An Analytical Study of The Impact of Structural Changes on The Prices of Agricultural Production Requirements in Light of The Current Local Changes in The Arab Republic of Egypt
Case Study: Cotton Crop

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ABSTRACT

The problem of the study is that agricultural production in general and the cotton crop in particular have a continuous increase in the average production costs per feddan - which has weakened the farmers' ability to obtain the largest amount of production at the least amount of costs and thus weakened their ability to achieve the productive and economic efficiency of agricultural production in general And for the cotton crop and the resources used in its production in particular, and despite the increase in its prices from one period to another, the increase in the prices of production requirements was faster, which affected the cultivated area of it and shift to the cultivation of other more profitable crops. The recent period after 2011 has a noticeable rise in the prices of production requirements in particular and the general level of prices in general - this had a great impact, especially on the agricultural sector.

The study aims generally to describe the changes that occurred in the costs of producing the cotton crop in Egypt, as well as the developments in the costs of producing the crop by dividing the study period into two periods, the first (2002-2010) as a base period, and the second (2011-2019) as a comparison period. With the aim of identifying what local structural changes brought about, such as the January 25, 2011 revolution, as well as the liberalization of the exchange rate for the pound in 2016 and its impact on the profitability of the feddan of the crop and the area cultivated from it.

The most important results of the study The area cultivated with the cotton crop have a general decreasing and significant trend, amounting to about 27.48 thousand feddans annually, with an annual decrease rate of about 6.76% from the average during that period, the decrease in the cultivated area of the crop due to the decrease in the net yield from it, and the difficulty in marketing while production costs are rising steadily.

By examining the relative importance of the cost items, the cost of rent came in the first place for the cost items, as it represented about 36.52% of the total costs, equivalent to about 53.34% of the variable costs, followed by the importance of the cost of human labor, which came in the second place of the cost items, where it represented about 50.69%, 30.27 % of variable costs and total costs, respectively. As for the cost of automated work, it came in third place, representing about 16.18%, 9.9% of both variable costs and total costs, respectively. By studying the impact of local structural changes on the most important economic variables for the cotton crop, it became clear that The average area cultivated with the crop during the comparison period is approximately 46% of the average cultivated area during the base period, due to farmers' tendency to cultivate more profitable crops. The average farm prices of the cotton crop during the comparison period were about 172% of what they were during the base period. The average total costs during the comparison period were about 198% of their counterparts during the base period. The average net return during the comparison period is about 142% of the average net return during the base period.

Key words:Structural changes, agricultural production requirements, absolute effect, relative importance

INTRODUCTION

In recent years, there have been many disturbances in society that have clearly negatively affected the various sectors, including the agricultural sector - which led to the trend and interest of economic analysts to study the economic and productive aspects related to agricultural production to address the imbalance and effects resulting from those disturbances, including the January 2011 revolution. As well as the liberalization of the exchange rate in 2016, and the outbreak of revolutions is usually accompanied by the occurrence of some disturbances, transformations and unrest, and this is a natural matter, which led to interest in productive and price programs and policies with a study of production costs as one of the main axes related to the economics of agricultural production, through which it is possible to measure the productive and economic efficiency of different crops. Also, the production costs enable to determine the optimal production volumes, which are the quantities that achieve the maximum profit possible, and play a major role in determining the net revenue per feddan of different crops, and thus enable to identify some economic aspects that explain the farmers' motives related to the expansion of the cultivation of certain crops, or Related to the shift away from the cultivation of other crops, and this was accompanied by the emergence of various forms of monopoly in the production requirements market, which

DOI: 10.21608/asejaiqjsae.2022.253628
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Received July 10, 2022, Accepted, August 08, 2022

resulted in a decrease in the net return of agricultural crops, especially the cotton crop, and the tendency to cultivate more profitable crops. The importance of the Egyptian cotton crop is due to its distinguished position among all agricultural crops. It is based on many local industries such as the ginning, spinning and iron industries Sage, the vegetable oil industry and the animal feed industry, in addition to accommodating a large number of human labor, whether in production or manufacturing, and it has a global position among the various cottons, which makes it a source of foreign exchange, as it surpasses the international cotton in quality, spinning characteristics and length Staple, which is not available in many other international varieties, which enables it to occupy an important position in the fields of production, consumption and manufacturing, and despite all this importance, the production of Egyptian cotton has a significant decline in its production, marketing and export, farmers are no longer accepting to cultivate it recently .

This resulted in a decrease in the cultivated area of cotton, and consequently the feddan productivity and production, and consequently a decrease in exports, and consequently a decrease in the relative importance of Egyptian cotton exports in the global market. The area cultivated with the cotton crop at the level of the Republic decreased from about 706.411 thousand feddans in 2002 to about 131,751 thousand feddans in 2019, a decrease estimated by about 165.98% of the average cultivated area during that period, which amounts to about 406.4 thousand feddans.

Accordingly, the expansion of cotton cultivation is one of the main objectives of increasing the national income from the agricultural and industrial sectors. The Egyptian government has announced a new policy to confront the decline in cotton cultivation. Accordingly, the Ministry of Agriculture and Land Reclamation adopted a plan to increase the area planted of cotton to about 500 thousand feddans. At least by 2019, this was not achieved due to the low farm prices and the farmers' abandonment of cultivation due to the lack of returns from it. The interest in cultivating short-staple cotton became a propositional solution to cover the needs of local factories, provided that this expansion does not come at the expense of the areas planted with long cotton due to Egypt's competitive advantage in its production. Egypt's production represents about 3% of the total amount of production produced worldwide.

the study Problem : Agricultural production in general, and the cotton crop in particular, is facing a continuous increase in the average production costs per feddan - which has weakened the farmers' ability to obtain the largest amount of production at the least amount of costs and thus weakened their ability to achieve the productive and economic efficiency of agricultural production in general, the cotton crop and the resources used in its production In particular, and there is no doubt that a situation like this would lead to a decrease in the agricultural yield of the cotton crop, despite it being a profitable crop, despite the increase in its prices from time to time, the increase in the prices of agricultural production requirements was faster affecting the cultivated area, and the tendency to cultivate other more profitable crops. The recent period after 2011 has witnessed a remarkable rise in the prices of production requirements in particular and the general level of prices in general - this had a great impact, especially on the agricultural sector.

Aims of the study : The study aims, in general, to describe the changes that occurred in the costs of producing the cotton crop in the Arab Republic of Egypt, as well as the developments in the costs of producing the crop by dividing the study period into two periods, the first (2002-2010) as a base period, and the second (2011-2019) as a comparison period, and that With the aim of identifying what the local structural changes have caused, such as the January 25, 2011 revolution and the liberalization of the exchange rate of the pound in 2016 and its impact on the profitability of the feddan of the crop and the cultivated area through:

1- A study of the development of the most important economic variables for the cotton crop during the study period.

2- The relative importance of the items of production costs of the crop.

3- Measuring the impact of local structural changes on the most important economic variables for the cotton crop in the Arab Republic of Egypt.

Research method and data sources: The study relied on published and unpublished secondary statistical data obtained from the Ministry of Agriculture and Land Reclamation - Economic Affairs Sector Agricultural Statistics Bulletins, cost records in the Economic Affairs Sector of the Central Administration of Agricultural Economics, and studies related to the subject of the study. The use of indices numbers as a statistical analytical tool for its compatibility with the nature of the study on the one hand, in addition to its ability to isolate the impact of the various items constituting the costs of cotton production in its relative and absolute form on the other hand, this has been possible to express eight requirements for production, which are 1- worker's wages (A) 2 - Machinery fees (B) 3- The price of seeds (C) 4- The price of municipal fertilizer (D) 5- The price of chemical fertilizer (E) 6- The price of pesticides (F) 7- Public expenses (G) 8- The rent (H) In the following picture:

IC=$\frac{A1+B1+C1+D1+E1+F1+G1+H1}{A0+B0+C0+D0+E0+F0+G0+H0}$, Where IC is record number.

The study was conducted to test the impact of the structural changes of economic variables resulting from local changes that led to a general rise in prices, especially the prices of agricultural production requirements during the period (2011-2019), which is the period after the unrest and the January revolution, and the liberalization of the exchange rate by using the method of fictitious variables through Dividing the period (2002-2019) into two periods, the first (2202-2010), which represents the period before the January 2011 revolution, which is the base period, and the second (2011-2019), which represents the period after the January revolution, which is the comparison period, by setting a dummy variable (D) that takes the value (zero) in the first period and the value (one is true) in the second period. The general form of the model is as follows: $Y_t = a+b_1 x + b_2 D+ b_3 DX$ Then the equation of the first period by substituting D = zero is $Y_t = a+b_1 x$.

the equation for the second period, by substituting D = 1, is $Y_t = a+b_2 + b_1 + b_3X$ The simple index was also used to measure the percentage change in costs as a result of the January 2011 revolution and the liberalization of the exchange rate using the following model:

I= C1/C0

Where I is semple record number(%)

C1: Production costs during the comparison period (2011-2019) C0: production costs during the base period (2002-2010)

RESULTS

First: **The development of the most important economic variables for the cotton crop during the study period**: The current situation of the cotton crop in the Arab Republic of Egypt:

1- the development of cultivated area: The data of Table No. (1) in the appendix indicate that the area planted with the cotton crop in Egypt was characterized by fluctuation during the period (2002-2019) between a maximum of 706.411 thousand feddans in 2002 and a minimum of 131,751 thousand feddans in 2019 with an annual average estimated at 406,466 thousand feddans during that period, and by estimating the equation of the general temporal trend of the cultivated area of the cotton crop during the period (2002-2019), it was found from the results of equation No. (1) Table No. (1) that the area cultivated with the cotton crop took a general decreasing and statistically significant trend, amounting to about 27.48 thousand feddans annually, with a percentage of An annual decrease of about 6.76% from the average during that period, and a coefficient of variation estimated at 42.68% during that period - and the value of (R^2) indicates that about 71% of the changes occurring in the cultivated area are due to the factors that are reflected in the time factor. The decrease in the cultivated area of the crop may be due to the low net return from it and the difficulty of marketing it at a time when production costs are rising steadily.

2-**the development of Feddan productivity**: The data of Table No. (1) in the appendix shows the fluctuation of the average feddan productivity of the Egyptian cotton crop during the period (2002-2019) between a minimum of 4.22 quintal / feddan in 2015 and a maximum of 8.05 quintal / feddan in 2018 with an average of about 6.60 quintal / feddan during that period. by estimating the equation of the general time trend of the feddan productivity of cotton during the period (2002-2019), it was found from the results of equation No. (2) Table No. (1) That the feddan productivity of the cotton crop took a general decreasing and not statistically significant trend, which indicates that it fluctuates around its average arithmetic during the study period.

Table No. 1. Equations of time series of the most important economic variables for the cotton crop in the Arab Republic of Egypt during the period (2002-2019)

equation number	variable	equation	R^2	F	average
1	Area (thousand feddan)	Y=667.54-27.48x (13.88)** (-6.18)**	0.71	38.31**	406.46
2	Productivity (quintal /Feddan)	Y=6.602-0.0002x (13.60)** (-0.004)	0.06	0.0017	6.60
3	total production (quintal)	Y=545484-265762x (10.96)** (-5.78)**	0.68	33.39**	2866456

Source: Compiled and calculated from Table No. (1) in the Appendix

3- The development of total production: The data of Table No. (1) in the appendix indicate that the total production of the cotton crop in Egypt was characterized by fluctuation during the period (2002-2019) between a maximum of 6078.99 thousand quintals in 2004 and a minimum of 917.85 thousand quintals in 2016 with an average estimated at 2,866.46 thousand quintals during that period. by estimating the equation of time series of the total production of cotton during the period (2002-2019), it was found from the results of equation No. (3) Table No. (1) that the total production of the cotton crop took a general decreasing trend and a statistically significant amount of about 265.76 thousand quintals annually with a decreasing rate Annually, it amounted to about 9.27% of the average during that period, and this is mainly due to the fluctuation of the cultivated area of the crop, as well as the fluctuation of productivity, and a coefficient of variation estimated at about 60.20% during that period - and the value (R^2) indicates that about 68% of the changes occurring in the total production are due to time factor.

Second: The relative importance of the items of production costs for the cotton crop in the Arab Republic of Egypt during the period (2002 - 2019):

To study the impact of the January 2011 revolution, and the liberalization of the exchange rate in 2016 on the production costs of the cotton crop in the Arab Republic of Egypt - the study period was divided into two periods, the first (2002 - 2010) as a base period and the second (2011 - 2019) as a comparison period in order to show the relative importance of the items of production costs The cotton crop in the Arab Republic of Egypt during the period (2002 - 2019) is clear from the data of Table No. (2) as follows:

1-Base period (2002-2010): The cost of rent came in the first place among the items of production costs, as it represented about 39.9% of the total costs, equivalent to about 66.1% of the variable costs - while the cost of human labor came in the second place for the items of costs, as it represented about 44.74%, 26.65% of both variable costs and costs The total, respectively, which indicates its relative importance to the cost items, as it represented about half of the variable costs and a quarter of the total costs - while the cost of chemical fertilizer came in the third place, as it represented about 16.48%, 9.78% of both the variable costs and the total costs, respectively. Automation costs came in the fourth place, representing about 15.05% and 9.20% of both variable costs and total costs, respectively. As for the cost of general expenses, it came in the fifth place, representing 8.92 and 5.31% of both variable costs and total costs respectively. Next in importance is the cost of pesticides, followed by municipal fertilizer, and finally the value of the seeds, which represented 5.35%, 5.28%, 3.03%, of the variable costs, while they represented about 3.21%, 3.16%, 1.79% of the total costs, respectively. The decrease in the relative importance of the cost Seeds, as the cotton crop is one of the strategic crops that the state subsidizes seeds to encourage farmers to plant them.

2-The comparison period (2011-2019): The cost of human labor came in the first place for the cost items, as it represented about 52.49%, 33.89% of both the variable costs and the total costs, respectively. This is due to the high wages of the human worker in all economic sectors and the agriculture sector particularly during the last period and since the cotton crop from Crops are intensive in the use of human labor, especially the process of harvesting the crop, which requires a large number of labor, and thus the high cost of human labor, as it represents more than half of the variable costs and about a third of the total costs, followed in relative importance by the rental cost, which represented about 33.96% of both costs. The total is equivalent to about 49.29% of the variable costs, due to the length of the crop's stay on the land, which increases the crop's share of the rental value, while the cost of automated work came in the third place, representing about 16.40% and 10.51% of both variable costs and total costs, respectively. Due to the large number of cotton irrigations, as for the cost of chemical fertilizers, it came in the fourth place, as it represented about 11.88%, 8.59% of both variable costs and total costs, respectively. While the cost of general expenses came in the fifth place, representing about 9.09%, 6% of both the variable costs and the total costs, respectively, while the value of pesticides, municipal fertilizers and finally seeds came next in importance, as it represented about 3.96%, 3.56%, 2.59 % of the variable costs, respectively, while they represented about 2.55%, 2.66%, and 1.83% of the total costs, respectively.

Table No. 2. The relative importance of the items of production costs of the cotton crop in the Arab Republic of Egypt during the study periods

Items / Year	workers wages	machinery fees	seed price	municipal fertilizer	chemical fertilizer	pesticides	general expenses	rent
Base period (2002-2010)								
% of variable costs	44.74	15.55	3.03	5.28	16.48	5.35	8.92	66.10
% of total costs	26.65	9.29	1.79	3.16	9.78	3.21	5.31	39.09
Comparison period (2011-2019)								
% of variable costs	52.49	16.40	2.59	3.56	11.88	3.96	9.09	49.29
% of total costs	33.89	10.51	1.83	2.66	8.59	2.55	6.00	33.96
Study period as a whole (2002-2019)								
% of variable costs	50.69	16.18	2.74	3.97	13.03	4.21	9.06	53.34
% of total costs	30.27	9.90	1.81	2.91	9.18	2.88	5.66	36.52

Source: compiled and calculated from Table No. (2) in the Appendix

3- **The study period as a whole (2002-2019)**: The cost of rent came in the first place also for the cost items, as it represented about 36.52% of the total costs, equivalent to about 53.34% of the variable costs. This is due to the long period of stay of the crop in the land and thus the increase in the share of the crop from the rental value, followed in importance by the cost of human labor, which came in second place Of the cost items, which represented about 50.69%, 30.27% of the variable costs and the total costs, respectively. As for the cost of automated work, it came in the third place, as it represented about 16.18%, 9.9% of both the variable costs and the total costs, respectively, due to the high cost of the irrigation process In cotton, due to the large number of irrigations, and the cost of chemical fertilizers came in the fourth place, representing about 13.03% and 9.18% of both variable costs and total costs, respectively, while the cost of general expenses came in the fifth place, representing about 9.06% and 5.66% From both the variable costs and the total costs, respectively, then the cost of pesticides, municipal fertilizers and seeds represented about 4.21%, 3.97%, 2.74% of the variable costs, respectively, while it represented about 2.88%, 1.91% and 1.81% of the total costs, respectively.

Third: The impact of local structural changes on the cotton crop in the Arab Republic of Egypt:

A: Economic Variables:

1-Cultivated area: It is clear from the estimated model in Table No. (3) and the equations derived from it that the model is significant at the level of significance (0.01), where the value of (f) was estimated at 15.554 - and the coefficient of determination (R^2) was about 0.769, which reflects the presence of an impact of the structural changes occurring on the cultivated area from The cotton crop after the revolution of January 25, 2011, as well as the liberalization of the exchange rate in 2016 - this is evident from Table No. (4), where the average area planted with the cotton crop decreased from about 515,787 thousand feddans during the base period (2002-2010) to about 237,146 thousand feddans during the comparison period (2011-2019) with a decrease estimated at 218,641 thousand feddans - representing about 42.294% of the average cultivated area during the base period - as it is clear from the same table that the annual decrease in the average cultivated area of the crop during the base period amounted to 49,482 thousand feddans, while the amount of decrease The annual average of the cultivated area of the crop during the comparison period amounted to 24,867 thousand feddans, and the significance of that annual decrease was statistically proven during the base period, while it was not proven during the comparison period - this means that there is an absolute decrease estimated at 24,615 thousand feddans, representing about 49.482% of the total The average cultivated area during the base period, due to the higher production costs of the crop by a greater percentage than the increase in the farm price of the crop, in addition to the difficulty of marketing the crop and competing with the most profitable crops. The comparison is equivalent to about 46% of the average cultivated area during the base period, due to farmers' tendency to grow more profitable crops.

2-Feddan productivity: It is clear from the estimated model in Table (3) and the equations derived from it that the model is not significant, as the value of (f) was estimated at about 1.087. Also, the value of the coefficient of determination (R^2) was about 0.179, which indicates that the feddan productivity of the crop was not affected by the structural changes that occurred during that period, as it became clear The average feddan productivity of the crop during the base period (2002-2010) amounted to about 6.7

quintals / feddan, which decreased to about 6.5 quintals / feddan during the comparison period (2011-2019), with a decrease of about 0.20 quintals - representing about 2.98% of the average feddan productivity during the period The baseline - this was not the significant decrease during the base period or the comparison period - which indicates a fluctuation in the feddan productivity around its arithmetic average estimated at 6.7 quintals / feddan, 6.5 quintals / feddan during the base and comparison periods - the value of the feddan productivity index also reached about 97.015%, which It indicates that the average feddan productivity of the cotton crop during the comparison period is about 97% of that during the base period.

3- farm price: The model estimated in Table (3) and the equations derived from it shows the significance of the model at the level of significance (0.01), where the value of (f) was estimated at 56.18 - and the coefficient of determination (R^2) was about 0.778, which reflects the presence of an impact of local structural changes on the agricultural prices of the cotton crop Especially after the revolution of January revolution 2011, as well as the liberalization of the exchange rate in 2016 - this is evident from the study of Table No. (4), where it was found that the average agricultural price of the cotton crop increased from about 792.67 pounds / quintal during the base period (2002-2010) to about 1982.22pounds / quintal during The comparison period (2011-2019), which means that there is an absolute increase estimated at about 1252.55 pounds, representing about 171.66% of what it was during the base period - as it is clear from the same table and the equations derived from it that the annual increase in the average agricultural prices of the cotton crop during the base period amounted to about 74.43 pounds rose to about 301.1 pounds during the comparison period, and the significance of this increase was statistically proven during the two periods - which means that the absolute effect was estimated at 226.67 pounds, equivalent to about 304.54% of its counterpart during the base period, - as the value of the agricultural price index indicates for the crop Cotton, estimated at 271.66%, indicates that the average farm prices for the cotton crop during the comparison period are about 172% of what they were during the base period, After the development of some cotton gins.

4- Total revenue per feddan: It is clear from the model estimated for the total revenue per feddan of the cotton crop in Table No. (3) and the equations derived from it, the significance of the model, where the value of (f) was estimated at 73.152 - and the coefficient of determination (R^2) was about 0.632, which reflects the existence of an impact of the local structural changes occurring on the total revenue per feddan of the cotton crop - as it was evident from the table that the average total revenue per feddan of the cotton crop increased from about 4,979.44 pounds / feddan during the base period (2002-2010) to about 13,874.4 pounds / feddan during the comparison period (2011-2019), with an increase estimated at 8,894.96 pounds - It represents about 178.63% of the average total revenue per feddan of the cotton crop during the base period - as it is clear from the same table that the average total revenue per feddan increased annually by about 456.95 pounds, and the significance of this increase was not statistically proven during the base period - while the annual increase in the average The total revenue per feddan of the cotton crop was estimated at about 2556.033 pounds for the comparison period, and the significance of that increase was statistically proven - this means that the absolute effect was estimated at 2099,083 pounds, representing about 459.37% of the average increase in total revenue during the base period. The increase in the prices of agricultural crops, especially during the recent period - as the index value of the total revenue per feddan of the cotton crop, which was estimated at about 278%, indicates that the average total revenue per feddan during the comparison period is equivalent to about 178% of its average during the base period, due to the impact of the revenue on changes The local structure that occurred after the January 2011 revolution, as well as the liberalization of the exchange rate in 2016.

5- The net per capita return: It is clear from the estimated model for the net yield per feddan of the cotton crop in Table No. (3) and the equations derived from it, the significance of the model, where the value of (f) was estimated at about 5.923 - and the coefficient of determination (R^2) was about 0.559, which reflects the presence of an impact of the local structural changes that occurred after the January revolution 2011, as well as the liberalization of the exchange rate in 2016 on the net feddan yield of the cotton crop - it was also clear from the data of the same table that the average net feddan return of the cotton crop during the base period (2002-2010) amounted to about 1850.89 pound / feddan, which rose to about 4486 pound / feddan during the period The comparison (2011-2019) with an absolute increase estimated at about 2635.11 pounds, representing about 142.37% of what it was during the base period - as it is clear from the same table that the amount of annual increase in the average annual net yield of the cotton crop during the base period amounted to about 120,733 pounds, and the

significance of this was not proven The increase was statistically significant, while the annual increase in the average net yield per feddan during the comparison period amounted to about 952.583 pounds, and the significance of this increase was not statistically proven either - which means that the absolute effect was estimated at 832,350 pounds, equivalent to about 692.28% of what it was during the first period. The value of the index, which is about 242.369%, indicates that the average net return during the comparison period is about 142% of what was the average net return during the base period, and this is due to the high price of the plantation of the cotton crop due to the state selling cotton to companies through farmers, and this The foregoing confirms that there is an effect of local structural changes on the net feddan yield of the cotton crop in the Arab Republic of Egypt.

B - The impact of local structural changes on the cost items of the cotton crop in the Arab Republic of Egypt:

1-The cost of human labor: It is clear from the study of the estimated model in Table No. (4) and the equations derived from it, the significance of the model at the level of significance (0.01), where the value of (f) was estimated at 50.14, and the coefficient of determination (R^2) was about 0.915, which reflects the presence of an impact of the local structural changes occurring on the cost of Human labor from the cotton crop as a result of the noticeable rise in the wages of the human worker after the January 2011 revolution and the liberalization of the exchange rate in 2016 in all economic sectors.

This also evident from the study from table no. (4) where the average cost of human labor per feddan of the cotton crop increased by about 824.78 pounds / feddan During the base period to about 3283.6 pounds / feddan during the comparison period - which means that there is an absolute increase estimated at 2458.82 pounds, representing about 298.118% of what it was during the base period–the high cost of the human labor is due to the fact that this crop is a crop that is intensively used for human labor, especially in the process of harvesting- It is also clear from the same table and the equations derived from it that the annual increase in the average human labor cost of the cotton crop during the base period amounted to about 79,833 pounds, and the significance of that increase was not statistically proven, it rose to about 659.1 pounds during The comparison period and the significance of that annual increase was statistically proven during the comparison period - which means that the absolute effect of the annual increase was estimated at 579.267 pounds, equivalent to about 725.59% of its counterpart during the base period - as the value of the human labor cost index for the cotton crop, which is about 398.118%, indicates The average cost of human labor during the comparison period is about 298% of its counterpart during the base period.

2- The cost of automated work: The study of the estimated model in Table No. (4) and the equations derived from it shows the significance of the model at the level of significance (0.01), where the value of (f) was estimated at 39,710, and the coefficient of determination (R^2) was about 0.895, which indicates the existence of an effect of the local structural changes that occurred on the cost of automated work for the cotton crop due to the high prices of agricultural machines as well as the prices of fuel used in their operation, which was reflected in the cost of using agricultural machines, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016. It was also shown from the same table that the average cost of automated work per feddan of the cotton crop increased by About 432 pounds / feddan during the base period to about 1025.8 pounds / feddan during the comparison period, which means that there is an absolute increase estimated at 593.8 pounds, representing about 137.45% of what it was during the base period - also it is clear from the same table and equations that the amount of annual increase in the average cost The mechanical work of the cotton crop during the base period amounted to about 25,267 pounds, and this increase was not statistically proven during that period. It rose to about 220,167pounds / feddan during the comparison period and this annual increase was statistically significant – while the absolute effect of the annual increase was estimated at 194.9 pounds, equivalent to about 771.36% of its counterpart during the base period. The value of the index for the cost of automated work for the cotton crop, which is about 237.45%, indicates that the average cost of automated work during the comparison period is equivalent to about 137.45% of its counterpart during the base period.

Table No. 3. Models measuring the impact of local structural changes on some economic variables of the cotton crop in Egypt during the period(2002-2019)

Variable	Period	area (feddan)	Feddan productivity (quintals / feddan)	Farm price (pounds / quintals)	Revenue (total revenue per feddan)	net yield per feddan (pounds/feddan)
average	Base period	515787.1	6.70	729.67	4979.44	1850.89
	comparison period	239390	6.50	1982.22	13874.4	4486.0
	absolute effect	276397	0.20	1252.55	8894.96	2635.11
	Relative effect %	53.587	2.985	171.66	178.63	142.37
Annual change amount	Base period	49482.585	-0.067	74.43	456.95	120.233
	comparison period	24867.55	0.198	301.1	2556.03	952.583
	absolute effect	24.615	0.131	226.67	2099.08	832.35
	Relative effect %	49.482	1.95	304.54	459.35	692.28
index number		46.412	97.0149	271.66	278	242.369
measurement models	Study period as a whole	Y=763100.028-49462.583t (11.359)** (4.14)** -117808.217d + 24595.033dt (-0.645) (1.457) F=15.554 R^2=0.769	Y=7.036 - 0.067t (10.129)** (-0.549) -3.302d+0.265dt (-1.748) (1.519) F=1.018 R^2=0.179	Y= 80.536 + 74.43t (0.369) (3.34)* +301.1d+10992.705dt (5.6)** (3.12)* F= 56.18 R^2 =0.778	Y=2694.694+456.950t (1.124) (1.072) -24654.717d + 2099.083dt (-3.780)** (3.484)** F= 23.152 R^2 =0.832	Y=1249.722+120.233t (0.779) (0.422) -10099.889d+832.350dt (-2.315) (2.053) F=5.922 R^2=0.559
	Base period	Y1=763100.028-49462.583t	Y1=7.036 - 0.067t	Y1=357.2+74.43t	Y1=2694.694+ 456.950t	Y1=1249.722+120.233t
	comparison period	Y2=645291.811-24867.550t	Y2=3.734+0.198t	Y2=2233.18+301.1t	Y2=-21960+2556.033t	Y2=-8850.167+952.583t

Source: It was collected and calculated from the data of Table No. (1) in Appendix Y indicates the estimated value of the variable during the study period (2002-2019). Y1 to the estimated value of the variable during the base period (2002-2010) Y2 to the estimated value of the variable during the comparison period (2011-2019)

Table No. 4. Measurement models for the impact of local structural changes on the cost items of the cotton crop in Egypt during the period (2002-2019)

variable	Period	Human labor cost (pounds/feddan)	Cost of automated work (pounds / feddan)	Seed cost (pounds/feddan)	municipal fertilizer cost (pounds/feddan)	Chemical fertilizer cost (pounds/feddan)
Average	Base period	824.72	432	59.56	98.89	824.72
	comparison period	3283.6	1025.8	162.2	222.6	3283.6
	absolute effect	2458.82	593.8	102.64	123.71	2458.82
	Relative effect %	298.118	137.45	172.33	125.09	298.15
Annual change amount	Base period	79.833	25.267	10.59	11.533	79.833
	comparison period	659.1	220.167	23.00	17.283	659.1
	absolute effect	579.267	194.9	12.41	5.75	579.27
	Relative effect %	725.59	771.36	117.19	49.86	725.59
index number		398.118	237.45	272.33	225.09	398.118
measurement models	Study period as a whole	Y=425.611+79.833t (0.981) (1.035) -6369.456d+579.267dt (-5.397)** (5.312)* F=50.140 R^2 = 0.915	Y=159.222+25.267t (1.028) (0.918) -2215.778d+194.900dt (-5.260)** (5.008)** F=139.701 R^2 = 0.895	Y=4.806+10.950t (0.295) **(3.786) -146.583d+12.050dt (-3.717)** (2.946)* F=57.351 R^2 = 0.952	Y=41.222+11.533t (0.622) (0.979) -60.633d+5.750dt (-0.336) (0.345) F =3.792 R^2 =0.448	Y=425.611+79.833t- (0.981) (1.035) -6369.456d+579.267dt (-5.397)** (5.312) ** F = 43.257 R^2 = 0.903
	base period y1	Y1=425.611+79.833t	Y1=159.222+25.267t	Y1=4.806+10.950t	Y1=41.222+11.533t	Y1=425.611+79.833t
	comparison period y2	Y2=- 5943.845+659.1t	Y2=-2056.556+220.167t	Y2=159.777+23t	Y2=-19.711+17.283t	Y2=- 5943.845+659.1t

Source: It was collected and calculated from the data of Table No. (2) in Appendix Y indicates the estimated value of the variable during the study period (202-2019) Y1 to the estimated value of the variable during the base period (2002-2010) Y2 to the estimated value of the variable during the comparison period (2011-2019)

3-The cost of seedlings: The study of the estimated model in Table (4) and the equations derived from it shows the significance of the model at the level of significance (0.01), where the value of (f) was estimated at 57,351.and the coefficient of determination (R^2) was about 0.925 which indicates the existence of an effect of the local structural changes that occurred on the cost of seeds for the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016, it was also clear from the same table that the average cost of seeds per feddan of the cotton crop increased from about 59.56 pounds / feddan during the base period to about 162.2 pounds / feddan during the comparison period - which means that there is an absolute increase It was estimated at 102.64 pounds, representing about 172.33% of what it was during the base period. It is also clear from the same table and its equations that the annual increase in the average seed cost of the cotton crop during the base period amounted to about 10.59 pounds, which rose to about 23 pounds during the comparison period, and it has proven significant , This annual increase is statistically significant during the two study periods - while the absolute effect of the annual increase in the cost of seeds was estimated at 12.41 pounds, representing about 117.19% of what it was during the base period - as the value of the index value of the cost of seeds for the cotton and seed crops indicates. The amount of about 272.23% indicates that the average cost of seeds during the comparison period is equivalent to about 172.23% of its counterpart during the base period.

4- The cost of municipal fertilizer: It became clear from the study of the estimated model in Table No. (4) and the equations derived from it, the significance of the model at the level of significance (0.05), where the value of (f) was estimated at 3.792, and the coefficient of determination (R^2) was about 0.448, which reflects the presence of an impact of the local structural changes occurring on The cost of municipal fertilizer for the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016. It was also clear from the same table that the average cost of municipal fertilizer increased from about 98.89 pounds / feddan during the base period to about 222.6 pounds / feddan during the comparison period - which means that there is an absolute increase estimated at 123.71 EGP represents about 125.09% of what it was during the base period - it is also clear from the same table that the annual increase in the average cost of municipal fertilizer for the cotton crop during the base period amounted to about 11,533 pounds, while the annual increase amounted to about 17,283 pounds during the comparison period and it did not prove significant This annual increase was statistically significant during the two study periods - while the absolute effect of the annual increase in the average cost of municipal fertilizer was estimated at about 5.75 pound, representing about 49.86% of what it was during the base period due to the scarcity of municipal fertilizer due to the lack of supply of it, as well as the cost of transporting it - as the index value of the average cost of municipal fertilizer for the cotton crop, which is about 225.09%, indicates that the average cost of municipal fertilizer during the comparison period is equivalent to about 125% of its counterpart during the base period.

5- The cost of chemical fertilizer: From the study of the estimated model in Table (4) and the equations derived from it, the significance of the model was shown at the level of significance (0.01), where the value of (f) was estimated at 43,257and the coefficient of determination (R^2) was about 0.903 which reflects the presence of an impact of the local structural changes occurring on The cost of chemical fertilizer for the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016. It was also clear from the same table that the average cost of The cost of chemical fertilizer for the cotton crop, increased from about 824.72 pounds / feddan during the base period to about 3283.6 pounds / feddan during the comparison period, which means that there is an absolute increase estimated at about 2458.82 pounds, representing about 298.15% of what it was during the base period, and this may be due to the high prices of chemical fertilizers during the recent period after lifting subsidies on the energy needed for fertilizer factories - it was also clear from the same table that the annual increase in the average cost of chemical fertilizers for the cotton crop during the period The basis was estimated at about 79,832 pounds, and the significance of that annual increase was not statistically proven, while it rose to about 659.1 pounds during the comparison period, and the significance of that increase was statistically proven during the comparison period - which indicates that there is an absolute increase in the average of The chemical fertilizer roll was estimated at 579.27 pound, representing about 725.59% of its theory during the base period. The index value of the average cost of chemical fertilizer for the cotton crop, which is about 398.118%, indicates that the average cost of chemical fertilizer during the comparison period is about 298.118% of its

counterpart during the base period due to the high Fertilizer prices in the recent period.

6- The cost of pesticides: From the estimated model in Table (5) and the equations derived from it, the model's significance was shown at the level of significance (0.01), where the value of (f) was estimated at 34,424, and the coefficient of determination (R^2) was about 0.881, which indicates that there is an impact of local structural changes on The cost of pesticides for the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016 - it was also clear from the same table that the average cost of pesticides for the cotton crop increased from about 432 pounds / feddan during the base period to about 1025.8 pounds / feddan during the comparison period - which means that there is an absolute increase estimated at about 593.8 pounds, representing about 137.45% of what it was during the base period - it was also clear from the same table that the annual increase in the average cost of pesticides for the cotton crop during the base period amounted to about 25.267 pounds, which is a statistically insignificant increase. That period, as the state was bearing the farmer a certain part of the crop resistance costs not related to the actual cost as support for the strategic export cotton crop at that time, while the increase in the average cost of pesticides for the cotton crop during the comparison period amounted to about 220,167 pounds, and this increase was statistically significant because the resistance during that period was done by the farmer and bears the full cost after lifting the support for the resistance costs for the cotton crop - which indicates an absolute increase estimated at 194.9 pounds, representing about 771.36% of what it was during the base period- The value of the index value of the average cost of pesticides for the cotton crop, which is about 237.45%, indicates that the average cost of pesticides during the comparison period is about 137% of its counterpart during the base period.

7- The cost of general expenses: From the study of the model estimated in Table No. (5) and the equations derived from it, the significance of the model was shown at the level of significance (0.01), where the value of (f) was estimated at about 47.250, and the coefficient of determination (R^2) was about 0.910, which indicates that there is an effect of local structural changes On the cost of public expenses for the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016 - it was also clear from the same table that the average cost of public expenses for the cotton crop increased from about 165.78 pounds / feddan during the base period to about 568.7 pounds / feddan during the comparison period - which means that there is An absolute increase estimated at about 402.92 pounds, representing about 243.04% of its counterpart during the base period. It was also found from the same table that the annual increase in the average cost of public expenses for the cotton crop during the base period was estimated at 17,897 pounds, which is a statistically insignificant increase for the decrease in the cost of public expenses during that period. However, during the comparison period, the annual increase in the average general expenses for the cotton crop was estimated at 107.23 pounds, and the increase was statistically significant, as the cost of public expenses became one of the important cost items during that period - which indicates that there is an absolute increase in the average costs of public expenses estimated at about 89.33 pounds, representing about 499.15% of its counterpart during the base period - and the value of the index value of the average cost of public expenses for the cotton crop, which is about 343.04%, indicates that the costs of public expenses during the comparison period Equivalent to about 243% of its counterpart during the base period.

8- **Variable costs**: It is clear from the estimated model in Table No. (5) and the equations derived from it, the significance of the model at the level of significance (0.01), where the value of (f) was estimated at about 46.726 – and the coefficient of determination (R^2) was estimated at about 0.909, which reflects the presence of an impact of local structural changes on variable costs For the cotton crop, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016 due to the rise in the prices of production requirements in general - it is also clear from the study of the table that the average variable costs of the cotton crop increased from about 1848.89 pounds / feddan during the base period to about 6255.3 pounds / feddan during the comparison period - Which means that there is an absolute increase estimated at about 4406.41 pounds, representing about 238.33% of what it was during the base period - as it is clear from the same table that the annual increase in the average variable costs of the cotton crop during the base period amounted to about 184,017 pounds, which is a statistically insignificant increase that rose to About 1167.417 during the comparison period, which is a statistically significant increase - which means that the absolute effect was estimated at about 983.4 pounds, representing about 534.41% of what it was during the base period - as indicated by the value of the index of variable costs estimated at 338.3 3% that the average variable costs during the comparison

period are equivalent to about 238.33% of their counterparts during the base period, which confirms what was previously reached about the presence of a clear impact of local structural changes on the prices of production inputs during the comparison period.

9- The cost of rent: The rent represents the fixed costs in relation to the total costs, and it represents a large part of the value of the total costs. The value of the rent or the rental cost reflects what is related to the crop from the feddan rental value. This value depends on the duration of the crop's stay in the land. from studying the estimated model in Table No. (5) and the derived equations From it, the significance of the model was found at a significant level (0.01), where the value of (f) was estimated at about 31.639 – and the coefficient of determination (R^2) was about 0.871, which indicates the existence of an impact of local structural changes on the cost of rent, especially after the January 2011 revolution and the liberalization of the exchange rate in 2016. - It also became clear from the same table that the average rental cost was estimated at about 1239.33 pounds / feddan during the base period, it increased to about 3083.1 pounds / feddan during the comparison period - which means that the absolute effect was estimated at about 1843.77 pounds, representing about 148.77% of its counterpart during the base period - It was also found from the same table that the annual increase in the rental cost during the base period amounted to about 150,067 pounds, which is a statistically insignificant increase during that period it rose during the comparison period to about 436.034 this increase was statistically significant- which indicates that there is an absolute increase in the average rental costs estimated at 285.967 pounds, representing about 190.56% of its counterpart during the base period - and the value of the index value of the average rental cost for the cotton crop, which is about 248.77%, indicates that the rental costs during the comparison period are equivalent to About 149% of its counterpart during the base period.

10- Total costs: The study of the estimated model in Table No. (5) and the equations derived from it shows the significance of the model at the level of significance (0.01), where the value of (f) was estimated at 58.165, and the coefficient of determination (R^2) was about 0.926, which indicates the presence of an effect of the local structural changes that occurred On the total costs of the cotton crop due to local disturbances such as the January 2011 revolution and the liberalization of the exchange rate in 2016 - it is also clear from the study of the table that the average total costs of the cotton crop increased from about 3128.56 pounds / feddan during the base period to about 9338.4 pounds / feddan during the comparison period, which means that the effect The absolute value was estimated at about 6,209.84 pounds, equivalent to about 198.43% of what it was during the base period - it was also clear from the same table that the annual increase in the average total costs of the cotton crop increased from about 336.717 pounds during the base period to about 1,633.45 pounds during the comparison period, and the significance of the increase was not proven Statistically during the base period, while its significance was statistically proven during the comparison period - which means that the absolute effect was estimated at about 1296.733 pounds, representing about 385.42% of what it was during the base period - as the index value of the average cost indicates The total cost of the cotton crop, estimated at 298.49%, indicates that the average total costs during the comparison period are about 198% of their counterpart during the base period, and this is due to the high general level of prices in general and the high prices of production requirements for agricultural production in particular. Accordingly, it can be said that the annual growth rate of the agricultural prices of the crop reached 11.15%, while the annual growth rate of the total costs was greater, estimated at 12.18%. However, the annual growth rate of the feddan net return amounted to 11.14% of the average net return during the study period, which is a rate It does not encourage farmers to expand or continue to grow and produce the cotton crop, so the cultivated area has decreased by about 6.76% despite the state's policy of continuous improvement in farm prices to go in line with the continuous and steady increase in production costs.

Table No. 5. Measurement models for the impact of local structural changes on the cost items of the cotton crop in Egypt during the period (2002-2019)

variable	Period	Pesticide cost (pounds/feddan)	General expenses (pounds/feddan)	Variable costs (pounds/feddan)	Rental cost (pounds/feddan)	Total costs (pounds/feddan)
average	Base period	432	165.78	1848.89	1239.33	3128.56
	comparison period	1025.8	568.7	6255.3	3083.1	9338.4
	absolute effect	593.8	402.92	4406.41	1843.77	6209.84
	Relative effect %	137.45	243.04	238.33	148.77	198.49
Annual change amount	Base period	25.267	17.897	184.017	150.067	336.717
	comparison period	220.167	107.23	1167.417	436.034	1633.45
	absolute effect	194.9	89.333	983.4	285.967	1296.733
	Relative effect %	771.36	499.15	534.41	190.56	385.42
index number		237.45	343.04	338.33	248.77	298.49
measurement models	Study period As whole	Y=159.222+25.267t (1.028) (0.918) -2215.778d+194.900dt (-5.260)** (5.008)** F = 34.424 R^2 =0.881	Y=76.444+17.897t (1.049) (1.380) -994.578d+88.333dt (-5.017)** (4.823)** F =47.250 R^2 = 0.910	Y=928.806+184.017t (1.157) (1.290) -11017.306d+983.400dt (-5.045)** (4.847)** F = 46.726 R^2 =0.909	Y=489.00+150.067t (1.238) (2.138) -3510.356d+285.967dt (-3.267)* (2.881) * F =31.639 R^2 =0.871	Y=1444.972+336.717t (1.436) (1.884) -14554.828d+1266.733dt (-5.319)** (5.010)** F = 58.165 R^2 =0.926
	Base period	Y1=159.222+25.267t	Y1=76.444+17.897t	Y1=928.806+184.017t	Y1=489.00+150.067t	Y1=1444.972+336.717t
	comparison period	Y2=-2056.556+220.167t	Y2=-918.134+107.23t	Y2=-10088.5+1167.417t	Y2=-3021.356+436.034t	Y2=-13109.856+1633.45t

Source: It was collected and calculated from the data of Table No. (2) in Appendix Y indicates the estimated value of the variable during the study period (2002-2019) Y1 to the estimated value of the variable during the base period (2002-2010) Y2 to the estimated value of the variable during the comparison period (2011-2019)

Finally, the study recommends the following:

1-Addressing the negatives arising from the local structural changes occurring in the markets, whether for production or the production factors that cause the rise in production costs

2-Continuous improvement in the agricultural price of the crop in proportion to the continuous and steady increase in production costs, as well as allowing a moderate profit margin for the farmer so that he can continue to grow the crop.

3-The need for the government to participate in providing production requirements for the crop at cost prices, especially since the crop is one of the important strategic and export crops.

4-The necessity of using modern technological methods that enable to increase productivity, such as varieties with high productivity, resistance to pests and different temperatures, as well as the application of crops that allow the use of mechanization instead of workers, especially in the process of harvesting the crop to reduce costs and thus increase the net return.

5- Revitalizing interest in scientific research and applied technology in the production process.

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Appendices

Table No. 1. The most important economic variables for the cotton crop in the Arab Republic of Egypt during the period (2002-2019)

the year	Area (feddan)	Productivity (quintals/feddan)	total production (thousand quintals)	Total Costs Feddan (pounds)	Farm price (pounds / quintals)	Total revenue perfeddan (pounds)	feddan net yield (pounds)
2002	706411	6.85	5794.745	2063	410	2892	829
2003	535090	7.04	4836.171	2111	535	3865	1754
2004	692285	6.97	6078.993	2275	615	4393	2118
2005	656586	6.22	5001.685	2617	733	4675	2058
2006	536396	7.10	4666.055	2965	780	5654	2689
2007	549033	6.86	4789.274	3437	671	4736	1299
2008	312708	6.46	2020.094	4120	806	5347	1227
2009	284434	6.30	1785.311	3998	677	4401	403
2010	369141	6.49	2395.725	4571	1340	8852	4281
2011	520122	7.75	1864.940	5193	1066	8408	3215
2012	333360	5.59	1863.482	5490	1169	6713	1223
2013	286724	5.61	1603.202	5626	1474	8456	2830
2014	369176	5.30	1954.703	5916	1172	6406	490
2015	240866	4.22	1017.433	5631	1245	5436	-195
2016	131751	6.97	917.856	10736	2711	19069	8333
2017	216950	7.56	1639.941	13491	2874	21919	8428
2018	335976	8.05	2705.012	14953	3018	24508	9555
2019	239390	7.48	1802.658	17010	3111	23505	6495
average	**406466.61**	**6.60**	**2866.465**	**6233.50**	**1355.94**	**9292.0**	**3168.44**
Variation coefficient	**42.98**	**14.51**	**60.20**	**73.97**	**67.48**	**78.70**	**95.23**
growth rate	**-6.76**	**0**	**-9.27**	**12.18**	**11.15**	**11.97**	**11.14**

Source: Ministry of Agriculture and Land Reclamation - Economic Affairs Sector - Agricultural Economics Bulletin - Various issues.

Table No. 2. Economic variables for the cost items of the cotton crop requirements in Egypt during the period (2002-2019) (wages, costs, revenues and net return: in pounds)

year	Area (feddans)	Productivity Feddan(Quintals)	workers wages	Fees of machines	Cost of seeds	municipal fertilizer	chemical fertilizer	pesticides	general expenses	Variable costs per feddan	Rent	Total costs per feddan	Total revenue per feddan	net per capita return
2002	706411	6.85	590	205	31	65	173	86	109	1271	804	2063	2892	829
2003	535090	7.04	603	210	32	66	177	88	112	1388	723	2111	3865	1754
2004	692285	6.97	648	214	33	84	215	94	126	1384	806	2275	4393	2118
2005	656586	6.22	694	294	36	83	281	112	150	1651	966	2617	4675	2058
2006	536396	7.1	769	276	36	95	276	84	154	1691	1274	2965	5654	2689
2007	549033	6.86	841	264	62	71	314	83	163	1799	1338	3437	4736	1299
2008	312708	6.46	1000	329	104	130	427	107	209	2297	1833	4120	5347	1227
2009	284434	6.3	1004	346	99	114	455	91	211	2321	1677	3998	4401	403
2010	369141	6.49	1274	432	103	182	495	93	258	2838	1733	4571	8852	4281
average	515787.1	6.70	824.78	285.56	59.56	98.89	312.56	93.11	165.78	1848.89	1239.33	3128.56	4979.44	1850.89
2011	520122	7.75	1660	445	98	216	528	98	304	3350	1843	5193	8408	3215
2012	333360	5.59	1664	560	105	235	579	106	325	3575	1915	5490	6713	1223
2013	286724	5.61	1815	545	112	150	575	163	336	3698	1928	5626	8456	2830
2014	369176	5.3	1993	615	124	156	545	171	361	3971	1945	5916	6406	490
2015	240866	4.22	1780	621	134	133	530	150	335	3684	1947	5631	5436	-195
2016	131751	6.97	3386	892	143	148	690	218	548	6026	4710	10736	19069	8333
2017	216950	7.56	4852	1499	207	426	896	307	819	9006	4485	13491	21919	8428
2018	335976	8.05	5897	1735	270	94	1061	446	950	10453	4500	14953	24508	9555
2019	239390	7.48	6505	2320	267	445	1287	571	1140	12535	4475	17010	23505	6495
average	**297146.1**	**6.5**	**3283.6**	**1025.8**	**162.2**	**222.6**	**743.4**	**247.8**	**568.7**	**6255.3**	**3083.1**	**9338.4**	**13824.4**	**4486.0**

Source: Ministry of Agriculture and Land Reclamation - Economic Affairs Sector - Agricultural Economics Bulletin - Various Issues

الملخص العربي

دراسة تحليلية لأثر التغيرات الهيكلية علي أسعار مستلزمات الإنتاج الزراعي في ظل المتغيرات المحلية الراهنة بجمهورية مصر العربية

(دراسة حالة:محصول القطن)

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تنحصر مشكلة الدراسة في أن الإنتاج الزراعي بصفة عامة ومحصول القطن بصفةً خاصة يشهد تزايد مستمر في متوسط التكاليف الإنتاجية الفدانية – الأمر الذي اضعف من قدرة المزارعين في الحصول علي أكبر قدر من الإنتاج بأقل قدر من التكاليف وبالتالي اضعف قدرتهم علي تحقيق الكفاءة الإنتاجية والاقتصادية للإنتاج الزراعي عامةً ولمحصول القطن والموارد المستخدمة في إنتاجه بشكل خاص و علي الرغم من تزايد أسعاره من فترة لأخرى لكن تزايد أسعار مستلزمات الإنتاج كان أسرع بما أثر علي المساحة المنزرعة منه والتحول إلي زراعة محاصيل أخري أكثر ربحية . ولقد شهدت الفترة الأخيرة بعد عام ٢٠١١ وحتى الآن ارتفاعاً ملحوظاً في أسعار مستلزمات الإنتاج بصفة خاصة والمستوي العام للأسعار بصفة عامة – الأمر الذي كان له بالغ الأثر وخاصة علي القطاع الزراعي .

وتهدف الدراسة بصفة عامة إلي توصيف التغيرات التي طرأت علي تكاليف إنتاج محصول القطن بجمهورية مصر العربية وكذا التطورات الحادثة في تكاليف إنتاج المحصول من خلال تقسيم فترة الدراسة إلي فترين الأولي (٢٠٠٢-٢٠١٠) كفترة أساس، والثانية (٢٠١١-٢٠١٩) كفترة مقارنة، وذلك بهدف التعرف علي ما أحدثته التغيرات الهيكلية المحلية مثل ثورة ٢٥ يناير ٢٠١١ وكذا تحرير سعر الصرف للجنيه عام ٢٠١٦ وأثر ذلك علي ربحية الفدان من المحصول و المساحة المنزرعة منه.

وكانت أهم نتائج الدراسة أن المساحة المنزرعة بمحصول القطن أخذت اتجاها عاماً متناقصاً ومعنوي إحصائيا بلغ حوالي ٢٧,٤٨ ألف فدان سنوياً وبنسبة تناقص سنوي بلغت نحو ٦,٧٦% من المتوسط خلال تلك الفترة ، وقد يرجع انخفاض المساحة المنزرعة من المحصول لانخفاض صافي العائد منه وصعوبة تسويقه في الوقت الذي ترتفع فيه تكاليف الإنتاج بصورة مضطردة ، وبدراسة الأهمية النسبية لبنود التكاليف جاءت تكلفة الإيجار في المقدمة لبنود التكاليف حيث مثلت نحو ٣٦,٥% من التكاليف الكلية وتعادل نحو ٥٣,٣% من التكاليف المتغيرة ، يليه في الأهمية تكلفة العمل البشري حيث جاءت في المرتبة الثانية من بنود التكاليف حيث مثلت نحو ٥٠,٧% ، ٣٠,٣% من التكاليف المتغيرة والتكاليف الكلية علي الترتيب، أما تكلفة العمل الآلي فقد جاءت في المرتبة الثالثة حيث مثلت نحو ١٦,٢% ، ٩,٩% من كلا من التكاليف المتغيرة والتكاليف الكلية علي الترتيب ، وبدراسة أثر التغيرات الهيكلية المحلية علي أهم المتغيرات الاقتصادية لمحصول القطن يتبين أن متوسط المساحة المنزرعة بالمحصول خلال فترة المقارنة تعادل حوالي ٤٦% تقريباً من متوسط المساحة المنزرعة خلال فترة الأساس وذلك بسبب اتجاه المزارعين إلي زراعة المحاصيل الأكثر ربحية. كذلك يتبين أن متوسط الأسعار المزرعية لمحصول القطن خلال فترة المقارنة تعادل نحو ١٧٢%عن ما كانت عليه خلال فترة الأساس وأن متوسط التكاليف الكلية خلال فترة المقارنة تعادل نحو ١٩٨% من نظيرتها خلال فترة الأساس، أن متوسط صافي العائد خلال فترة المقارنة تعادل نحو ١٤٢ % مما كان عليه متوسط صافي العائد خلال فترة الأساس.

الكلمات المفتاحية : التغيرات الهيكلية ، مستلزمات الإنتاج الزراعي ، الأثر المطلق ، الأهمية النسبية