures. No notifications on sanitary and phytosanitary (SPS) measures or on technical barriers to trade (TBT) have been submitted to the WTO during the period.

Egypt's customs regime is based on Law 121/1982, Law 66/1963 (the Customs Law), Law118/1975 (which, together with its Executive Regulations (Ministerial Decree 275/1991), is also known as the Import and Export Regulations), and a number of Ministerial Decrees.

In accordance with Law 121/1982, all persons or companies importing goods into Egypt must register with the General Organization for Export and Import Control within the Ministry of Foreign Trade and Industry. The Law also requires that all registered importers be Egyptian nationals and fulfil a number of other conditions, including financial reliability and the presentation of a proven record of past commercial activities. When registering, importers must also provide details of the products they intend to import. Importers must pay for imports through a bank operating in Egypt.

All goods imported into Egypt, except those destined for the free zones, must be accompanied by a customs declaration, irrespective of their value. Other documents required are the original commercial invoice, bill of lading, packing list, pro-forma invoice, a form specifying the mode of payment, delivery order from the carrier in return for the bill of lading, and, if appropriate, a content analysis of the commodity. In certain cases, additional certificates may be required by the customs authorities, including chemical certificates for imports of food additives and other material used in the food processing industry; quality control certificates for a number of products; and a disinfection certificate for shipments of shaving brushes and bristles. Sanitary certificates are also required for a number of products. and plant and animal products are subject to inspection by the Agriculture Quarantine Body and the Animal Quarantine Body.

Ministerial Decree619/1998 requires that all imported consumer goods be shipped directly from the country of origin to Egypt. Ministerial Decree 423/1999 exempts from these provisions goods shipped from the producing country through a transit port and goods assembled from intermediate products of different origins. The authorities indicate that the decrees are intended to prevent the entry of products of

unknown source into the Egyptian market.

Various imported goods are liable to quality control inspection by the General Organization for Export and Import Control within one week of the date of import (see also section (2)(viii)(b)). The Organization is entitled to examine a random sample of 1% of the total number of packages in each consignment and up to 2% of the contents of the chosen packages. The procedures for sampling are laid down in Ministerial Decree 1186/2003; as a main principle, the customs officials must ensure that the samples examined are representative for the consignment. If the chosen samples are not in conformity with regulations, the Organization may search up to 2% of the remaining number of packages in the sample before rejecting a consignment. (Import and Export Regulations, Article 83) Rejected goods must be re-exported or destroyed.

Since Egypt's previous Review, the Customs Administration has stepped up efforts to improve inspection and clearance activities. Advanced clearance centers have been established at the ports of Alexandria, Cairo, Port Said, and Suez to simplify entry procedures (There are six customs offices). The use of computers and x-ray equipment has also helped to improve efficiency and, according to the authorities, the average clearance time has been reduced to between 30 minutes and three days, depending on the size and sensitivity of the consignment. In late 1999, Egypt established a register of trustworthy importers and exporters (reliable in trading in products in conformity with Egyptian specifications). Inclusion on the register, held by the General Organization for Import and Export Control, entitles speedier product quality controls based on the producers or importers' declarations.

4 FUTURE PROSPECTS

Even though Land and water resources are the two main natural resources allocated for agricultural production, the later is the most limiting factor. Thereof, it occupies the highest interest in the future vision of Egypt's sustainable agricultural development. The issues on agricultural policies presented in this study provided evidences that to double the agricultural sector growth rate is vitally required. Such target implies both vertical and horizontal development of the sector. Horizontal increase means additional arable land. However, the water resources availability limits the horizontal expansion. As far as Egypt has a constant quota of Nile water, the available approach is by raising the water use efficiency and looking for nonconventional water resources. Vertical expansion implies to raise the productivity, which in turn, relay upon the potential yield in comparison with the existing yield, either for crops or for livestock. Such potential yield is approached via improvement of farming practices, input intensification and bio-technology, which means to cultivate high yield varieties and introducing improved genetic makeup of livestock, (Soliman, et al, 2006)

The future prospects have three milestones. Raising irrigation water efficiency and maintaining agricultural land resource associated with institutional reform and policy adjustment program.

The future prospects has two scenarios. *Scenario-1* is conservative in reaching moderate quantitative goals of agricultural development, within a decade for each one of them.. *Secario-2* is optimistic in reaching such goals. Both stem from a base period (2007-2008). The first scenario leads to expand the cropped area from 6.4 million hectares in the base period to 8.1 million hectares. The second Scenario leads to 9.8 million hectares. The Intensification rate of the cropping pattern will be raised from 183% to 198% under Scenario-1 and 199%, under scenario-2.

4-1 To Raise Water Use Efficiency for Irrigation

Water resources in Egypt face two obstacles the predetermined quota of Egypt's share in the Nile water and low water-use efficiency resulting in much water losses. There are two types of inefficiency. First, the water conveyance efficiency is estimated at 70%. Secondly, the efficiency of field irrigation

systems is currently around 50% (Soliman, 2002a).

Thereof, one of the main components of the agricultural development strategy is to achieve a gradual improvement of the efficiency of irrigation systems to reach 80% (Table 44). By reaching such objective saves about 12.4 billion cubic meters of water. This occurs through reducing the rice area from 0.7 million hectares in 2007 to about 0.55 million hectares by 2030, and improving the field irrigation and water conveyance systems. The saved water will be used in reclaiming additional new areas. The strategy aimed at adding 0.53 millions hectares under scenario-1 and about 1.3 million hectares under scenario-2, (Table **45**).Egypt is a poor rainfall country; the highest rate falls on North Mediterranean Coast is about 100–150 mm. However, there is an opportunity to maximize the sustainability of rain fed agriculture, through application of improved water harvesting techniques and supplementary irrigation from ground water sources (Saad, and Soliman, 1979). In addition, rationalization of water resources' use is needed, through adjustments in the financial policies. This can be achieved through:

(a) Reviewing tax policies related to agricultural land to amending them so that tax assessment should be based not only ,on the area under cultivation, but it should also considers the cropping pattern and the applied irrigation method;

(b) Introducing concessional credit lines to encourage farmers to improve irrigation systems;

(c) Improving the performance of government institutions responsible for the assessment and collection of agricultural taxes,

(d) Granting tax exemption to farmers adopting improved irrigation systems and the proposed cropping pattern, (McCauley, et al, 2002)

4-2 Maintaining and protecting agricultural land

Agricultural land in the Delta and the Nile valley regions suffers from two important problems: (a) Continued encroachment on agricultural land to diverting it from agricultural to non-agricultural uses at an annual rate of 8,400 hectares, and (b) Continued degradation of soil fertility in so many agricultural areas (Soliman, and Rizk, 1991). To assess these problems would require undertaking periodical soil surveys as a basis to establish fertilizer rates, continued restoration and maintenance of agricultural drainage systems, as well as for installing new drainage systems where needed.

Land reclamation maps should include all necessary elements for the development and settlement of new communities. Therefore, it is needed to introduce new concessional credit lines for reclaiming and developing new areas in a framework for investment opportunities in agricultural projects and other related and complementary projects, if needed. Small farmers in the newly reclaimed areas should form voluntary institutions e.g. Cooperatives, with the state providing needed support to enable such institutions to carry out their role (El-Zoghby, et al, 1985), (Soliman, and El Zanati, 1987), (Soliman and Imam, 1987).

.Protection of agricultural land policy will be based on Undertaking a comprehensive review of all applied laws and procedures to protect agricultural land based on stakeholders' participatory approach and consolidating entities with similar functions. These policy adjustments should be associated with establishing integrated housing plans for the Egyptian villages, with a view to developing a rural housing environment meeting farmers' needs.

Community participation needs providing village leaders with the opportunity to participate in formulating conditions and standards included in these plans, so that such plans would meet the requirements and expectations of the rural inhabitants, and facilitate implementation procedures. Further more; there should be a periodical monitoring of law enforcement, including use of aerial photography; and Introducing a mechanism for linking the non-encroachment on agricultural land and benefitting from the ownership of newly reclaimed areas. The Agricultural land maintenance policy includes preparing packages of extension information and recommendation for different agricultural regions; and planning and executing soil improvement programs.

4-3 Human resources' development

The Egyptian agricultural strategy should adopt a vital target concerning generation of job opportunities for the rural youth. The goal is to generate 4 million jobs by the year 2030 in agricultural and related activities. Such goal is achieved via: (a) Reclamation of new areas, improvement of the irrigation system projects in the old areas, (b) Adoption of labor-intensive technologies, (c) Expansion of agricultural-support activities in producing and marketing agricultural inputs and agro-industries. As the proposed strategy will emphasize on providing the needed human resource skills for different development programs it requires associated design of a new approach towards monitoring and evaluation; and strengthening linkages between agricultural education programs and the requirements of the labor market.

4-4 Improving Agricultural Productivity

the increase in productivity that has achieved over the last 20 years did not reflect the potential of agricultural land or animal productivity **(FAO, 2003)**

4-4-1 Productivity improvement of Plant Sector

To raise the yield of the main crops requires Planting newly developed varieties with resistance to drought, salinity, and pests and of early maturing. To increase the productivity of clover "Berseem" as the main Egyptian fodder, will not only expand the domestic supply of feeds for livestock development but it will also save a proportion of land and water for other subsistence food crops, such as broad bean and wheat (Soliman and Imam,1987). Developing long-medium staple cotton varieties with high economic returns is highly required for keeping the export position of Egypt in the world market and satisfies the domestic textile manufacture demand for cotton.

Assumptions of raising crop yield are based upon the potential yield cited by the agricultural research outputs (Agricultural Research Center, MALR, 2009) and have to be supported by continuous research programs, including wide potentials of using biotechnology, paying greater attention to integrated farm management, improved practices, (FAO, 2003). Based on aforementioned objectives, the projected yield/feddan would be as shown in (

Table **46**) for both scenarios. This table includes also the implications of potential improvement in irrigation efficiency and water resource savings. Water efficiency was assessed economically as return per 1-M3 of irrigation water, at base period farm gate weighted price. Revenue ($/m3 Water) = (Yield x farm Price)/M3 of Consumptive Water. Estimated average farm prices have been weighted by cultivated areas in the different seasons from data issued by (MALR, 2007).

4-4-2 Productivity improvement of livestock Sector

Increasing *per capita* animal protein consumption by additional 4g/day is one of the main objectives of developing animal protein production systems. The outlook intended to reconstitute the animal food basket from the different sources in favor of the least-costly local sources in both scenarios.

As milk production in Egypt, rather than red meat has a comparative advantage **(Soliman, 1994)**, therefore, to Increase cattle and buffalo milk productivity to raise the annual per capita consumption from current 63kg, to be 80 Kg under Scenario-1 and 90kg by scenario-2; associated with reducing meat imports to the most possible minimum. Continued improvement of feed conversion rates in the commercial poultry sector, for both poultry meat and eggs is necessary. It leads to increasing the production of fattening broilers to 1.1 billion broilers under scenario-1 and 1.4 billion birds under Scenario-2. The development program leads also to increasing egg production to 5.8 billion table eggs under scenario-1 and to 9.3 billion table eggs under scenario-2. The development and modernizing the rural poultry sector is also a parallel target.

4-4-3 Increasing Competitiveness of the Agricultural Products

Protection of Competitiveness and prevention of monopoly is one of the main state roles in free market economy. It is a vital accelerating function for marketing development and efficient performance of the market. The future view to reach the effectiveness of such acceleration marketing function includes the following policy instruments.

4-3-1 Improving quality of l products to meet market requirements

This policy requires establishing and applying quality standards for all agricultural products, expanding modern capacity of sorting, grading and packaging processes; applying modern telecommunications technologies for market information associated with a clearing house to streamline future markets. Improving pre- and post-harvest practices will not only improve the quality but also minimizing losses; developing risk mitigation program for agricultural sector market. Rationalization and developing the role of the government and related policies in practicing control over agricultural inputs and outputs to provide effective policies to gear the marketing system towards the market chain linkages.

4-3-2 Agricultural commodity marketing policy

The future reform vision of the agricultural marketing policy requires to improve marketing efficiency via encouragement of establishing agro-industries and vertical, as well as horizontal integration in the market. In addition, the Alexandria Commodity Exchange and Cotton Spot Exchange should be reopened. GOVEG has to establish other commodities' exchange spot for other crops, such as cereals, meat and dairy products, establishment a revolving fund to insure and protect the producers and marketing institutions from markets fluctuations and risk sources.

4-4 Food Security Policies

The world has experienced a global food crisis in 2006 (Von Braun, J.2008). Food prices rose sharply. Available indicators show that this crisis is expected to continue possibly for a long period after the present financial crisis. Keeping this in mind, the sustainable agricultural development is based on achieving certain goals. The expected increase in population is from 80 million to 106 millions by 2030. Thereof, strategy targets are to empower Egypt achieving high level of -self-sufficiency in subsistence food commodities (Table 47). This means for wheat from 54% in the base year to 71% and 81%, under scenari-1 and scenario-2, respectively. It, also leads to raise maize self-sufficiency from 53% in the base year to to 92% for maize, from 77% to 93% for sugar, from 67% to 93% for red meat, and from 97% to 99% for fish, by the year 2030. The strategy would include policies and work programs to that reduce pre- and post-harvest losses to reach at least half their present levels.

Rationalization, but not phasing out, the existent subsistence food-price subsidy policies should be a main objective of food security, in accordance with a practical system to identify beneficiaries on base of incontestable criteria; and designing a monitoring system to assess its relevance and impact on the low-income groups . To reach sustainable food safety policy requires completion the current programs towards establishing a full Egyptian food and feed safety code of practice; establishing Egyptian standards for maximum residues; and establishing Egyptian standards for food additives, preservatives, colors and flavor-enhancers.

4-5 Improving Opportunities for Agricultural Investment

The tentative estimates of the total agricultural investments needed for achieving an annual agricultural growth rate of 4% during 2009-2030, would be $88 billions rather than current agricultural investments of $ 2.35 Billions. Therefore, some restrictions and problems are still prevailing which reduce the positive impact of the newly enacted laws related to agricultural investments. To eliminate such obstacles requires establishing a single entity for the allocation of areas suitable for agricultural

investments, with representatives from all concerned ministries. It , also, requires, reviewing laws and procedures applied in land allocation and issuing title deeds for new reclaimed lands. The farmers and agricultural investors should be able to use the areas allocated to them as bank collaterals. The GOVEG should prepare a clear map for investing in agriculture, which define areas, assigned to the different types of investments, and updated periodically. The concerned Government authorities have to design and implement an integrated program for upgrading human resources needs and skills to manage the information system, A special law should be acted to regulate agricultural financial assistance procedures.
With special incentives to the small farmers, particularly who cultivate strategic crops, and comply with achieving the national purposes of agricultural development. The Principal Bank for Development and Agricultural Credit (PBDAC) should relinquish its role in the procurement and distribution of agricultural inputs, and concentrate on its principal role of financing agricultural and banking activities.

4-6 Institutional reform of Agricultural Sector

The institutional structure of the agricultural sector is highly complex and characterized by, duplicative, overlapping duties and responsibilities in some cases and the absence of an institutional structure in others. In addition, some institutional frameworks lack the appropriate mechanisms for carrying out the assigned tasks, while some other entities carry out tasks incompatible with their structure and basic functions. Therefore, agricultural institutional reform includes governmental institutes, the cooperative sector, and civil society organizations active in the agricultural sector.

4-6-1 Institutional Reform of the Ministry of agriculture and Land Reclamation

This reform program implies delineating the functions of the MALR and related institutions in the fields of research, extension, policy designing, and follow-up, providing information and data, developing agricultural resources, planning and monitoring infrastructure, developing the newly reclaimed areas and ensuring availability of agricultural inputs. The ministry would also phase out its role in commercial production, merging institutional units with similar functions under one strong entity with defined terms of reference; Consolidating the agricultural law and related laws.

4-6-2 Reforming civil society and Rural Development Organizations

civil society and Organizations should be engaged in laying down research plans, their execution and follow-up, as well as in the application of the results. A unified law to regulate the establishment of special associations should be enacting, instead of enacting a special law for each category of the special associations. Finally, the MALR should provide technical support to all institutions and organizations, and consider them as a principal partner with the agricultural extension service in implementing extension plans and programs; and

4-6-3 Strategy for Reforming the Agricultural Cooperatives

Providing appropriate support to encourage cooperative organizations is at the top of the agricultural institutions reform. Such support implies to amending the current cooperative Law (122/1982) in light of market economy requirements and international agreements. Reorientation of the role of the administrative mechanism to serve interests of the members democratically is vitally needed. The small cooperatives should be merged in one economically viable entity. To establish a training program for the staff based on a professionally functional structure and a defined business plan. A special program for funds to finance cooperatives with satisfactory credit facilities is required. The involvement of cooperatives in the agricultural development plan as centers of disseminating modern technology is needed. A new regulation should be enacting to allow the cooperatives to establish and/or participate in agricultural banks and agricultural companies.

4-6-4 Development of Agricultural extension system

Restructuring the agricultural extension system and laying down a detailed business plan for its reform. This includes preparing and executing intensive programs for the training of extension agents in the different specializations; To Introduce a transparent mechanism for monitoring and evaluating extension activities, with the participation of concerned stakeholders; Integrating private sector participation in extension activities. Incentives to extension workers should be based on their achievements. A special TV

channel to agricultural communication and information, or expanding agricultural programs broadcasted over the present TV channels should be established.

4-7-5 -Required Investments Under the Two Proposed Scenarios:

The First conservative scenario supposes to grow agricultural sector by 3.5%, while the second optimistic scenario hypothesizes that the sector will grow at 5% a year. The cumulative investments for one decade is estimated at constant prices of 2006 are 198 and 231 billion Egyptian pounds, respectively. These estimates based upon, that the capital-Output coefficient is 1.8, and amortization rate is 7.5%, Investment expenditure in the base period (2007-2008) was around 8.5 billions EGP to achieve a growth rate of 3.65%. and the estimated response of the relation between investment expenditure in the agricultural sector and achieved growth rates during the time series 1970 – 2005

4-7-6 SWOT Analysis for Egyptian Agro-Food Policies Outlook

4-7-6-1 Concepts of SWOT Analysis

SWOT is an abbreviation for *Strengths, Weaknesses, Opportunities, and Threats*. It is an important tool for auditing the overall strategic position of a business and its environment. Once key strategic issues have been identified, they feed into business objectives, particularly marketing objectives. In other words, It is a simple framework for generating strategic alternatives from a situation analysis. It is applicable to either the corporate level or the business unit level and frequently appears in marketing plans. SWOT (sometimes referred to as (TOWS) stands for *Strengths, Weaknesses, Opportunities, and Threats*. The SWOT framework was described in (the late 1960's by Edmund P. Learned, C. Roland Christiansen, Kenneth Andrews, and William D. Guth) in Business Policy, Text and Cases (Homewood, IL: Irwin, 1969). The General Electric Growth Council used this form of analysis in the 1980's. Because it concentrates on the issues that potentially have the most impact, the SWOT analysis is useful when a very limited amount of time is available to address a complex strategic situation.

The internal and external situation analysis can produce a large amount of information, much of which may not be highly relevant. The SWOT analysis can serve as an interpretative filter to reduce the information to a manageable quantity of key issues. The SWOT analysis classifies the internal aspects of the company as strengths or weaknesses and the external situational factors as opportunities or threats. Strengths can serve as a foundation for building a competitive advantage, and weaknesses may hinder it. By understanding these four aspects of its situation, a firm can better leverage its strengths, correct its weaknesses, capitalize on golden opportunities, and deter potentially devastating threats.

4-7-6-1-1Internal Analysis

The internal analysis is a comprehensive evaluation of the internal environment's potential strengths and weaknesses. Factors should be evaluated across the organization in areas such as:

Company culture, Company image, Organizational structure, Key staff, Access to natural resources position on the experience curve, Operational efficiency, Operational capacity, Brand awareness, Market share, Financial resources, Exclusive contracts, Patents, and trade secrets. The SWOT analysis summarizes the internal factors of the firm as a list of strengths and weaknesses.

4-7-6-2 External Analysis

An opportunity is the chance to introduce a new product or service that can generate superior returns. Opportunities can arise when changes occur in the external environment. Many of these changes can be perceived as threats to the market position of existing products and may necessitate a change in product specifications or the development of new products in order for the firm to remain competitive. Changes in the external environment may be related to:Customers, Competitors, Market trends, Suppliers, Partners, Social changes, New technology, Economic environment, Political and regulatory environment

The last four items in the above list are macro-environmental variables, and are addressed in a PEST analysis. The SWOT analysis summarizes the external environmental factors as a list of opportunities and threats

4-7-6-3 SWOT Profile

When the analysis has been completed, a SWOT profile can be generated and used as the basis of goal setting, strategy formulation, and implementation. The completed SWOT profile sometimes is arranged as follows:

Strengths	Weaknesses
1. 2. 3.	1. 2. 3.
Opportunities	**Threats**
1. 2. 3. .	1. 2. 3. .

When formulating strategy, the interaction of the quadrants in the SWOT profile becomes important. For example, the strengths can be leveraged to pursue opportunities and to avoid threats, and managers can be alerted to weaknesses that might need to be overcome in order to successfully pursue opportunities

4-7-6-4 Multiple Perspectives Needed

The method used to acquire the inputs to the SWOT matrix will affect the quality of the analysis. If the information is obtained hastily during a quick interview with the CEO, even though this one person may have a broad view of the company and industry, the information would represent a single viewpoint. The quality of the analysis will be improved greatly if interviews are held with a spectrum of stakeholders such as employees, suppliers, customers, strategic partners, etc

4-7-6-5 SWOT Analysis Limitations

While useful for reducing a large quantity of situational factors into a more manageable profile, the SWOT framework has a tendency to oversimplify the situation by classifying the firm's environmental factors into categories in which they may not always fit. The classification of some factors as strengths or weaknesses, or as opportunities or threats is somewhat arbitrary. For example, a particular company culture can be either a strength or a weakness. A technological change can be a either a threat or an opportunity. Perhaps what is more important than the superficial classification of these factors is the firm's awareness of them and its development of a strategic plan to use them to its advantage.

4-7-7 SWOT Chart of Egyptian Agro-Food Sector Outlook

	Positives	Negatives
Internal Factors	Strengths: 1- Agricultural land potentiality and reclamation 2- The participation of village leaders 3- Human resource availability 4- Availability of Institutions of agriculture 5- Egyptian quota of Nile and underground water	Weaknesses: 1- Urban demand for agricultural land 2- Water- use efficiency. 3- Agricultural productivity and quality 4- Agricultural finance and investment 5- Agricultural Cooperatives System
External factors	Opportunities: 1- Opportunities of fair Nile agreements with INDIGO 2- Foreign funds to finance investments for agricultural development programs 3- Foreign trade agricultural policies	Threats: 1- Water quality &quantity limits. 2- Imposing unfair Nile-water agreement by INDIGO 3- Conditions of the foreign funds to finance investments 4- Deficit in agricultural trade balance 5- High proportion of imported of subsistent food commodities

4-8 TWOS Chart of the Egyptian Agro-Food Policies Evolution Outlook

Internal Factors / **External Factors**	Weaknesses 1- Urban demand for agricultural land 2- Water- use efficiency 3- Agricultural productivity and quality 4- Agricultural finance and investment 5- Agricultural Cooperatives System	Strengths 1- Agricultural land potentiality and reclamation 2- The participation of village leaders 3- Human resource availability 4- Availability of Institutions of agriculture 5- Egyptian quota of Nile and underground water
Opportunities 1- Opportunities of fair Nile agreements with INDIGO 2- Foreign funds to finance investments for agricultural development programs 3- Foreign trade agricultural policies	W&O policies 1- To Raise Water Use Efficiency for Irrigation 2- Improving Agricultural Productivity 3- Agricultural commodity marketing policy 4- Reforming the Agricultural Cooperatives System	S&O policies 1- Maintaining and protecting agricultural land. 2- Human resources development Via training and research. 3- Proper management of agricultural institutes
Threats 1- Water quality &quantity limits. 2- Imposing unfair Nile-water agreement by INDAGO. 3- Conditions of the foreign funds to finance investments. 4- Deficit in agricultural trade balance. 5- High proportion of imported of subsistent food commodities.	W&T policies 1-Food Security Policies. 2-Improving Opportunities for Agricultural Investment. 4- Reforming civil society organizations dealing with rural development.	S&T policies 1- Institutional reform of Agricultural Sector. 2- Development of Agricultural extension system

5 CONCLUDING REMARKS

Agricultural sector is a major sector in Egypt's national economy. It is responsible for achieving food security, by using human and natural resources with technology and capital in intensive way. The economic reform program has been significant although unequal across sectors. Agriculture has received closer attention than manufacturing and some services, which are only being liberalized gradually. Reform in agriculture, which began in the 1980s, has reduced government control over production, pricing, and distribution. As a result, there appear to be no major remaining restrictions on annual production and most agricultural products appear to be freely tradable. While reforms in the manufacturing sector have continued, they have not been as rapid. All import and export bans and quotas have been abolished.

there was a low growth rate of the Egyptian agricultural production, over the last decade, associated with imbalance between a low share of this sector in GDP and relatively higher share in total employment. Such imbalance implied lower productivity, in terms of average value of agricultural output per agricultural worker, comparing with the national level,), where the agricultural labor productivity reached only 50% of the national one. Egypt has remained a net importer of agricultural products, although its agricultural trade deficit has decreased in recent years

The poverty rates indicate to the concentration of the poor in rural areas and particularly those in Upper Egypt. Even though rural regions are poorer than urban, inequality in income distribution is less in rural than urban regions of Egypt, However, more income distribution equality associated with much less income level than urban, is a disadvantage, as it means that poverty is wide expanded and more deeper in rural than in urban

Several lessons were learned from the application of previous strategies in eighties, nineties and at the onset of this century. The component of price liberalization of the structural reform program has reached its ultimate to great extend, however, the associated institutional reform, suffered from much lag response and needs further reform. The limited water resources have not faced with proper policies towards rationalization of water use. Although small farm holdings are more than 80% of the Egyptian agricultural system, such sector of the majority has not supported with policies that let the stakeholders being adapted with the dramatic changes in agricultural sector and protect them from the negative impacts of market liberalization and globalization.

The newly reclaimed land, which reached about one million hectare, has generated communities lacking of the foundations of settlement and efficient institutional framework as well as efficient marketing system,). The system of distributing the new reclaimed land was biased against the real stakeholders of the agricultural system, i.e. the small farmers and agricultural gradates from either universities or high agricultural schools

The previous strategies have lacked of a proper vision towards achieving sustainable agricultural development through an integrated rural development program. Therefore, unemployment, risky migration to urban or abroad, poverty gap, all has expanded in rural communities, (Soliman, 2010). Environmental impacts on agricultural system in Egypt from the production, marketing and foreign trade dimensions had not received much attention, particularly its impacts on output specifications, yield losses and barriers on exportation

In spite of full privatization of production and marketing firms of the agricultural system in Egypt, the private agricultural enterpriser have not shared in financing the agricultural research institutions in Egypt by any means. Drying most of the area of internal lakes and transformed most of their water area for agricultural production wasted the main source of fish production in Egypt (such lakes were providing 70% of Egypt fish supply) and failed to cultivate economically the dried land. The fault was that the feasibility studies made had denied the valuation on social price and costs of the transformed natural fisheries.

Reluctant development plans for efficient agricultural and food marketing system distorted the implemented plans for raising agricultural productivity. Even high yield was violated with high losses and lack of sufficient specifications and lack of proper grading, sufficient storage, or efficient processing (Soliman, 1998). The lag of issuing the act of protecting competitiveness and prevention of monopoly, for 15 years between liberalization and privatization of the market, in addition to lack of effective mechanism of implementation generated inherited power poles of monopoly in the Egyptian market, (Soliman and Gaber, 2008). Two marketing functions suppose to be monitored by government under free market system. However, both are not conducted at proper effectiveness. These are Market information system, monitoring and control on specifications, grades and safety,. International and regional backgrounds have experienced many changes, most important of which is the international trend towards further liberalization of agricultural trade, this big issue raised extra challenges that faced the agricultural development in Egypt

Even though Land and water resources are the two main natural resources allocated for agricultural production, the later is the most limiting factor. Thereof, it occupies the highest interest in the future vision of Egypt's sustainable agricultural development. The issues on agricultural policies presented in this study provided evidences that to double the agricultural sector growth rate is vitally required. Such target implies both vertical and horizontal development of the sector. Horizontal increase means additional

arable land. However, the water resources availability limits the horizontal expansion. As far as Egypt has a constant quota of Nile water, the available approach is by raising the water use efficiency and looking for nonconventional water resources. Vertical expansion implies to raise the productivity, which in turn, relay upon the potential yield in comparison with the existing yield, either for crops or for livestock. Such potential yield is approached via improvement of farming practices, input intensification and bio-technology, which means to cultivate high yield varieties and introducing improved genetic makeup of livestock, (Soliman, et al, 2006)

The future prospects have three milestones. Raising irrigation water efficiency and maintaining agricultural land resource associated with institutional reform and policy adjustment program.

The future prospects has two scenarios. Scenario-1 is conservative in reaching moderate quantitative goals of agricultural development, within a decade for each one of them.. The second is optimistic in reaching such goals. Both stem from a base period (2007-2008). The first scenario leads to expand the cropped area from 6.4 million hectares in the base period to 8.1 million hectares. The second Scenario leads to 9.8 million hectares. The Intensification rate of the cropping pattern will be raised from 183% to 198% under Scenario-1 and 199%, under scenario-2.

The First conservative scenario supposes to grow agricultural sector by 3.5%, while the second optimistic scenario hypothesizes that the sector will grow at 5% a year. The cumulative investments for one decade is estimated at constant prices of 2006 are 198 and 231 billion Egyptian pounds, respectively. These estimates based upon, that the capital-Output coefficient is 1.8, and amortization rate is 7.5%, Investment expenditure in the base period (2007-2008) was around 8.5 billions EGP to achieve a growth rate of 3.65%. and the estimated response of the relation between investment expenditure in the agricultural sector and achieved growth rates during the time series 1970 – 2005

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ANNEX 1: Figures

Figure 1

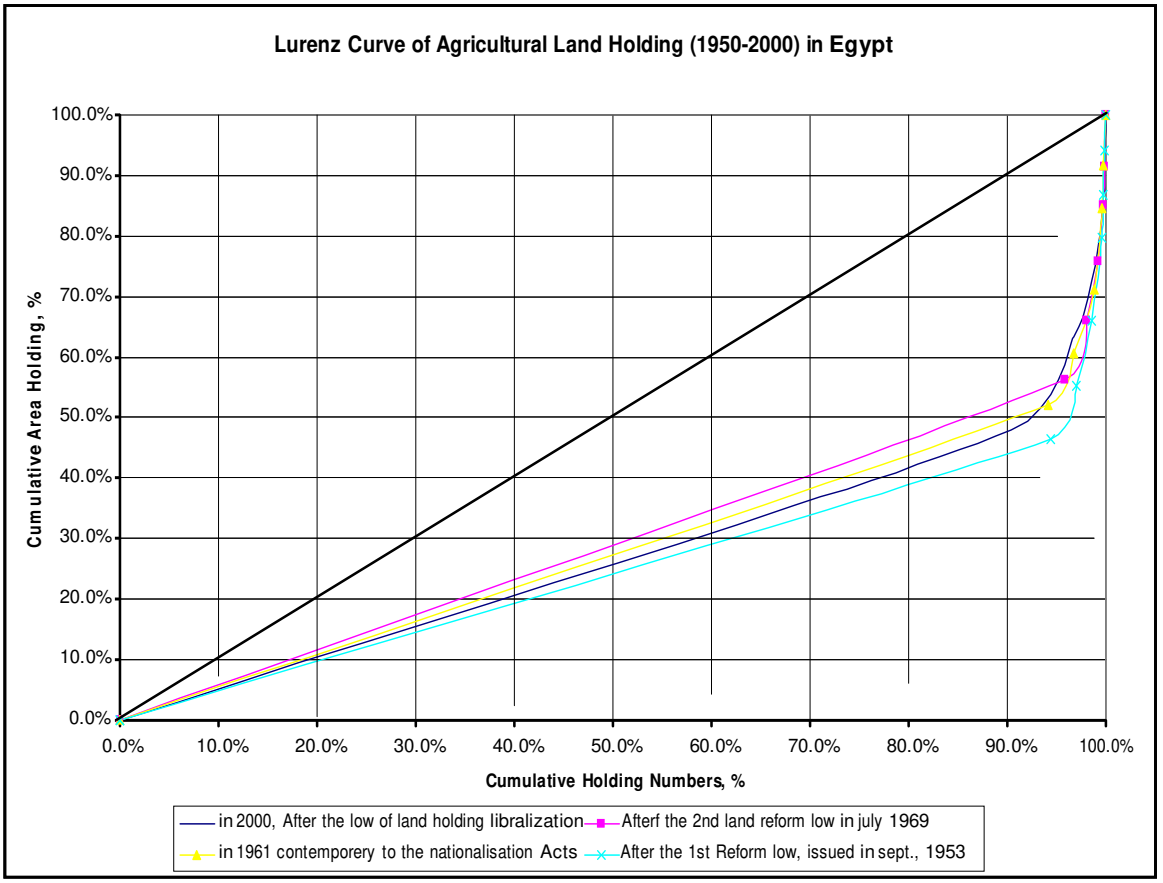

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Figure 2

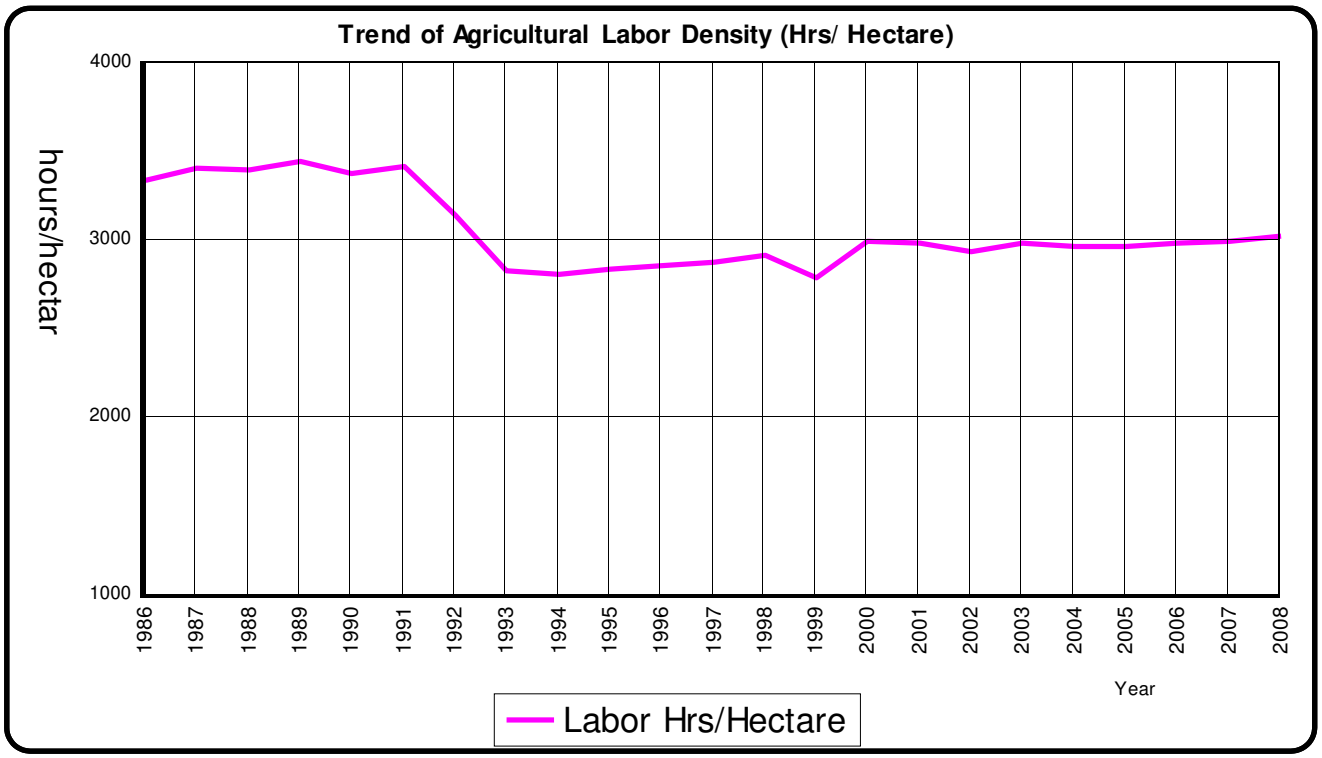

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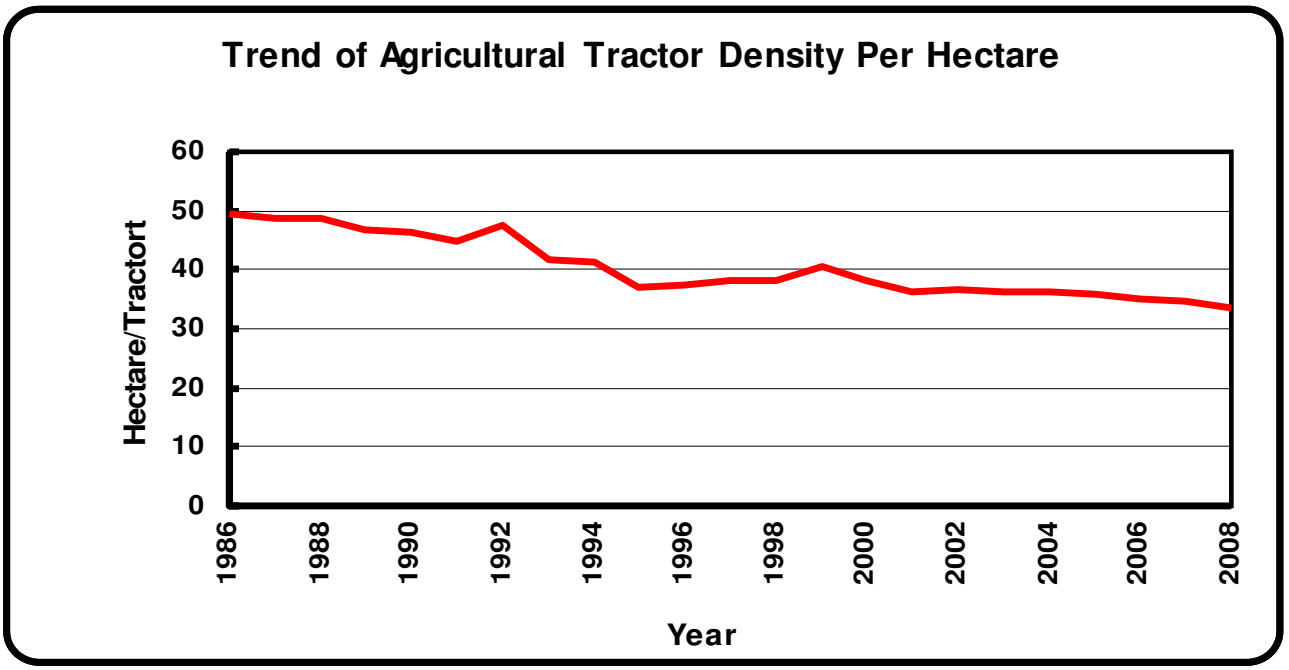
Figure 3



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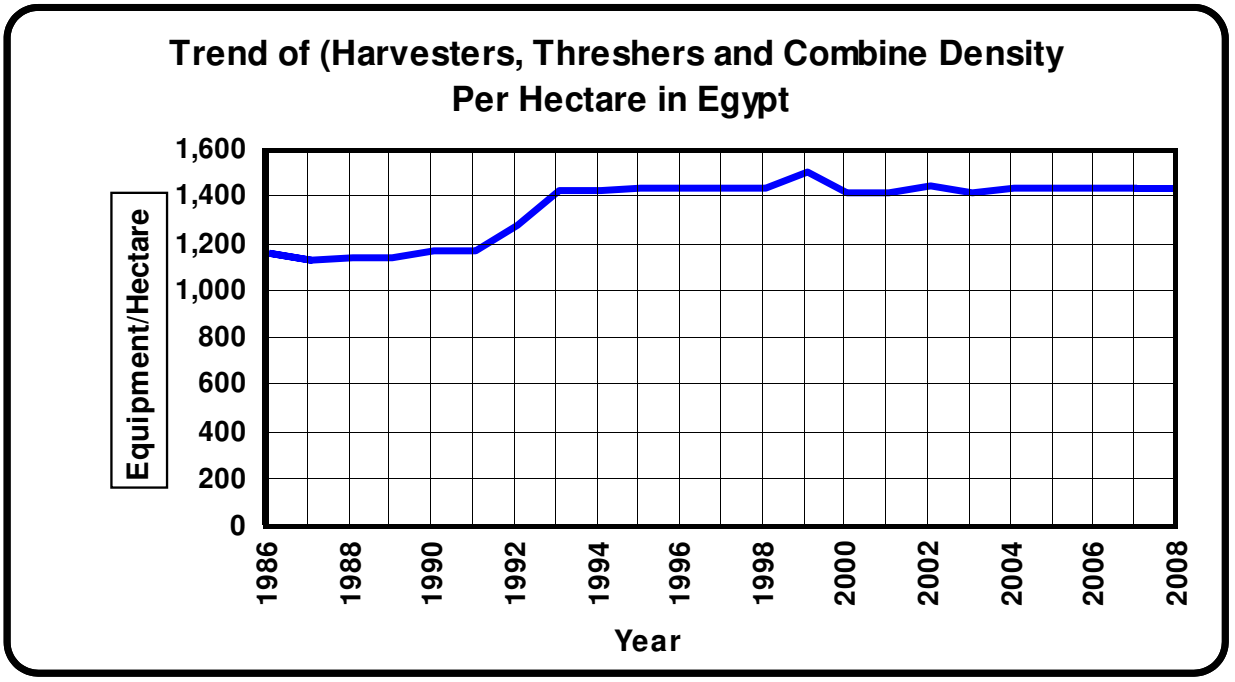

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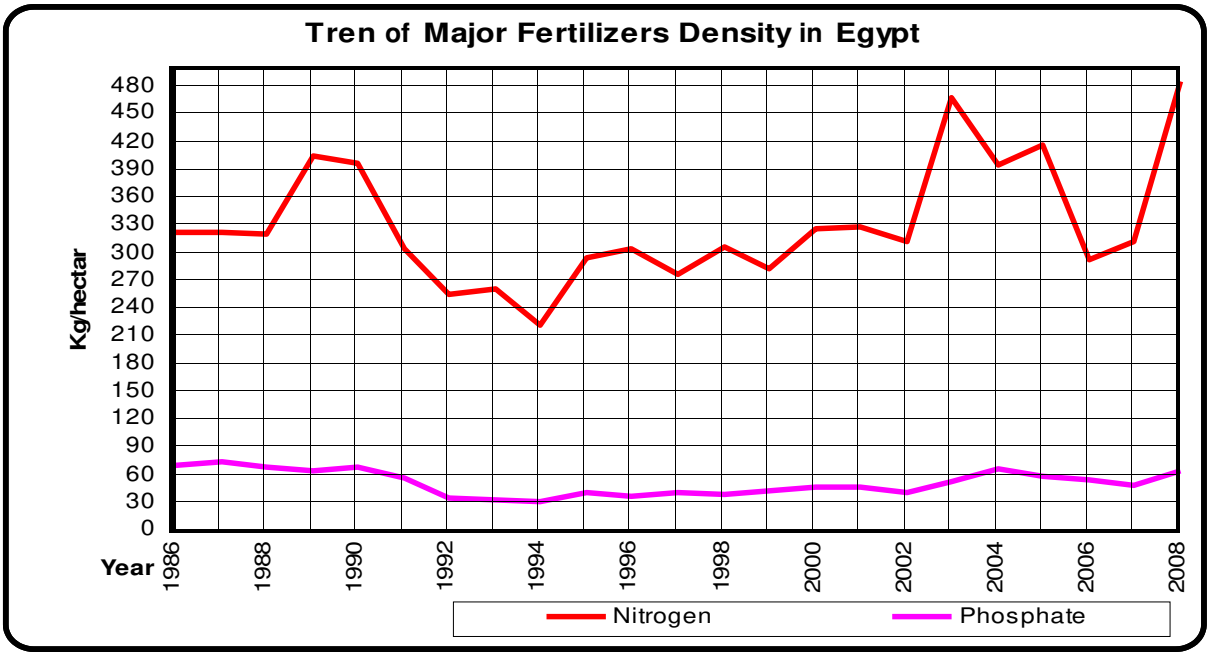

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ANNEX 2 ANALYTICAL SUMMARY TABLES

Table **32**)

Table 1 Role of agricultural Sector in Employment

Period	Total Economically Active Population (000)	GDP/ Worker	Employed in Agricultural (000)	%(Employed in Agriculture)/ total	Agricultural output/ Agricultural Worker
1995	18531	3,224	6489	35%	1,568
1996	18850	3,761	6455	34%	1,801
1997	19169	4,105	6417	33%	2,012
1998	19489	4,159	6377	33%	2,189
1999	20559	4,254	6599	32%	2,255
2000	20935	4,514	6577	31%	2,343
2001	21242	4,301	6544	31%	2,260
2002	22136	3,887	6700	30%	2,106
2003	22828	3,616	6760	30%	1,919
2004	23504	3,326	6807	29%	1,724
2005	24160	3,753	6839	28%	1,915
2006	24757	4,534	6847	28%	2,307
2007	25559	4,864	6900	27%	2,702
Annual Average	21671	4,039	6639	31%	2,087

Source; Calculated from: FAOSTAT; Statistical Data Base, FAOSTAT | © FAO Statistics Division 2010 | 22 August 2010www.FAO.org

Table 2 Role of Agricultural Output and Trade in the Egyptian GDP and total Foreign Trade

Period	Population, Million (2)	Exchange rate (1$/EGP) (1)	Total GDP Million US$(2)	Agricultural GDP Million US$	% (agriculture Output)/GDP	Total Exports Million US$ (3)	Agricultural Exports Million US$ (3)	% (agricultural exports)/ Total	Total Imports Million US$ (3)	Agricultural Imports Million US$ (3)	% (agricultural imports)/ Total
1995	57	3.391	59749	10177	17%	4957	536	11%	11739	3370	29%
1996	58	3.392	70896	11623	16%	4609	521	11%	14107	3863	27%
1997	59	3.39	78684	12910	16%	5345	442	8%	15565	3459	22%
1998	61	3.388	81063	13958	17%	5128	572	11%	16899	3557	21%
1999	62	3.42	87463	14880	17%	4445	586	13%	17008	3665	22%
2000	63	3.43	94492	15407	16%	6388	518	8%	17861	3532	20%
2001	65	3.76	91371	14789	16%	7068	620	9%	16441	3338	20%
2002	66	4.33	86049	14110	16%	6643	772	12%	14644	3438	23%
2003	67	5.13	82548	12970	16%	8205	938	11%	14821	2741	18%
2004	69	6.158	78171	11735	15%	10453	1314	13%	17975	3014	17%
2005	70	5.997	90682	13095	14%	13833	1169	8%	24193	3948	16%
2006	71	5.753	112254	15794	14%	18455	1088	6%	30441	3890	13%
2007	74	5.714	124324	18643	15%	19224	1503	8%	37100	5440	15%
Annual Average	65	4	87519	13853	16%	8827	814	9%	19138	3635	19%

Source: Calculated from: (1) Central Bank of Egypt, Annual Report, Several Issues, August 2010, (2) Ministry of Economic Development, Egypt: Annual Statistical Reports, (3) FAOSTAT; Statistical Data Base, FAOSTAT | © FAO Statistics Division 2010 | 22 August 2010www.FAO.org.

Table 3 Time Trend of GPD, Agricultural output and Foreign Trade, ($ Million), (1995-2007)

Estimate	Parameter	Coefficient	S.E.	t	Adjusted R Square	F	Annual Average)	% Growth Rate
GDP	ά	67,235	5,568	12.08	0.59	18.4	87,519	3.9%
	ß	3,381	787	4.29				
Agricultural Output Value	ά	11,855	950	12.47	0.30	6.10	13,853	2.4%
	ß	333	134	2.48				
Total Exports	ά	1,821	1,344	1.35	0.8	37.76	8,827	13.2%
	ß	1,168	190	6.15				
Agricultural Exports	ά	1,821	1,344	1.35	0.75	37.77	3,941	2.1%
	ß	1,168	190	6.15				
Total Imports	ά	10,435	2,471	4.22	0.57	17.2	19,138	7.6%
	ß	1,450	349	4.15				
Agricultural Imports	ά	3,274	326	10.05	0.06	1.70	3,635	1.7%
	ß	60	46	1.31				

Source; Estimated from (Table 1) and (Table 2)

Table 4 Population Structure and growth Rate by Demographic Category in Egypt (1986-2009)

Population Structure	1986		2009		Annual Growth Rate %
	(000) Habitant	% Of Total Population	(000) Habitant	% Of Total Population	
Total Population	52,063	100%	82,999	100%	2.0%
Urban	22,884	44%	35,458	43%	1.9%
Rural	29,179	56%	23,744	57%	2.1%
Agricultural	25,607	49%	23,798	29%	-0.3%
Non Agricultural	3,572	7%	47,542	29%	8.2%
Total non-agriculture	26,456	51%	59,256	71%	3.5%

Source; Calculated From: FAOSTAT; Statistical Data Base, FAOSTAT | © FAO Statistics Division 2010 | August 2010www.FAO.org, and Ministry of Agricultural and land Reclamation, Egypt (2010) Economic Affairs Sector

Table 5 Indicators of Standard of Living in Egyptian Rural and Urban Regions

Economic Indicators	2000		2005	
	Urban	Rural	Urban	Rural
Average Value/ Kg of Food Consumed	2.73	1.43	2.97	2.29
Annual Food Prices Inflation rate%			2.10%	9.40%
Annual Per Capita Expenditure (L.E.)	2,653	1,455	2,769	2,328
% Expenditure (Rural/Urban), where 2000 = 100	100%	55%	100%	84%
Annual growth rate between the two successive periods (%)			0.90%	7.71%
Real Annual Per Capita Expenditure (L.E.)	2,653	1,455	2,391	928
% Expenditure (Rural/Urban), where 2000 = 100	100%	55%	100%	39%
Annual Economic Growth Rate between 2000 and 2005 (%)			-2%	-9%

Source; Estimated from Center for Statistics and Mobilization (CAPMAS), “The Household Budget survey of Egypt”, the surveys of 2000 and 2005, Cairo, Nasr City, Egypt

Table 6 Role of Agriculture in Rural Household's Income

Source of Income		Urban	Rural	All sample
Agricultural Income	Owned Agricultural land	9.57	44.53	28.06
	Agricultural machinery	2.38	2.92	2.66
	Agricultural projects	1.74	1.13	1.41
	Farm animals	2.13	13.39	8.09
	Subtotal (1)	15.82	61.97	40.22
Other sources of Income	Residential buildings	6.38	1.62	3.86
	Financial activities	19.54	10.71	14.87
	Commercial projects	24.05	7.52	15.31
	Subtotal (2)	49.97	19.85	34.04
	Wages & Salaries (3)	34.21	18.18	25.74
Total I (L.E./Household/Year)		100	100	100

Source: calculated from: Had-hood, A. Mashhour, A, (1999) "Specification of Income sources of Egyptian Households" Egyptian. Journal of Applied Science, 14 (1)

Table 7 Income distribution and poverty in Urban and Rural of Egypt

Region	Expend/ Capita (EGP)	Income Share		Gini Coefficient	Poor persons (of total population %)		Wages of poor households (%) of	
		Lowest 40% of people	% (highest 20% /lowest 20%)		Ultra poor	Total	Their income	Total wages
Urban Govern. S	5832	20.10%	5.40%	35%	0.50%	6.90%	43.50%	4.60%
Lower Egypt	3556	26.30%	3.00%	23%	2.00%	14.20%	41.00%	10.30%
Urban	4327	15.10%	8.00%	27%	0.80%	7.30%	38.40%	4.90%
Rural	3275	32.30%	1.80%	20%	2.50%	16.70%	41.40%	12.50%
Upper Egypt	2916	23.40%	4.00%	28%	12.80%	36.90%	41.00%	27.70%
Urban	3879	12.80%	11.00%	33%	6.30%	21.30%	41.60%	14.70%
Rural	2501	43.7%%	1.90%	23%	15.60%	43.70%	40.90%	34.60%
Egypt	3712	22.30%	4.40%	31%	6.10%	21.60%	41.30%	15.20%
Urban	4843	20.70%	5.10%	34%	2.60%	11.00%	41.40%	7.20%
Rural	2924	26.00%	3.10%	22%	8.50%	28.90%	41.20%	21.80%

Source: Ibrahim Soliman," Soliman (2010) "Human Development Indicators in Rural Egypt" SUSTAINMED Working Paper No 02, Ver2 18-12-2010.

Table 8 Internal Migration as % of total population in 2008

Region	internal migration	Region	Internal migration
Cairo	11.9	Beni Suif	2.2
Alexandria	6.7	Fayoum	0.6
Port Said	34	Menia	0.7
Suez	37.9	Asyut	1.2
Ismailia	31.3	Suhag	0.6
Damietta	5.4	Qena	1.4
Dakahlia	1.9	Luxor	1.3
Sharkia	4.6	Region	3.6
Kalyoubia	14.4	Red sea	28.7
Kafr El Sheikh	2.6	New valley	16.7
Gharbia	1.7	Matrouh	13.5
Menoufia	2.1	North Sinai	14.1
Behera	4.1	South Sinai	27.4
Giza	20.4	EGYPT	6.6

Source: collected from data of several issues of "The official Labor Force Survey", carried on a quarterly basis

Table 9 Aggregate Cropping Pattern of Egypt in the Agricultural Year 2008/2009

Agricultural Land (000) Hectares						**Cropped Area (000) Hectares**			**Agricultural Land By Season (000) Hectares**					
Non-Perennial Crops			Permanent Total						**Winter**		**Summer**		**Nili**	
New land	old land	Total	New land	old land	Total	New land	Old land	Total	New land	old land	New land	old land	New land	old land
1,104	2,587	3,690	444	362	805	1,622	4,889	6,510	660	2,225	470	2,055	49	247
30%	70%	100%	12%	10%	22%	147%	189%	176%	18%	60%	13%	56%	1%	7%

Source: Ministry of Agricultural and land Reclamation (2010) Economic Affairs Sector, Cairo, Egypt

Table 10 Permanent Crops in the Agricultural Year 2008/2009

Crop	Region	(000) Hectare	%
Sugar Cane	New land	15	1.9%
	Old land	118	14.6%
Orchards	New land	370	45.9%
	Old land	221	27.5%
Palms	New land	17	2.1%
	Old land	20	2.4%
Alfalfa	New land	31	3.9%
	Old land	3	0.4%
Wood Trees	New land	10	1.2%
	Old land	0.3	0.0%
Total		806	100.0%

Source: Ministry of Agricultural and Land reclamation, (2010) Sector of Economic Affairs, Agriculture Directorates of Governorates, Dokki, Cairo, Egypt

Table 11 Agro-Food Production, Trade, consumption, and self Sufficiency in Egypt in 2009
Source: Compiled and Calculated from: FAOSTAT | © FAO Statistics Division 2011 | 04 January 2011, http://faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368#ancor

Table 12 Per Capita Nutrient Intake per Day in Egypt in 2009

Food Item	Per Capita Food Consumption					
	(kcal/day)		Protein (gm/day)		Fat (g/day)	
	Kcal	% of total	gram	% of total	gram	% of total
Grand Total	3195	100%	92.4	100%	55	100%
Total Vegetal Products	2918	91%	71.9	78%	35.7	65%
Total Animal Products	276	9%	20.5	22%	19.3	35%
Total Cereals	2023	63%	55	60%	14.1	26%
Wheat	1093	34%	33.1	36%	14.1	26%
Rice (Milled Equivalent)	388	12%	7.5	8%	5.8	11%
Maize	517	16%	13.6	15%	7.3	13%
Total Starchy Roots	245	8%	0	0%	0	0%
Total Sugar & Sweeteners	245	8%	0	0%	0	0%
Total Pulses	65	2%	4.9	5%	0.3	1%
Total Tree nuts	51	2%	2.1	2%	4.4	8%
(Total Oil crops	51	2%	2.1	2%	4.4	8%
Total Vegetables	126	4%	6	6%	1	2%
Total Fruits	169	5%	2.1	2%	0.8	1%
Bovine Meat	44	1%	4.3	5%	2.8	5%
Mutton & Goat Meat	5	0.2%	0.3	0.3%	0.4	1%
Poultry Meat	34	1.1%	2.9	3%	2.3	4%
Other Meat	6	0.2%	0.7	1%	0.3	1%
Editable Offal	6	0.2%	1.1	1%	0.2	0%
Butter, Ghee	36	1%	0	0%	4.1	7%
Raw Animals Fats	6	0.2%	0	0%	0.6	1%
Total Eggs	9	0.3%	0.7	1%	0.7	1%
Total Milk, excluding Butter	101	3%	5.7	6%	6.8	12%
Total Fish and Seafood	29	1%	4.6	5%	1	2%

Source; Calculated from: FAOSTAT | ©FAO Statistics Division 2011
http://faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368#ancor

Table 13 Comparison between Egypt Agro-Food Yields versus World Average in 2009

Crops	Crop	ton/Hectare	
		Egypt	World
Cereals	Wheat	6.5	3
	Barley	3.4	2.8
	Rice	9.6	4.2
	Maize	8	4.2
	Sorghum	5.5	1.4
Legumes	Broad Bean	3.4	1.6
	Lintels	1.9	1
sugars	Sugar Beet	48.3	53.1
	Sugar Cane	116.4	70.9
Fibers	Cotton	2.4	2.1
Oils	Ground Nuts	40.7	1.5
	Sesame	10.3	0.5
	Soy Bean	3.6	2.2
	Sun flower	2.4	1.3
Vegetables	Onion	24	1.8
	Garlic	32.6	1.3
	Tomatoes	44.3	2.8
	Green peas	11	0.8
	Cabbage	0	2.2
	Egg Plant	28.4	1.8
	Green Pepper	16.9	0.8
	Potatoes	26.2	18
	Okra	14.4	0.7
Fruits	Oranges	10	16.1
	Dates	15	5.75

Source: (MALR) Ministry of agriculture and land reclamation, Egypt (2010), Agricultural Statistical Bulletin

Table 14 Winter Crops Area in the Agricultural Year 2008/2009

Crop	Region	(0000) Hectare	%
Wheat	Old land	1,115	45.70%
	New land	221	9.00%
Clover	Old land	556	22.80%
	New land	82	3.40%
Sugar Beet	Old land	177	7.30%
	New land	42	1.70%
Broad Beans	Old land	158	6.50%
	New land	27	1.10%
Barley	Old land	8	0.30%
	New land	87	3.60%
Lentil	Old land	2	0.10%
	New land	0	0.00%
Others	Old land	144	5.90%
	New land	10	0.40%
Total	Total	2,441	100%

Source: Ministry of Agricultural and Land reclamation (2010) Sector of Economic Affairs, Agriculture Directorates of Governorates, Dokki, Cairo, Egypt

Table 15 Summer Crops Area in the Agricultural Year 2008/2009

Crop	Region	Feddan	Hectare	(000) Hectare	%
Maize	Old land	1,546,525	649,541	650	36.0%
	New land	174,493	73,287	73	4.1%
Rice	Old land	1,329,658	558,456	558	31.0%
	New land	39,580	16,624	17	0.9%
Sorghum	Old land	318,549	133,791	134	7.4%
	New land	14,640	6,149	6	0.3%
Cotton	Old land	277,370	116,495	116	6.5%
	New land	7,064	2,967	3	0.2%
Yellow Corn	Old land	195,507	82,113	82	4.6%
	New land	67,041	28,157	28	1.6%
Peanuts	Old land	34,098	14,321	14	0.8%
	New land	117,755	49,457	49	2.7%
Sesame	Old land	34,127	14,333	14	0.8%
	New land	64,658	27,156	27	1.5%
Sun Flower	Old land	27,400	11,508	12	0.6%
	New land	12,248	5,144	5	0.3%
Onion	Old land	11,478	4,821	5	0.3%
	New land	5,078	2,133	2	0.1%
Soybeans	Old land	16,799	7,056	7	0.4%
	New land	256	108	0	0.0%
Total		4,294,324	1,803,616	1,804	100.0%

Source: Ministry of Agricultural and Land reclamation, (2010) Sector of Economic Affairs, Agriculture Directorates of Governorates, Dokki, Cairo, Egypt

Table 16 Nili Crops Area in the Agricultural Year 2008/2009

Crop by Region		Total	%
Maize	New land	11	7.4%
	Old land	106	68.6%
Sorghum	New land	0	0.1%
	Old land	1	0.8%
Rice	New land	0.37	0.2%
	Old land	0.01	0.0%
Corn	New land	12	7.7%
	Old land	24	15.3%
Total		155	100%

Source: Ministry of Agricultural and Land reclamation, (2010) Sector of Economic Affairs, Agriculture Directorates of Governorates, Dokki, Cairo, Egypt

Table 17 Winter Vegetables Area in the Agricultural Year 2008/2009

Crop by Region		(000) Hectare	%
Tomato	New Land	63	18%
	Old land	49	14%
Potatoes	New Land	17	5%
	Old land	48	14%
Onion	Old land	34	10%
	New land	18	5%
Green Beans	New land	12	4%
	Old land	13	4%
Egg Plant	New land	9	3%
	Old land	8	2%
Green Beans	New land	12	4%
	Old land	4	1%
Pepper	New land	8	2%
	Old land	7	2%
Cabbage	New land	4	1%
	Old land	11	3%
Squash	New land	7	2%
	Old land	5	2%
Garlic	Old land	7	2%
	New land	0.3	0.10%
Strawberry	New land	2	1%
	Old land	3	1%
Total		342	100%

Source: Ministry of Agricultural and land Reclamation (2010) Economic Affairs Sector, Dokki, Cairo, Egypt

Table 18 Summer Vegetables Area in the Agricultural Year 2008/2009

Crop by Region		(000) Hectare	%
Seeds Water Mellon	New land	9	2%
	Old land	64	17%
Strawberry	New land	0.33	0.09%
	Old Land	70	18%
Tomatoes	New land	44	11%
	Old Land	9	2%
Potatoes	New land	42	11%
	Old land	0.02	0.01%
Water melon	New land	27	7%
	Old land	10	3%
Red Pepper	New land	14	4%
	Old land	10	3%
Onion	New land	4	1%
	Old land	23	6%
Egg Plant	New land	7	2%
	Old land	15	4%
Squash	New land	11	3%
	Old land	8	2%
Cantaloupe	New land	15	4%
	Old land	3	1%
Total		385	100%

Source: Ministry of Agricultural and land Reclamation (2010) Economic Affairs Sector, Dokki, Cairo, Egypt

Table 19 Nile Vegetables Area in the Agricultural Year 2008/2009

Crop by Region		(000) Hectare	%
Tomato	New Land	10	10%
	Old land	17	19%
Potatoes	New Land	1	1%
	Old land	23	25%
Egg Plant	New land	4	4%
	Old land	4	4%
Pepper	New land	4	4%
	Old land	3	3%
Dry Beans	New land	0	0.00%
	Old land	6	7%
Onion	Old Land	5	5%
Green Beans	New land	1	1%
	Old land	3	3%
Squash	New land	1	1%
	Old land	3	3%
Cabbage	New land	0.3	0.40%
	Old land	3	4%
Cucumber	New land	1	1%
	Old land	2	2%
Strawberry	New Land	1	1%
	Old land	0.1	0.10%
Total		91	100%

Source: Ministry of Agricultural and land Reclamation (2010) Economic Affairs Sector, Dokki, Cairo, Egypt

Table 20 Livestock Production in Egypt in 2008

Item	Stock	Milk	% of	Yield	Production	% of	% of producing	Yield (Kg/An):
Milk Production								
Buffalo	4	1.65	41%	1600	2641	44%	1.31	1.05
Cattle	5	1.7	34%	1862	3211	53.90%	1.69	0.89
Sheep	5.5	1.88	34%	49.4	93	1.60%	1.83	1.1
Goat	4.55	1.06	23%	14.2	15	0.30%	1.13	0.17
Total	19.05	6.29	33%	948	5960	100%		
Meat Production								
Buffalo	4	1.55	39%	174	270	38%	3.04	1.26
Cattle	5	1.69	34%	200	338	47%	1.59	0.95
Sheep	5.5	1.7	31%	25	43	5.90%	0.64	1.6
Goat	4.55	0.97	21%	18.5	18	2.50%	0.47	1.49
Camel	0.11	0.13	118%	348	45	6.30%	17.45	1.7
Pig Meat	0.04	0.07	193%	30	2	0.30%	1.36	0.38
Total	19.198	6.11	32%	117	716	100%		
Hide Production								
Buffalo	4	1.55	39%	20	31	43%	2.31	0.74
Cattle	5	1.69	34%	20	34	47%	1.51	0.79
Sheep	5.5	1.7	31%	3	5	7%	0.62	0.08
Goat	4.55	0.97	21%	2.5	2	3%	0.43	0.1
Total	19.05	5.91	31%	12	73	100%		

Source: FAOSTAT | © FAO Statistics Division 2011 | 22 January 2011

Table 21 Indicators of Egypt Comparative Advantage in Milk Production

year	Buffalo Milk			Cow Milk			Buffalo/ Cow
	Farm Price ($/ton)		Nominal Protection	Farm Price ($/ton)		Nominal Protection	
	Egypt	World		Egypt	World		
1991	337.79	368.65	0.92	334.61	383.71	0.87	1.05
1992	334.16	414.33	0.81	312.79	378.93	0.83	0.98
1993	344.52	874.56	0.39	313.50	445.57	0.70	0.56
1994	355.08	461.75	0.77	314.02	354.34	0.89	0.87
1995	383.23	550.07	0.70	316.61	395.83	0.80	0.87
1996	398.06	590.61	0.67	309.30	406.11	0.76	0.88
1997	398.38	643.77	0.62	309.55	411.39	0.75	0.82
1998	442.74	728.69	0.61	344.16	399.99	0.86	0.71
1999	441.79	813.82	0.54	343.42	395.29	0.87	0.62
2000	432.02	800.37	0.54	335.83	381.23	0.88	0.61
2001	402.72	805.36	0.50	312.86	377.99	0.83	0.60
2002	368.92	824.70	0.45	286.69	391.40	0.73	0.61
2003	316.19	1077.44	0.29	259.79	445.65	0.58	0.50
2004	326.59	1146.88	0.28	270.94	490.43	0.55	0.52
2005	363.56	1239.52	0.29	304.29	515.58	0.59	0.50

Source: Calculated from: Statistical Data Base of Internet Site (www.fao.org)

Table 22 Indicators of Egypt Comparative Advantage in Meat Production

year	Buffalo Meat			Cow Meat			Buffalo/ Cow
	Farm Price ($/ton)		Nominal Protection Coefficient	Farm Price ($/ton)		Nominal Protection Coefficient	
	Egypt	World Average		Egypt	World Average		
1991	2263.86	2631.73	0.86	2333.33	3032.97	0.77	1.12
1992	2197.64	3012.92	0.73	2257.85	2908.69	0.78	0.94
1993	2647.86	3205.30	0.83	2350.17	2887.81	0.81	1.02
1994	2782.76	3185.91	0.87	2383.95	2569.11	0.93	0.94
1995	2928.77	3580.93	0.82	2626.61	2869.79	0.92	0.89
1996	3087.15	3718.61	0.83	2703.83	2854.89	0.95	0.88
1997	3083.73	3452.89	0.89	2773.88	2720.41	1.02	0.88
1998	3019.48	3462.25	0.87	2780.40	2684.90	1.04	0.84
1999	3163.24	3990.13	0.79	2736.18	2729.14	1.00	0.79
2000	3335.21	3913.60	0.85	2911.82	2614.83	1.11	0.77
2001	2937.33	3848.48	0.76	2975.08	2643.33	1.13	0.68
2002	3381.36	3811.63	0.89	3015.78	2786.91	1.08	0.82
2003	2998.70	4737.41	0.63	2678.23	3137.42	0.85	0.74
2004	3213.48	5093.18	0.63	2873.11	3473.73	0.83	0.76
2005	3733.39	5449.09	0.69	3258.37	3736.11	0.87	0.79

Source: Calculated from: Statistical Data Base of Internet Site (www.fao.org)

Table 23 Poultry Meat Production in Egypt in 2008

Item	Stock	(000) Bird	% of producing Birds	Kg/Bird	Production (Ton)	% of Total	% of producing Animals: (Egypt)/(World)	Yield (Kg/An): (Egypt)/(World)
Chicken	96000	455,902	475%	1.38	628,799	81%	0.79	0.89
Goose	NA	10,000	NA	4.2	42,000	5%	NA	1.06
Ducks	NA	15,000	NA	2.6	39,000	5%	NA	1.78
Rabbit	NA	58,200	NA	1.2	69,840	9%	NA	0.84
Total	NA	539,102	NA	1.4	779,639	100%	NA	NA

Source: FAOSTAT | © FAO Statistics Division 2011 | 22 January 2011

Table 24 Table Eggs Production

Item	Laying Hens (000)	Eggs/Hen	(000) Eggs	Yield (Kg/An): (Egypt)/(World)
Eggs Production	25,152	278	7,000,000	1.40

Source: Source: FAOSTAT | © FAO Statistics Division 2011 | 22 January 2011

Table 25 Relation between Relative Distributions (%) of both Farm size and Cattle Population (%)

Land Holding Size (Hectare)	Cattle Herd Size (Head)						
	<5	5-10	11–50	51–100	>100	Total	Cumulative distribution
Landless	1.5	2.95	1.32	0.14	0.12	6.12	12.15
<0.5 Hectare	19.95	2.15	0.46	0.03	0.07	22.67	6.12
0.5–2	32.93	11.11	2.02	0,09	0.12	46.26	28.8
2.5–4	5.97	6.19	2.74	0.14	0.31	15.35	75.06
4.5–21	1.07	2.13	2.91	0.25	1.02	7.38	90.41
21.5–142	0.02	0.06	0.31	0.11	0.3	0.8	97.79
>42	0.01	0.02	0.16	0.07	1.15	1.41	98.59
Total	61.45	24.61	9.93	0.83	3.18	100	100
Cumulative distribution		86.06	95.99	96.82	100		

Source: computed from: MALR (2007), Department of Economic Affairs, Livestock, poultry statistics bulletin

Table 26 Relation between Relative Distributions (%) of both Farm size and Buffalo Population (%)

Land Holding Size (Hectare)	Cattle Herd Size (Head)						Cumulative distribution
	<5	5-10	11–50	51–100	>100	Total	
Landless	13.98	2.02	1.01	0.13	0.12	17.26	17.26
<1 Hectare	23.96	1.7	0.38	0.04	0.02	26.1	43.36
1–5	34.07	9.47	1.74	0.08	0.05	45.42	88.78
6–10	2.89	2.56	1.09	0.06	0.09	6.69	95.47
11 – 50	0.78	1.19	1.42	0.12	0.22	3.73	99.2
>50	0.01	0.02	0.21	0.07	0.43	0.74	99.94
Total	75.7	16.99	5.86	0.5	0.96	100	100
Cumulative distribution	75.7	92.69	98.55	99.05	100		

Source: Ministry of Agriculture and Land Reclamation (2009) "Agricultural Statistics Bulletin" , Issued annually by The Economic Affairs Sector, Dokki, Cairo, Egypt

Table 27 Distribution Pattern of Agricultural Land Holdings before and After Land Reform Low

Land holding Category	Before 19952		After the 1st Reform low, in 1953	
	(Numbers) %	(Area) %	(Numbers) %	(Area) %
< 2 feddans	94.3%	35.4%	94.4%	46.5%
2-	97.1%	44.2%	97.0%	55.3%
4-	98.8%	54.9%	98.6%	66.0%
8-	99.6%	65.8%	99.6%	79.7%
21-	99.8%	73.0%	99.8%	86.9%
42-	99.9%	80.3%	99.9%	94.1%
84+	100%	100%	100%	100%
Gini Coefficient	61.1%		49.4%	

Source: Compiled and Calculated from: Ministry of Agriculture and Land Reclamation (2009) "Annual Agricultural Statistics Bulletin" , the Economic Affairs Sector, Dokki, Cairo, Egypt

Table 28 Distribution Pattern of Agricultural Land Holdings (1969-2000)

Land holding Category	contemporary to the nationalization Acts in 1961		After the 2nd land reform low in July 1969		in 2000, After the low of land holding liberalization	
	(Numbers) %	(Area) %	(Numbers) %	(Area) %	(Numbers) %	(Area) %
< 2 feddans	94.1%	52.1%	95.8%	56.3%	90.4%	47.8%
2-	96.7%	60.6%	98.1%	66.0%	96.7%	63.4%
4-	98.8%	71.2%	99.2%	75.8%	98.9%	75.2%
8-	99.6%	84.7%	99.7%	85.0%	99.7%	85.5%
21-	99.8%	91.8%	99.9%	91.5%	99.9%	89.5%
42-	100.0%	100%	100.0%	100.0%	100.0%	100.0%
Gini Coefficient	43.3%		40.3%		44.9%	

Source: Compiled and calculated from: Ministry of Agriculture and Land Reclamation (2009) "Annual Agricultural Statistics Bulletin" the Economic Affairs Sector, Dokki, Cairo, Egypt

Table 29 Increase in Rice Yield at 10% increase of Major Inputs with the Input level per hectare

	1986		1997	
Input	% increase in Yield at 10% increase of Input	Input density per Hectare	% increase in Yield/ 10% increase in Input	Input density per Hectare
Human Labor (Man-hour)	4%	107	0.8%	80
Machinery Labor (HP)	1,9%	31	2.7%	42
Animal Work (HP)	0.9%	21	0.0%	8
Nitrogen Fertilizer (Kg Nitrogen)	2.5%	153	2.7%	217

Source: Abstracted from: Soliman, Ibrahim & Owaida, U, (1997) "Impacts of Technological Changes and Economic Liberalization on Agricultural Labor Employment and Productivity" Journal of Egypt Contemporary Vol. 88, No. 445, P.3-20, Egyptian Association of Political Economic, Statistics and Legislation. Cairo, Egypt.

Table 30 Share of Agricultural Labor in Employment in Egypt in 2009

Labor Structure	(000)	% Of Econ. Active Pop.	Annual Growth Rate %
Economically Active Population			
Agriculture			
Male	4,136	15.4%	-0.4%
Female	2,771	10.3%	0.8%
Total	6,907	25.7%	0.03%
Non Agriculture			
Male	15,859	59.0%	3.4%
Female	4,093	15.2%	6.1%
Total	19,952	74.3%	3.9%
Total			
Male	19,995	74.4%	2.3%
Female	6,864	25.6%	3.2%
Total	26,859	100%	2.5%

Source: Calculated from: FAO Statistics Division: FAOSTAT 2010, December 2010

Table 31 Trend of Agricultural Machinery and Human Labor Use in Egypt (1986-2008)

Year	Agricultural Area (000) Hectares	Combine Harvesters and Threshers		Agricultural tractors		Agricultural Labor
		Numbers	Hectare/ Equipment	(000) Tractors	Hectare/Tractor	Hrs/Year/Hectare
1986	2567	2200	1167	52000	49	3335
1987	2547	2243	1136	52290	49	3400
1988	2581	2250	1147	53000	49	3395
1989	2571	2250	1143	55000	47	3445
1990	2648	2250	1177	57000	46	3377
1991	2643	2250	1175	59000	45	3415
1992	2900	2260	1283	61000	48	3139
1993	3246	2260	1436	78099	42	2821
1994	3246	2270	1430	78846	41	2800
1995	3283	2280	1440	89080	37	2837
1996	3286	2285	1438	88000	37	2856
1997	3300	2290	1441	86000	38	2877
1998	3300	2290	1441	86000	38	2910
1999	3483	2300	1514	86000	41	2789
2000	3291	2316	1421	86255	38	2987
2001	3338	2354	1418	92203	36	2979
2002	3424	2363	1449	93340	37	2931
2003	3409	2392	1425	94482	36	2983
2004	3478	2405	1446	96265	36	2965
2005	3523	2437	1446	98051	36	2965
2006	3533	2445	1445	100317	35	2979
2007	3538	2451	1443	102584	34	2994
2008	3542	2463	1438	105121	34	3018

Source: (1) Calculated from: FAO Statistics Division: FAOSTAT 2010, December 2010, http://faostat.fao.org/site/570/default.aspx#ancor
(2) Ministry of Economic Development, Economic Indicators (http://www.mop.gov.eg/English/english.html, December 2010

Table 32 Trend of Chemical Fertilizers Use Per Hectare in Egypt

Year	Agricultural area	Chemical Fertilizers (KG Nutrients/Hectare)		
		Nitrogen	Phosphate	Potash (K20
1986	2567	324	72	12
1987	2547	324	75	13
1988	2581	322	70	10
1989	2571	405	64	8
1990	2648	398	70	11
1991	2643	306	57	15
1992	2900	256	36	10
1993	3246	262	34	9
1994	3246	222	32	6
1995	3283	295	41	7
1996	3286	305	37	10
1997	3300	277	41	9
1998	3300	307	39	9
1999	3483	283	43	13
2000	3291	326	47	10
2001	3338	329	47	16
2002	3424	313	42	17
2003	3409	469	52	14
2004	3478	396	68	10
2005	3523	417	59	14
2006	3533	294	55	14
2007	3538	313	50	20
2008	3542	486	65	16

Source: Calculated from: FAO Statistics Division: FAOSTAT 2010, December 2010, http://faostat.fao.org/site/570/default.aspx#ancor

Table 33 Trend of Agro-food Industry in Egypt within the development Plan (2002-2007)

Item	2002	2007
Food processing production value (2002/03)* (billion EGP)	28.0	30.3
Share of private sector in value (billion EGP)	16.2	25.0
Private sector share	95%	95%
Number of enterprises	4,700	4,576
% of total manufacturing sector	15%	10%
Employment equals of total manufacturing sector	20%	N.A.

N.A. = Not Available

*Includes food, beverages and tobacco: Sources: (1) CAPMAS, (2) Egypt's Information Service

Table 34 Agro-Food Industry structure in Egypt in 2009

Item	Processing & Other industries
Wheat	6.70%
Milled Rice Equivalent	12.20%
Barley	37.20%
Maize	11.50%
Sorghum	7.70%
Potatoes	12.00%
Sweet Potatoes	10.10%
Sugar Cane	71.40%
Sugar Beet	98.20%
Pulses	5.10%
Soy beans	93.60%
Shelled Groundnuts	35.60%
Sun flower seed	100.00%
Cottonseed	99.40%
Sesame seed	4.30%
Olives	3.20%
Tomatoes	10.00%
Onions	11.60%
Other Vegetables	10.20%
Oranges, Mandarins	11.10%
Lemons, Limes	10.20%
Bananas	10.10%
Apples	10.00%
Dates	10.00%
Grapes	10.90%
Other Fruits	9.90%
Raw Animal Fats	5.00%
Eggs	4.20%
Milk	5.80%

Source; Compiled and Calculated from: FAOSTAT | © FAO Statistics Division 2011 | 04 January 2011, http://faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368#ancor

Table 35 Investment profile of Egyptian Food Processing Industries

Year	Number of Companies	Issued Capital (Million EGP)	Investments (Million EGP)	Share of Issued Capital		
				Egypt	Arab	Other
1994	7	14.4	23.4	98.6%	0.0%	1.4%
1995	15	234.1	535.5	50.7%	31.2%	18.1%
1996	25	156.8	234.6	94.6%	0.0%	5.5%
1997	51	428.3	675.1	72.7%	24.3%	3.0%
1998	49	522	886.8	19.2%	80.1%	0.7%
1999	54	214.9	316.9	98.6%	1.4%	0.0%
2000	43	107.3	191.4	50.3%	40.4%	9.2%
2001	37	359.8	632.7	96.6%	2.2%	1.2%
2002	35	54.2	104.1	91.9%	3.7%	4.4%
2003	47	144.9	215.9	90.2%	7.3%	2.5%
2004	84	569.3	1209.6	92.3%	6.3%	1.4%
Total		2806	5026	71.7%	24.9%	3.4%

Source: General Authority for Investment and Free Zones (GAFI), Unpublished Data, Cairo, Egypt, December 2005

Table 36 Exports of Egyptian Agro-Food Processed Products in 2009

Commodity	1000$	% of total
Cheese of Whole Cow Milk	53493	25%
Molasses	41877	20%
Other Fruit Preparations	31297	15%
Frozen Potatoes	19782	9%
Sugar Raw Centrifugal	16625	8%
Other Fruit Juice	13764	6%
Sugar Refined	7663	4%
Mango Juice	7295	3%
Oil Hydrogenated	6538	3%
virgin Olive oil	3012	1%
Breakfast Cereals	2912	1%
Cake of Soybeans	1500	1%
Canned Meat of Chicken	1403	1%
Other Cake of Oilseeds,	1146	1%
Milk Whole Dried	823	0.39%
Skim Milk of Cows	736	0.35%
Other Juice of Vegetables	676	0.32%
Milk Skimmed Dry	561	0.26%
Other Fat Preparations	464	0.22%
Macaroni	203	0.10%
Cake of Cottonseed	199	0.09%
Boiled Oil	194	0.09%
Evaporated Whole Milk	176	0.08%
Butter Cow Milk	167	0.08%
Preparations of Beef Meat	123	0.06%
Ice Cream and Edible Ice	99	0.05%
Cake of Linseed	86	0.04%
Must of Grapes	56	0.03%
Ghee, Butte roil, of Cow Milk	48	0.02%
Other Dried Fruits	47	0.02%
Condensed Whole Milk	46	0.02%
Beer of Barley	43	0.02%
Meat Extracts	37	0.02%
Dry Whey	33	0.02%
Juice of Pineapples	33	0.02%
Germ of Wheat	33	0.02%
Bread	30	0.01%
Buttermilk, Curd, Acid Milk	18	0.01%
Meat Preparations.	13	
Bran of Cereals	8	0.004%
Glucose and Dextrose	8	0.004%
Cake of Groundnuts	5	0.002%
Juice of Tomatoes	4	0.002%
Bran of Maize	4	0.002%
Bran of Rice	3	0.001%
Ginger	2	0.001%
Total	213285	100%

Source: FAOSTAT (2011) "http://faostat.fao.org/site/406/default.aspx"

Table 37 Subsidy Structure in 2009/2010Item

Item	Million EGP	% of Total
Commodity Supply Subsidy	13841.4	19%
Subsidy of farmers	792.6	1%
Subsidy of petroleum products	33694	46%
Other subsidies	11447	16%
Total Subsidies	59775	81%
Grants	3523	5%
Social Benefits(2)	6663.9	9%
Additional requirements and contingencies	3425	5%
Total Subsidies	73386.9	100%

Source: Compiled and Calculated from: Ministry of Finance, Egypt "Financial Statement Of The Draft of State's General Budget For Fiscal Year 2009/2010, May, 2009" Cairo, Egypt.

Table 38 Supply Commodities Subsidy in 2009/2010

Item	(000) Ton	Million EGP	%	EGP/ton
Imported wheat	5900	6368	46%	1,079
Domestic wheat	2100	2993	22%	1,425
Maize (Corn flower is mixed with wheat flower (1:4)	500	688	5%	1,376
Bread subsidy	8500	10049	73%	1,182
Ration oil	377	1675	12%	4,443
Sugar	755	1434	10%	1,899
Total Subsidy of supply commodities	9632	13158	95%	1,366
Additional Commodities(1)			0%	
Oil	498	621	4%	1,247
Sugar	498	604	4%	1,213
Rice	994	1244	9%	1,252
Tea	39	49	0%	1,256
Total subsidy of additional commodities	2028	2518	18%	1,242
Total Overall Subsidy	11660	15676	113%	1,344
Deducting: Total Revenues from Expenditures		-1835	-13%	
Net subsidy of supply commodities		13841	100%	

Source: Compiled and Calculated from: Ministry of Finance, Egypt "Financial Statement Of The Draft of State's General Budget For Fiscal Year 2009/2010, May, 2009" Cairo, Egypt

Table 39 Petroleum Products subsidy in 2009/2010

Product Quantity	*(*1000 tons*)*	Costs	revenues	Subsidy	%
Natural gas	34374	9551	7992	1559	5%
Butane	3795	7826	7826	7747	23%
Benzene	3971	8977	3194	5783	17%
kerosene	180	197	86	111	0%
Solar	11222	22618	5099	17519	52%
Gasoline	7674	4925	3950	975	3%
Total	61216	54094	20400	33694	100%

Source: Compiled and Calculated from: Ministry of Finance, Egypt "Financial Statement Of The Draft of State's General Budget For Fiscal Year 2009/2010, May, 2009" Cairo, Egypt

Table 40 The poorest Villages in Egyptian Rural

Governorate	No. of Villages	Population (Million)	% of Population	Number of poor (Million)	% of Total poor	% (Poor/ Population)
Asyut	236	2.53	23.74%	1.44	29.45%	56.78%
Suhag	271	2.73	25.64%	1.27	26.00%	46.42%
'Menia	365	3.05	28.60%	1.27	26.04%	41.66%
Qena	150	1.50	14.04%	0.59	12.05%	39.26%
Sharkia	74	0.61	5.69%	0.23	4.66%	37.49%
Aswan	4	0.01	0.06%	0.00	0.05%	36.68%
6-Oct	8	0.05	0.44%	0.02	0.35%	36.67%
Helwan	10	0.09	0.82%	0.03	0.65%	36.46%
Beni Suef	13	0.09	0.81%	0.03	0.64%	35.90%
Behera	19	0.02	0.15%	0.01	0.12%	35.59%
Total	1150	10.66	100.00%	4.88	100.00%	45.77%
Lower Egypt	93	0.62	5.85%	0.23	4.78%	37.44%
Upper Egypt	1039	9.90	92.90%	4.65	95.22%	46.91%
Helwan & 6 October	18	0.13	1.25%	0.05	1.00%	36.53%

Source: The Egypt Human Development Report (2010) executed by the Institute of National Planning, Egypt, with the United Nations Development Program, project document EGY/01/006 of technical cooperation.

Table 41 Firms joined QIZ in Egypt

.QIZ	Factories in QIZ	Industrial Cities in QIZ
Greater Cairo QIZ	Cairo Cotton	Tenth of Ramadan
	Dice	Fifteenth of May (Helwan)
	E.T.C.	South of Giza
	Samir Flaneles	Shobra El-Khema
	Delta	Nasr City
Alexandria QIZ		El-Amria (Bourg El-Arab),
Suez Canal Zone QIZ		Port Said Industrial City

Source; Ministry of International Cooperation, Egypt (2010) "Various Data and Reports" http://www.mic.gov.eg/minister2.asp

Table 42 Importance of Egyptian Agricultural Trade Flow of Egypt in EU Markets

Item	Role of EU in Egyptian Merchandise Trade				%(1)/(2)
	Exports (1)		Imports (2)		
	Million US$	%	Million US$	%	
Total Merchandise	5,700	100%	16,888	100%	34%
Merchandise EU	4,703	83%	6,209	37%	76%
Merchandise (Other Religion)s	997	17%	10,679	63%	9%
Agricultural EU	344	6%	580	3%	59%
Agricultural other (Regions)	857	15%	4,841	29%	18%

Source: Compiled and Calculated from: (1) (FAOSTAT Trade Matrix), (2) Central Agency for public Mobilization and Statistic, (2) Ministry of Economic Development (2009), Cairo, Egypt

Table 43 Agricultural Exports Flow by Region

Region	Agricultural Exports Flow by Region				% (Export/Import)
	Exports		Imports		
	(000)US$	%	(000)US$	%	
EU	343,826	28.62%	579,538	11%	59%
Other Europe	90,961	8%	946,140	17%	10%
Arab States	525,445	44%	234,028	4%	225%
Africa	79,754	7%	71,626	1%	111%
Asia	143,427	12%	595,574	11%	24%
Latin America	11,055	1%	1,122,918	21%	1%
North America	5,694	0%	1,627,296	30%	0.3%
Others	5,361	0%	243,107	4%	2%
Total Exports	1,201,312	100%	5,420,227	100%	22%

Source: Compiled and Calculated from: (1) FAOSTAT Trade Matrix, (2) Central Agency for public Mobilization and Statistic, (3) Ministry of Economic Development (2009), Cairo, Egypt

Table 44 Impacts of Improving Water Efficiency on Sustainable agricultural development up 2030

Description	Base Period	Scenario-1	Scenario-2
Quantities of water used in irrigation (million m3)	58,000	61,000	64,000
Field water use efficiency	50%	75%	80%
Areas projected to be developed (1,000 hectares)	-	945	2101
Saved water from developing irrigation systems (million M3)	-	5300	12400
Land areas expected to be added (1,000 hectare)	-	55	135
Areas with developed irrigation systems (million Hectares)	1.1	2.5	4.5
Total irrigated areas (million hectares)	3.5	4.1	4.8
% of developed areas to total areas	30%	62%	92%
Average water used per hectare (1,000 cubic meter)	16422	15042	13245
Percentage of intensification	183.6	199.1	200
Average rate of return per water 1 cubic meter	4.55	7.62	9.92
Average rate of return per Hectare	31.42	48.31	54.50

Table 45 Projected Cropped Area Pattern up to 2030, (000) Hectares

Crop Category	Base Period	Scenario-1	Scenario-2
Total cereal crops	1385	2181	2596
Total sugar crops	245	353	483
Total oilseed crops	119	159	221
Total legume crops	103	142	187
Total fodder crops	1155	1387	1786
Tomatoes	226	244	261
Potatoes	108	126	147
Green beans	31	42	53
Onion and garlic	47	57	65
Other Vegetable Crops	108	126	147
Total Vegetable Crops	1740	1973	2288
Citrus	166	189	210
Grapes	71	84	105
Mango	77	67	76
Other fruit crops	236	290	347
Total fruit crops	550	630	737
Medicinal and aromatic plants:	32	50	92
Total cropped area (in million	6,400	8,100	9,800
Agricultural intensification rate	183%	198%	199%

Source: the base period 2007-2008: MALR, Economic Affairs Department, Agricultural Statistics Bulletin (2009)

Table 46 Estimates of total returns per M3 of water unit, towards 2030

Crops	Base Period				Scenario-1				Scenario-2			
	(000) Hectare	Water (m3/H)	(Ton/H)	Water unit return	(000) Hectare	Water (m3/H)	(Ton/H)	Water unit return	(000) Hectare	Water (m3/H)	(Ton/H)	Water unit return
Wheat	1,141	3,713	6.5	1.97	1,576	2,856	7.6	3.29	1,765	2,475	8.6	4.66
Rice	703	12,350	9.8	0.85	525	9,520	10.7	1.38	546	9,520	12.4	1.69
Maize	774	5,553	8.2	1.59	1,324	4,272	10.5	2.64	1,555	3,808	11.9	3.72
S. cane	141	18,585	116.6	1	143	14,280	134.7	1.5	147	14,280	155.7	1.74
S. beet	104	4,422	52.4	2.04	210	3,401	66.6	3.37	336	2,951	83.3	4.85
Groundnut	65	8,182	3.3	1.16	97	6,295	4.8	2.15	147	5,474	6.0	3.09
Faba beans	89	2,849	3.4	2.65	126	2,190	3.8	3.89	168	1,904	4.3	5.04
Cotton	242	6,716	3.3	2.36	315	5,165	3.8	3.58	420	5,165	4.3	4.03
Perennial clover	766	5,995	70.4	2.06	798	4,610	83.3	3.16	924	3,998	95.2	4.17
One-cut clover	203	2,242	29.8	2.32	227	1,726	32.1	3.25	273	1,499	35.7	4.17
Alfalfa	16	11,900	96.4	1.41	42	9,163	107.1	2.05	84	7,854	121.4	2.7
e clover					126	1,726	38.1	3.86	252	1,499	40.5	4.72
Citrus	166	7,461	21.7	2.9	189	5,741	28.6	4.97	210	4,998	35.7	7.14
Grapes	71	7,461	23.6	2.84	84	5,741	28.6	4.48	105	4,998	33.3	6
Mango	77	12,250	10.9	2.23	67	9,401	14.3	3.8	76	8,166	23.8	7.29
Tomatoes	226	6,664	34.5	3.36	244	5,141	47.6	6	261	4,522	71.4	10.3
Potatoes	108	6,378	25.5	2.55	126	4,905	28.6	3.73	147	4,236	33.3	5.04
Beans	31	2,618	12.1	3.86	42	2,023	16.7	7	53	1,785	19.0	9.06

Source; Egyptian Ministry of Agricultural and Land reclamation, (2009)

Table 47 Estimated rates of self-sufficiency in the main food commodities, towards 2030

Food Commodity	Base Period				Scenario-1				Scenario-2			
	Production (000) tons	Consumption(000) tons	Annual Per Capita KG	Self-sufficiency (%)	Production (000) tons	Consumption (000) tons	Annual Per Capita KG	Self-sufficiency (%)	Production (000) tons)	Consumption (000) tons s	Annual Per Capita KG	Self sufficiency (%)
Wheat	7388	13591	177	54	12000	16238	177	74	15120	18709	180	81
Milled rice	4553	3273	43	139	4161	3956	43	105	4809	4664	44	103
Sugar	1487	1933	27	77	2260	2760	30	82	3460	3710	35	93
Faba beans	301	578	8	52	480	690	8	70	720	795	8	91
Potatoes	2793	1548	20	180	3600	2024	22	178	4900	2650	25	185
Tomatoes	7888	7623	100	104	11600	9200	100	126	18600	10812	102	172
Citrus	3594	2672	35	135	5400	3496	38	155	7500	4240	40	177
Grape	1783	1294	17	129	2400	1656	18	145	3500	2120	20	165
Milk	4400	4859	63	91	7200	7332	80	98	9540	9540	90	100
Red meat	670	1001	14	67	853	1104	12	77	1089	1166	11	93
White meat	850	847	12	100	1095	1095	12	100	1410	1410	13	100
Eggs	240	240	3	100	288	288	3	100	373	373	4	100
Fish	971	1001	14	97	1500	1380	15	1087	1950	1961	19	99
Population (Million)	77				92				106			

Source: The base period from: Food balance sheet data , (MALR), (2009) "

Table 48 Required investments over a decade to approach Scenarios 1 & 2

Scenario	Investment expenditure (billion EGP)	Annual Growth Rate (%)
Base Period (2007-2008)*	8.5	3.7
Scenario-1 (2009-2019)	198	4
Scenario-2 (2009-2019)	231	5

Estimates on Base of:

(1) The capital coefficient is 1.8, and amortization rate is 7.5%.

(2) Investment expenditure in the base period 2007-2008 amounted to 8.5 billions EGP to achieve a growth rate of 3.65%.

(3) Forecasting of investments at 2005 constant prices

(4) The relation between investment expenditure in the agricultural sector and achieved growth rates during 1970 – 2005.