

Economic orientation of Egypt's cotton exports and imports

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1. Introduction

Cotton is the most crucial Egyptian fiber crop because of its economic value in production, consumption, industrialization, and foreign trade. Moreover, it has a social significance since a large percentage of labor works in its production at all stages. In addition to the crucial of Cotton in the production of clothing and non-clothing household uses, its by-products are used in several activities that contribute to satisfying the needs of living beings, humans and animals, and represent a critical source of national income.

A necessity of developing a trade among the producing and consuming countries has arisen, because of the centralization of producing cotton, especially certain types, in few countries versus the need of all the countries of the world to consume cotton.

Unfortunately, the pricing and marketing Egyptian policies regarding cotton crop led to the reluctance of many farmers to cultivate cotton. So, the cotton cultivated area, which was about 1.7 million acres during the 1960s, shrunk to be 575.000 acres then 214.000 acres in 2007 and 2015 respectively. Accordingly, the exports of cotton decreased dramatically from about 111.000 tons in 1999 to be about 36.000 tons in 2015. Additionally, the imports of cotton increased from about 500 tons in 1998 to be about 74.5 thousand tons in 2015.

The research aims to identify the current situation of the cotton's imports and exports trade in Egypt, its global distribution and investigate the alternatives to determine the best export destination which maximizes export revenue or minimize export cost.

2. Materials and Methods

The linear programming approach was used for identifying the best distribution for Egypt's cotton exports that will maximize the exports' revenue as well as the best distribution for Egypt's cotton imports that will minimize the imports' payments.

Linear programming is a mathematical method aimed at maximizing or minimizing a linear function called the goal function and defined by known or assumed limits called restrictions, and this method is based on a set of conditions, the most important of which is that the relationships between all factors or variables are linear and based on this condition, so linear programming derives its name from this condition.

Objective function: The goal behind the optimal exploitation of the available resources through a function that includes a group of variables called resolution variables we seek to determine their values, which in turn determines the value of the desired goal.

The constraint functions the set of determinants or obstacles to which they must be subjected in order to achieve the goal and reach the best decision and basically reflect the resources available in a limited way.

The linear programming model consists of the objective function that should be increased or decreased, the possible activities and alternatives, besides the restrictions and limitations of these activities. The research utilized several international and local bulletins and periodicals, international trade publications for the Central Office for General Mobilization and Statistics,

as well as bulletins of the National Bank, the Central Bank, FAO, and the Cotton Exporters Union magazine, besides websites.

3. Results and Discussion

1- Maximizing the revenue of Egypt's cotton exports

In (2013- 2016) Egypt exported cotton, 32898 tons annually, to 32-country, with a revenue of 93.5 Million\$. Regarding the exportation prices, the maximum price was paid by Switzerland, as it was 6,78 thousand dollars\ton. Then the price decreased till it reached the minimum price, 2.99 thousand\$\ tons, for Morocco.

The study hypothesizes several alternatives for distributing the Egyptian exports of Cotton, and defines the best preference using linear programming,

1st alternative: open, not limited to a certain country, distribution for the highest price.

2nd alternative: exporting cotton for the importing countries who imported the Egyptian cotton for the last four years, but the exporting amount for each country should not exceed

- a) 40% of the total exports.
- b) 20% of the total exports.
- c) 10% of the total exports.

3rd alternative: exporting cotton to the key importing countries that its annual average of exporting the Egyptian cotton is not less than 3% of the total average of the cotton's exports.

According to 1st alternative, the exports of Egyptian cotton will be for Malaysia, followed by Switzerland and Saudi Arabia, and the current revenue of the cotton's exports will be increased by 48%.

According to the 2nd alternative,

assumption (a): the exports will be for 3 countries; Japan, Italy and South Korea, and the current revenue of the cotton's exports will be increased by 27.6%.

assumption (b): the exports will be for 6 countries; Japan, Italy, Korea, Germany, America and Thailand, and the current revenue of the cotton's exports will be increased by 17.7%.

assumption (c): the exports will be for 10 countries; Japan, Italy, Korea, Germany, America, Thailand, Belgium, Turkey, China, and Mexico respectively and the current revenue of the cotton's exports will be increased by 10.37%.

According to the 3rd alternative, the exports will be limited to Italy, and the current revenue of the cotton's exports will be increased by 27.7%.

2- Reducing the cost of Egypt's cotton imports

During (2013-2016) Egypt exported cotton from 12- country, Greece, America, Benin, Burkina Faso were the key exporters, with an average cost of 144.5 million dollar\year. Regarding the importing price, the minimum price was from Greece, 1926\$\ton, then Benin followed by Burkina Faso, then the prices increased gradually till it reached the maximum price, 4767\$\ton from Malaysia.

The study hypothesizes several alternatives for the Egyptian's Cotton imports, and defines the best preference using linear programming,

1st alternative: the open, not limited to a particular country, distribution for the lowest price.

2nd alternative: distributing the Egyptian's imports of cotton according to the lowest price from the Key exporting countries, from which Egypt imports at least 10% and not more than 60% of its imports of cotton.

According to the 1st alternative, the imports will be from one country, Greece, and the importing costs will be reduced by 7.4%.

According to the 2nd alternative, the imports will be from two countries, Greece, and Benin, as a result, the importing costs will be reduced by 7.3%.

4. Conclusions

The study defines 3 alternatives for Egypt's exports of cotton, which will increase the revenue of the cotton's exports by 10.37% to 48% comparing to the current revenue. Furthermore, the study defines two alternatives for Egypt's imports of cotton, which will reduce the costs of the cotton's imports by 7.4% or 7.3% comparing to the current costs of imports.

5. References

Central Agency for General Mobilization and Statistics, National Income Estimates, (1998-2016). Internal Bulletins, Egypt.

Ministry of Agriculture and Land Reclamation, Economic Affairs Sector Central Administration of Agricultural Economy (1998-2016). Annual Bulletins, Various Numbers; Egypt.

Ministry of Public Business, Cotton and International Trade Company, Cotton, (1998-2016). Monthly Bulletin, Advertising Sector and International Organizations, General Directorate of Advertising and Information, Egypt.

Food and Agriculture Organization of the United Nations. Retrieved from www.fao.org (1998-2016).