



## STATISTICAL ESTIMATION OF PRODUCTION AND COSTS FUNCTIONS OF CEREAL IN THE ARAB WORLD

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### ABSTRACT

The cereal crop of the most important strategy crops in Arab world, this being a staple food of the citizen Arab, and is the research problem in the decline of production of the main cereal crops of wheat, maize, rice and sorghum rates in the Arab world, which accounts for about 50.7 million tons with an increase of consumption, which represent about 129 million tons during the period (2000-2013), and targeted research study economy, thus the Arab homeland cereal production through the study of the current situation of cereal production for the most important producing countries, and the estimation of the statistical production functions and costs for cereal Arab world .

**The most important results have resulted in the following:**

- 1- Studying the cereal production function in the short run in Arab world, and estimates flexibility productivity total of elements used for the function, which reflected the nature of increasing returns to scale for the three categories, respectively, in terms of production increases by the biggest increase production elements used, and appreciated the flexibility the production total of the elements of production in the estimated function in the long run, which amounted to

about 0.9 nature of returns to scale declining terms of decreasing production by less than the increase in production factors.

- 2- The estimation of the economic efficiency of the use of seeds, and the number of agricultural tractors, and fertilizers in cereal functions production for world Arab for the three categories of productivity, results showed that there Optimal utilization of the two elements of seed and fertilizer in the third category and this agreed with the economic logic and therefore advised production under this category because it represents the appropriate size for the production of cereal –in Arab world, and the assessment of the economic efficiency of the productive classes the first and second shows the significant need to intensify the use of racist seeds, agricultural tractors and agreed with this economic logic .
- 3- By studying the cost functions of production for cereal-producing countries for cereal world Arab three classes in the short and long respectively term, low cost per unit produced increased scale productivity shows that consistent with economic logic, and thus advised to production on an economic scale under the third category as they approach the appropriate size cereal production, which represents the average output of about 23.2 million tons, and size optimized for the production of about 30 million tons, which means higher economic efficiency for this category and therefore is cereal production in this category, which is represent-

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ed in Egypt, Morocco, Iraq, Syria, Somalia is better than the technical and economic face on the basis of less expensive Mid of the second category, regardless of the first category where not recommended for the production of cereal in the first category on an economic scale, which is represented in Oman, Kuwait, Mauritania, due to the weakness of each of the areas and so production can have, and the average

unit cost of about 1.3, 106.6, 22.9 dollars per ton, respectively for the three categories, and this confirms previous results, also showed marginal costs for cereal estimates in the long run, which amounted to about \$ 33.8 / ton, while the average cost of producing a ton of grain amounted to about \$ 20, and as the optimal size of the production of about 20.25 million tons in the long run.