SUMMARY AND CONCLUSIONS

The agricultural sector occupies a prominent posittion in the Egyptian National Economy. Such a position is based on the fact that the sector is largly responsible for the supply of most of the food needs and directs some surplus to export channels.

The Egyptian exports of agricultural products are a principal source of foreign currencies needed for economic and social development. horeover, agriculture is a main supplier of raw materials requested by major industries. On the other hand, agriculture acts as a wide market for the industrial products.

The problem investigated by this study is the distorted and imbalanced relationships between the land resource constraint and agricultural resources scarcity from one hand and the rapid increase of population on the other hand. The consequence is of course the disability of agriculture to provide sufficient needs of food to the rowing number of people.

Owing to the great importance of cereals, as being the main source of food for the majority of Egypt's people, the government has been *giving* lots of attention to raise their productivity. It is a well known fact that most of Egypt's needed cereals are imported. Rice is regarded as an export crop, but the recent years point to a decline in its exports.

In an effort to meet the growing needs for cereals, the government puts a great effort in vertical development, i.e. agricultural intensification.

The study objective is to identify the ideal tools of development, in the hope of maximizing the output generated from the available land unit. To achieve such an objective, many attempts of grain intensification, especially of wheat, rice, corn and maize have been analyzed to detect their economic and technical feasibility.

The study contains five chapters. Chapter one includes an introduction, which revolves around the significant importance of cereals all over the world and in Egypt as well. Asia, for instance, is the largest producer of cereals in the whole world. It occupied 42.14% of the world average areas of grains during 1981-1986. Whereas, the average areas in USSR,'North America, Europe and Africa were 15.87%, 14.67%, 9.66% and 9.92% respectively during 1981-1986. Egypt's average area of grains is 0.47% of the world average area of grains for 1981-1986.

In Egypt, area of cereals constitutes a large portion of the cropping area. Liaize, wheat, rice, sorghum and barley represented 16.10%, 11.83%, 9.34%, 3.90%, and 0.91% of average total cropping area which was 11.078 million feddans during 1970-1986:

Chapter two concentrates on reviewing the studies related to agricultural intensification. Such studies took place at several universities and institutes interested in this topic. Many seminars and symposiums which were held in this respect have been considered. Before concluding this Chapter, the study discussed the experiments and applications which were carried out recently in "The Agricultural Research Center" and at the agricultural intensification project sponsored by The Miniatry of Agriculture.

Chapter three deals with the history of agricultural intensification, i. e. its beginning and evolution. This chapter discusses the food gap and how it could be closed through intensification. It is quiet known that the gap could be obviously manifested in all crops except rice, fruits and vegetables. The cereals gap widened from 1249 thousand tons in 1960 to 6056 thousand tons in 1980, which means about 384.9% increase. In other words, cereals gap in dollars in 1960 was US$ 229 million and in 1980 it was US$ 1202 million which means an estimated increase of about 424.9%.

Therefore, agricultural intensification has become an inevitable technique that could redress the agricultural trade balance. During 1960-1973 the agricultural trade balance achieved an estimated surplus of L.E. 89 million in 1960 and L.E. 163.9 million in 1973. In 1974 the agricultural trade balance suffered an eatiwated deficit of L.E. 27.2 million and the deficit reached L.E. 1824.6 million in 1986.

Chapter 4 discusses resources of land, water and human labour. It has been found out that the cultivated area increased annually by 17 thousand feddans, whereas the cropping area increased annually by 46 thousand feddans during 1960-1986. The fact that the cropping area increases faster than the cultivated area emphasizes the head for vertical development programms. As for the productivity of land, it showed substantial growth, during 1961-1980. Productivity of first classland increased from 19% (1961-1966) to 38% (1976-1980). Whereas productivity of second class land increased from 27% (1961-1565) to 39% (1976-1980).

The persisting need for intensification emerges from the decrease of human labour available. Such decline could be explained through migration to the oil producing countries and or from rural to urban areas. Farm labour decreased from 51.3% in 1964-1965 to 33.6% in 1983-1984. Labour decline is the main cause for the wide spread of mechanization.

Chapter Five evaluates the results of several applications of major crops intensification.

a) High yielding, and early maturing varieties of rice have been dealt with in an economic study. The results indicated in a comparison between phillipini variety 1R28 and the local variety of Giza 171 that the former surpassed the latter in terms of yield and net revenue per feddan. Average yield per feddan of phillipini recorded 3.5 tons compared to 2.77 tons for Giza 171. As for average cost

per feddan, it came higher in Giza 171 than in the phillipini rice, i.e. L.E. 339.56 for Giza 171 and L.E. 270.29 for the phillipini. Net revenues per feddan for phillipini rice amounted to L.E. 342.35 but for Giza 171 it amounted to L. 191.54.

b) The obtained results showed substantial increase in both productivity and net revenue per feddan in favour of the mechanized sowing and planting processes of rice. Average yield of mechanized and manual swan rice amounted to 2.58 and 2.53 ton per feddan respectively.

c) In 1987, double cropping of maize and soybean, yielded 13.94 ardab for maize and 0.865 ton for soybean. Productivity for each of maize and soybean in the same year was 14.5 ardab/feddan and 1.184 ton per feddan respectively. Regarding net revenue per feddan, it was L. E. 488.758 in double cropping and L. E. 284.74 fo'r sole maize and L.E. 104.88 for sole sorghum, which means an increase of 71.7% in the case of double cropping.

d) Double cropping; of sugar cane and wheat revealed that wheat in the double cropping pattern could somewhat contribute to solving wheat shortage, and this would of course reduce wheat imports.