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ECONOMIC EVALUATION OF THE MOST IMPORTANT TREES PLANTED IN WOODS FORESTS IN THE SARABIUM REGION OF ISMAILIA GOVERNORATE

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ABSTRACT

The agricultural sector plays a vital role in the economic, social and environmental development process. It depends on achieving many objectives such as providing food needs and raw materials for industries, as well as providing the necessary foreign exchange to finance economic, social and environmental development programs. The State has been interested in drawing up plans to maximize the use of available and limited resources, such as water resources in Egypt, due to its limitedity. What distinguishes the water system in Egypt is that it is a closed system, i.e. water is reused several times. The most important of these uses is the reuse of treated wastewater to irrigate areas cultivated with trees of different types, For the purpose of producing oils, dyes and entering into paper industries, and also to establish sustainable wood forests for the purpose of wood production to contribute to reduce the gap of foreign trade of wood in Egypt, and this use may work to preserve water resources and to reduce of water streams that receive this type of water and improve environmental and health conditions as well as contributing to the creation of large green spaces improve the atmosphere characteristics and work as windbreaks around the cities that have a desert back ground and reduce temperatures in by forest areas.

The findings show that economic indicators of the most important trees planted in the forest showed that the Red gum trees are came first in terms of the yield of the invested pound, which is about 246.41 pounds And in first place in terms of lower cost of production per tonne, amounting to about 2.48 pounds, while the trees come Casuarina sp. second in terms of return Pound, which amounted to 153.70 pounds and the fourth in terms of the cost of production of the ton, which amounted to about 3.93 pounds. Cupressus sp. trees came third in terms of the pound, which amounted to 127.49 pounds and the third place in terms of the cost of production of tons, which amounted to about 3.49 pounds, The yield of the pound for the trees of the Asersus, E.Citriodora, Khayasenegalensis and pine reached 81.95, 65.31, 53.79 and 41.79 respectively, while the production cost per ton was 3.31, 9.48, 6.72 and 9.29 respectively. It is noted that the Red gum trees obtained the highest yield in terms of the pound and the minimum cost of production of tons, and that the increase in investment and expansion of agriculture yields a better return and a good opportunity to invest.

The average annual net yield of the most important trees planted in the Sarabum Forest in the Sarabum area was 16155.53 LE / feddan / year, if compared to the net yield of the most important traditional agricultural rotations for some major crops, net annual yield of the period from (2000-2016) and which corresponds to the age of trees in the forest (area of study) was calculated. It was found that the agricultural rotation of crop (continuous clover + rice) represents the highest average net yield of about 7246.2 pounds / feddan / year. Thus, the average net yield of the most important

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trees is about 2.23 times that of the counterpart calculated from the traditional agricultural rotations. Therefore, the planting of trees in the forest (area of the study) is considered economical, so the cultivation of the trees should be considered, especially in the desert back ground of the governorates. Without prejudice to traditional crops, as the tendency to plant forests is necessary to improve the environment and a safe way to dispose of treated wastewater so as not to adversely affect the waterways.

The results of the economic indicators for the use of the water component in the production of different types of trees planted in the forest were also shown. The price per cubic meter of water (LE / m^3) ranged from a minimum of 1.98 (LE / m^3) of Cupressus sp. trees to a maximum of 2.78 (LE / m^3) for pine trees with an average of about 2.26 (LE / m^3). It was found that the value of net return of cubic meters of water ranged between a minimum of about 27.74 (LE / m^3) for pine trees and a maximum of 121.87 (LE / m^3) for Red gum trees at an average of about LE 56.80 (LE / m^3) The yield per cubic meter (tons / m^3) was between 0.056 (tons / m^3) for Eucalyptus sp. limmine trees and a maximum of about 0.200 (tons / m^3) for Red gum trees at an average of 0.121 (tons / m^3). As for the return of the pound of irrigation costs per feddan, the value ranged from a minimum of about 149.8 pounds for pine trees and a maximum of about 855.5 pounds for the trees of Red gum with average of about 383.9 pounds. The ratio of irrigation costs to variable costs ranged from a low of about 47.3% for Eucalyptus sp. limestone trees, kaya trees with the same percentage and a maximum of 53.4% for Red gum trees, Casuarina sp. trees with the same percentage, and with averaging of about 50.7%.

The results of the economic evaluation of trees planted in the forest showed that Red gum trees are better and more efficient tree species in the forest and there is economic feasibility of expanding their cultivation, and therefore some financial measures were made to study the economic feasibility of planting Red gum trees. The results showed that the Profitability Index (PI) at 25% discount rate, 28% for Red gum trees palms without change in cost and revenue factors and the project lifetime attained about 2.02 and 1.45 respectively, which confirms the feasibility of the project Greater than the correct one, which means that each pound invested in the project achieves a net return of 1.02, 0.45 pounds, respectively. As reported the current net cash flows or net present value (NPV) of the project is toward the 15,240, 66081 pounds, respectively. And the internal rate of return (IRR) of the project is 31.5%. This means that the rate of return is greater than the opportunity cost prevailing in the community at the study, which is the interest rate, is 25%. Accordingly, the Pay-Back period of the project capital is estimated at 3.2 years, which confirms that there is a capital turnover of the capital. From the above, it is clear that the expansion of the cultivation of the trees Red gum is economically feasible.

Key words: Economic feasibility study, Forests, Treated Sewage Water, Internal Rate of Return