

# **IMPACT OF THE ECONOMIC REFORM POLICY UPON PRODUCTION OF MAJOR CROPS IN EGYPT**

## **SUMMARY**

The Economic-Reform Policy in the Egyptian Agricultural Sector had included several trends, the most important, is the change of the planning style, from central planning depending on the influence of the government to a planning depending on expanding the opportunity of working under the market mechanism and limiting the role of government on achieving the Agricultural development with a change of the philosophy of managing the resources of the National Agricultural Economy. We can say that the problem of the study, especially in the form of the Economic Reform policy, is that the Egyptian Agricultural Sector had taken several procedures and changes that were suitable for its liberalization, these must have been an influence on the Agricultural production that differs as these changes. Thus, the problem of this study is to acknowledge these changes and the positive and negative effects of it, and its role in forming the skeleton and production of the main crops in Egypt and its effects adjusting with the local and foreign markets.

This study aims to measure the effect of achieving the Economic reform policy on the production of the main crops in Egypt, on both the economical and physical coefficients of the important studied crops, through studying the achieved improvements in the essential changes of the two periods of study and with using the suitable statistical and analytical methods. Also, the study aimed to acknowledge the effect of the Economic Reform Policy on the economic efficiency of the studied crops through studying the structural combination of the items of the production costs, and estimating the production cost functions, productivity functions and functions of response of total production of the most important crops in the two periods of study. The study had depended on the two methods, (the deduction method and the induction method) both together, and the research study depended on using the methods of the descriptive and quantitative analysis of the data and the explanation of the Economic-Relations between the variables by the mathematical methods. The study depended on the specific dated for its theoretical, previous, frame and this was from several sources of which, editorials, books and Arabic and English specialized papers. Also studies, serculations and publications that had a strong relation of the subject of the study issued by a scientific authorities and research centres. While the study essentially depended on having the published and unpublished matters related to its analytical form on documentations, publications of the governmental and nongovernmental authorities.

The study contains of four essential research chapters, The first chapter dealt with the frame of the economic reform in Egypt and it separated three portions, the first dealt with the study of main features of the economic text review reform in Egypt through studying the phases of the economic changes and the Egyptian economy before the Economic Reform, then the motives of the economic reform and the structural adjustment programmes then studying the aims, methods of the economic reform policy. The second partition dealt with studying the main features of the Economic Reform in the sphere of agriculture, through studying the declarations and programs and the crop structure in the frame of the Economic Reform Policy and the third partition deals with the text review of the previous studies related to the study.

The second chapter dealt with trended changes of the productive limitations of the most important crops, this chapter is separated into three portions, the first dealt with the studying of the trended changes of the physical limitations of the main crops production, and from which, it is clear that in the first period of the study before the application of the economic reform the average of the cultivated area of the wheat, rice, maize, bean, cotton and sugarcane, were 1272, 982, 1383, 268, 1087 and 252 thousand feddans sequentially. The feddan productivity average were 10 Ardab, 2.4 Ton, 14 ardab, 1 Ton, 6.9 Kentar and 36 ton for the previous crops in sequent, and the average of the total costs were 226, 273, 247, 215, 411 and 586 pounds sequentially. Also, the farm price was about 127, 150, 22.4, 44, 71.2 and 22.6 pound per unit of the previous crops sequentially while the feddan net revenue were about 108, 150, 115, 85, 136 and 233 pound sequentially. As for the second period of the study after applying the economic reform policy and the data of the study declares that the cultivated area was about 1879, 1135, 1598, 228, 296, 889 and 273 thousand feddan and the average of the productivity of the feddan was about 14.7 ardab, 3 ton, 18.2 ardab, 1.1 ton, 6.2 kentar and 43 ton while the average of the total costs was about 604, 710, 720, 572, 912 and 1458 pound and the average of the farm price where about 433, 400, 56, 124, 265 and 58 pound per unit for the previous crops sequentially. Also, the average of net feddan revenue was about 799, 633, 556, 473, 303 and 986 pound sequentially. By studying the time trends and estimating the time trend functions of the cultivated area of the important crops before applying the economic reform policy, it is clear that the areas cultivated with wheat, rice, maize, bean, cotton and sugar cane had a declining trends with an annual decrease, were about 19.3, 18, 4.6, 16.1 and 1.5 thousand feddan sequentially, while it declares that the area of rice crop was increasing by about 20.6 thousand feddan annually. But after applying the economic reform policy it occurs that, the cultivated area with the crops, wheat rice, maize and sugar cane had an increasing trend, annually increase by 117.2, 53.2, 35.3 and 2 thousand feddan sequentially (this was statistically significant), while the bean and cotton cultivated areas had a declining trend decreasing annually by about 2, 47.5 thousand feddan. The study's results declares that each of the per feddan productivity of the rice,

maize, cotton and sugar can had an increased trend before applying the economic reform, and the annual increase rate about 0.35, 0.2%, 1.9% and 0.8% of the annual average of the per feddan productivity of the formal crops sequantly. The annual decrease of the wheat and bean was 1.9% and 0.31% sequantly during the same period. As after applying the economic reform policy, the results of the trend for these per feddan productivity for the wheat, rice, maize, cotton and sugarcane, that there is an increasing trend during this period, and it was estimated statistically significant, with about 4.1%, 4.5%, 4.6%, 0.5% and 2.7% sequantly. As for the total production of rice, cotton and sugarcane, it had an increasing trend during the first period before the reform with an annual rate about 3.0%, 0.3% and 0.4% from the annual average of the total production for the same crops sequantly, and the decreasing rates for wheat, maize and bean was about 3.3%, 0.7%, 2.7% sequantly before the reform. But after applying the economic reform policy, it occurs that the total production of wheat, rice, maize and sugarcane had an increased trend and statistically significant, the annual rate of increase was estimated by 9.20, 9.1%, 6.7% and 4.2%. As for the self contentment rate, the study declares that the self content percentage as an average for the first period before the reform reached about 18.7%, 69%, 110%, 84% and 55% for the wheat, maize, rice, bean, and sugarcane sequantly, while after applying the reform policy it reached about 40%, 74%, 108%, 90% and 62% for the same crops as previously mentioned sequantly. The study declares that decrease the per-capita average share from wheat from 187 Kg. annually as an average before the reform to about 173.5% annually as an average after the reform, while the per-capita average decreased from the rice, bean, and sugar from about 95.6%, 6.1% and 31.4 kg annually as an average for the first period before the reform to about 83.3, 5.3 and 27.3 Kg annually as an average for the second period after the reform sequantly while the average of per-capita share of rice increased from 33.2% Kg annually to about 36 Kg annually. As for the second partition of the second chapter, it dealt with the study of the trend changes of the economic limitations to produce the main crops through a studying the changes, in the farm prices, the net per feddan revenue, of the substitute circulations, the surplus value and the revenue on the invested pound for the important main crops in the study. From the results, it occurs that the farm prices for wheat, rice, bean, cotton and sugarcane had an increasing trend before the reform and the increase rate reached annually about 2.5%, 8.5%, 15.2%, 3.4% and 5.2% sequantly from the annual average of the current farm prices. The study declares that the decrease of the maize crop with a rate about 1.4%, but after the Reform it is noticed that the farm prices of wheat, rice, maize, bean, cotton and sugarcane had an increasing trend and statistically significant with an annual rate of 97.4%, 15.4%, 11%, 87%, 16% and 15.8% sequantly. As it concerns the per feddan net revenue, it occurs that, as for the wheat, maize, bean and sugarcane it had a decreasing trend before the reform with a rate reached about 13%, 25%, 24% and 0.5% sequantly. As for the rice and cotton they had an increasing trend was about 10% and 9.4% for the two crops sequantly. After applying

the economic reform policy, it occurred that there is an increasing trend and statistically significant for the wheat, rice, maize, cotton and cane with an increase rate reached about 9.3%, 16.4%, 6.1%, 55.3% and 13.3% sequentially, also the study declares its decreasing for the bean crop with a decrease rate reached 0.2%. As after applying the Economic Reform Policy, it occurred that the wheat, rice and cotton had an increased trend with an increase rate reached about 3.8%, 8.7% and 16.7% from the annual average of the net revenue per feddan. As for the maize and sugarcane they had a decline trend with a ratio about 5.4% and 19% from the annual average of the revenue per feddan sequentially. As for the surplus value, the study dealing that it raised from about 279, 250, 242, 263, 389 and 554 pound per feddan as an average of the first period, before the Reform, and reached to about 808, 848, 824, 850, 1382 and 1866 as an average for the second period, after the Reform, for the wheat, rice, maize, bean, cotton and sugarcane sequentially, and also for the revenue of the invested pound, it is clear from the study that it reached, as an average during the first period before the Reform, about 0.64, 0.37, 0.41, 0.66, 0.28 and 0.37 and was increased to about 1.1, 0.8, 0.8, 0.69, 0.82 and 0.72 pounds, as an average of the second period, after the Reform.

The third partition studying the Analysis of variance of the most important economic variables that affect on the production on the main crops before and after applying the Economic-Reform Policy, it is clear that for the two periods of study and the cultivated area, that the differences are significant and assured statistically at the level of 0.1 for the crops of wheat, maize, cotton and sugarcane, this means that there is an evidence that the Economic-Reform Policy had a real effect and Positive, on the agriculture sector. on the average of the cultivated area, and the differences of the rice and bean had no significance. As for the per feddan productivity, it was clear that the significance of the averages that was assured statistically at the level 0.01 for the crops, the wheat, rice, maize and sugarcane. And at level 0.05 for the cotton but for the bean the significance of the differences did not be assured, that is an evidence that the Economic Reform policy have a real and Positive effect on the per feddan average productivity for the formal crops except the bean. As for the total costs, the farm price and the per feddan net revenue, the Analysis of variance result declares the significance of the differences and that it is assured statistically at the level 0.01 for the wheat, rice, maize, cotton, bean and sugarcane and that is an evidence that the Economic Reform Policy have a real effect on each the average of the total costs, the farm price and the net revenue per feddan for the main crops of the study.

The third chapter of the study, it dealt with production analysis of the agricultural main crops, it contained of two parts, the first, deals with estimating the production functions of the important crops of the study, this was before applying the Economic Reform Policy. For the wheat, it recommended that the two factors of chemical fertilizer

and the mean power have a positive effect on the volume of production, and as for the Rice, it is showed that the variables of the function had an insignificant effect, but for the Maize, it is showed that the factor of mechanical power had a positive effect on the production, and finally for the cotton it is clear that the factor of mechanical work had a negative effect on the volume of total production. At second, after applying the Economic Reform Policy, the results of the study shows that concerning the chemical fertilizer it had a positive effect of the volume of production, and as for the Rice, the value of seeds had a positive effect on the production. For the Maize, the two factors of the mean power and the mechanical power had a positive effect on the production, and at final for the cotton crop, it is revealed that the value of seeds had a negative effect on the volume of production.

The second part, it dealt with response functions of production to the total production of the main important crops, before applying the Economic Reform policy, the results of the study, as for the wheat, it shows that the net revenue if increased by 10%, that lead to increase of the total production by 2.1%, and for the Rice, if the net revenue increase by 10% that had to an increase of the production by 0.26%, and for the Maize, the increase of the net revenue by one pound in the present year, leads to an increase of the total production in the next year by about 2 thousand ardab, and finally for the cotton, the increase of the net revenue by one pound in the present year, leads to an increase in the total production in the next year by about 0.6 thousand kantar. After applying the Economic Reform Policy, it is showed that for the wheat, the increase of the net revenue by one pound in the present year, lead to an increase of the total production by about 3.2 thousand ton and for the crop of Rice, it showed that by increasing the net revenue by one pound in the present year, leads to an increase of the total production by about 3.2 thousand ton. As for the Maize, the results shows that an increase of the net revenue per feddan in the present year, that lead to an increase of the total production by 7.7 thousand ardab in the next year and finally, for the cotton, the increase of the net revenue per feddan of it by one pound in the present year, leads to increase the total production by 0.42 thousand kantar in the next year.

The fourth chapter of this study was concerned of studying the production costs analysis of the main agricultural and it contained of two partitions. The first dealt with a study of the structural formation of the production cost of the most important main crops under the Economic-Reform Policies. It occurred that total costs of production per feddan from the crops, these are, the wheat, rice, maize, cotton, bean, and sugarcane reached about 226, 273, 247, 215, 411 and 586 pound per feddan as an average of the first period, before the Reform, while it reached about 604, 710, 720, 572, 912 and 1458 pound per feddan as an average for the second period, after the Reform, for the previous crops sequantly. It was clear that the rates of increase in the constant costs during the

period of Reform than in the period before the Reform reached about 185%, 229%, 274%, 166%, 219% and 186%, that for the formal crops sequantly, and that is an evidence that this great increase of the constant costs in the second period than in the first period as a result of liberlization of the relationship between the owner and the in the agricultural and leave it to the powers of the market. As about the variable costs of the production of feddan from the formal most important main crops, the results declaires that there are rates of increase for the variable costs during the second period, after the Reform than of the average variable costs during the first period, before the Reform, and were about 161%, 150%, 175%, 189%, 107% and 141% for the wheat, rice, maize, bean, cotton and sugarcane sequantly, that was refered to the total liberlization of the prices of requests of the Agricultural production and not to support it ever. This was followed by a total liberlization of the find prices of the main crops. This it occured from the study that the costs of the manpower payrole come in the first stage, then the costs of items of production requests come in the seconod stage, then in the third stage there is the item of the cots of Mechanical work, and that from the total of the variable costs before and after the applying of the Eeconomic-Reform policy and for the same previous crops sequantly. The study declaires the development of the production requests's value, as for the costs of seeds, it reached about 10.3, 20, 5.6, 20.8, 2.4, 35, pound per feddan as an average of the first period and 40.2, 73.3, 29.8, 85, 19.8 and 97.3 pound per feddan as an average of the second period of the study and after applying the Reform Policy for the wheat, rice, maize, bean, cotton and cane sequantly. As for the item of the manpower payrole for the previous crops sequantly it raised from about 82.6, 81.7, 230, 261.6, 118 and 108 pound per feddan as an average of the first period of the study to about 172, 216.6, 221.5, 181.5, 402 and 392 pound per feddan for the same crops sequantly, and as an average for the second period after the Reform. As for values of the mechanical work, it raised from about 37, 48, 32, 30, 34 and 78 pond per feddan as an average of the first period of the study to about 121, 172, 101, 109, 102 and 257 pound per feddan as an average for the second period of the study and for the same previous crops sequantly.

As for the second partition of this chapter of study, it delt with studying the production cost functions and its estimation for the most important main crops, for example, the results shows, for the wheat, that the eeconomic stage of crop production in the first period of the study is begening from a production estimated by 1.35 ton per feddan and that this production is in the eeconomic-stage where the factor of elasticity was 6.1, but for the second period, it shows that the main volume of prodcution and the more effecient in productivity is at 2.2 ton, it was noticed that the level of production of this crop acheaves this volume, and the factor of elasticity was 1.6 which is a very positive value, and it shows that the production in this period is acheaved in the Eeconomic-stage also. As for rice, the eeconomic-stage for production of this crop

begins with a production estimated by 2.37 per feddan and that the average revenue per feddan of the crop establish the volume of production the more efficient and more profitable, the factor of elasticity 4.3, that means that the production is in the Economic-Stage, that is during the first period of study, but as for the second period, it shows that the volume of production for the crop of rice is achieved the condition of maximum profit and it shows that by calculating the elasticity of costs at the level of the revenue per feddan that is estimated by about 3 tons, and the factor of elasticity was 7.1, that show it is positive and bigger than the round 1, that measure that the production during the period of Reform is in the economic-stage. As for the crop of maize, it occurs from the study that the optimum productive volume and the more efficient in productivity is faced by a production estimated by 14.8 ardab, while in average of production for feddan reached about 14 ardab, but in the second period of the study it shows that the volume of the optimum production volume is 16.1 ardab and the average of production of feddan during this period was 16.5 ardab, that means that the production in the economic stage during the second period, where the factor of elasticity was 5.7. As for the sugarcane crop, the study results reveal that the value of production that achieves the first condition of the conditions of profit is reached about 31.4 ton per feddan, and it is noticed that it is more by 3.5 ton per feddan than the optimum volume at the average of farm price of 22.6 pound per ton, also it is noticed that the elasticity factor was about 2.3, it was positive and bigger than the round one, that means that the production of the crop before applying the Economic Reform Policy is in the Economic Stage. After the applying of the Reform Policy the results show the volume of production that achieves the conditions of Profit which reached about 32 ton per feddan and this is more than the optimum volume of production by 3.2 ton per feddan at the average farm price of 56 pound per ton, and by estimating the elasticity of costs, the elasticity factor was 8.6, it is positive and bigger than the round one, which means that the production during this period is in the economical stage.

Finally, it contains the summary, the most important results and the recommendations.