Economic evaluation of propagation funds on stable yield of wheat and canola in parsabad moghan city
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ABSTRACT
This paper evaluates the economic impact of projects fund and personnel costs of propagation on operating performance of the country's two main products, namely wheat and canola, between the years 1997-2007, in Parsabad Moghan region. In this study, data is consisting of three sections: descriptive analysis, and regression relations. In regression analysis, "projects’ fund and propagation of personnel costs" is the independent variable; and “wheat yield” as well as "canola yield" are dependent variables which are inserted into two separate equations, respectively. And given the significance of the value of F (P = 0/0000), in both equations, and also with regard to the high amount of R², it can be concluded that propagation credits are the major role in increasing or reducing the performance of these two products. It can also be concluded that the effect of propagation in increasing the wheat is more than canola yield and it is able to explain 91% of the yield changes of this product. Also, given the amount of R², the credits in the case of canola is able to explain 71% of the changes in performance of this product.

Keywords
Economic, Wheat, Stable, Canola.

Introduction
Parsabad Moghan City (Moghan region) is located by the Aras River in the northern most part of Iran. Cereals are always the most important part of food for humankind (Rafati, M., 1995). Wheat in agricultural section, national economy and supplying food security is of strategic importance and provide more than 40% of body energy (Bi Naam, 1996). And seed oil of canola is of good quality. Finally, after oil extraction, the residual meal is rich in protein and suitable to be used for animal feed (Afshari Azad, Homayoon, 2001) Ministry of Agriculture and Natural Resources and Agricultural Engineering Organization are working compatibly in order to achieve healthy food and sustainable agriculture (Moosa Nejad, M. Gh 1978). It is essential to propagate modern technology both in wheat and canola planting and harvesting to reach national self-sufficiency in producing these strategic products, this work needs for propagating investment (Bi Naam, 1996). Because farmers use water and land for agricultural production that are considered part of national resources, inappropriate utilization of them is not only harmful to themselves but also to the national resources and may result in serious dangerous for next generations. Therefore, such trifle funds on propagation can be resulted in less efficiency and more supports are needed (Mosher, A. T., 1976). Otherwise, not only we could not reach self-sufficiency in wheat and canola production but also we will be just a complete import-user (Kuroda, Y. 1997).

Materials and Methods
In order to evaluate the economic effects of propagation on agricultural productivity, namely wheat and canola in Parsabad Moghan City between the years 1997 to 2006 time series data was used for these two products (including area under cultivation, total production and yield) and the time series data was used for propagation funds (including funds for propagation research projects and personnel costs) (Ministry of Finance, 2008).

Results and Discussion
According to the following Table, descriptive analysis of data can be discussed in which the average and standard deviation of each variable is included, then by using changes coefficient its value is obtained.

Among the variables studied (including cultivation, total production and yield), four variables, "total production of wheat and canola, wheat and canola yield" showed significant positive relationship with the propagation funds.

And in the correlation analysis of variables (total production of wheat, propagation funds, and wheat and canola hectares under cultivation) have direct relationship and it was significant in 99%. In this analysis, the "projects' funds and propagation of personnel costs" as the independent variables, and "wheat yield" and "canola yield" as dependent variables are entered in two separate equations, respectively. In other words, given that in both analyzes, the variable "funds and propagation costs" integrated into the equation and were able to explain a lot of changes in the dependent variable, the impact of these funds to increase productivity of these two products is quite evident. Given the amount of R², for wheat and canola 0.91 and 0.71, respectively, it can be concluded that the propagation effect in increasing wheat yield was more than yield of canola and it is able to explain 91% of the yield changes of this product. Also, regarding the amount of R², these costs for canola is able to explain 71% of yield changes.

According to the table, the highest yield in 2004 and 2005 were 113710 and 136395 kg per hectare, respectively, while the highest yield of canola in 2004 and 2005 were 4766 and 3863 kg per hectare, respectively.

This issue represents a simultaneous increase in the yield of these two products for these years. Also, the minimum wheat was 4200 kg per hectare in 1996, while the minimum yield of canola was 2030 kg per hectare in 2003. Also, higher...
standard deviation of wheat yield compared to canola over the years, suggests further changes of that which it could be caused by political factors and organizations. Finally, the costs of propagation were analyzed descriptively. According to Table 2, the average costs (including projects and credits) for the two products is 11841 thousand in Rls which its minimum amount occurred in 1996 about 1800 thousand Rls.

From Table 3, among variables studied (including cultivation, total production and yield) four variables, i.e. "total production of wheat and canola, wheat yield and canola yield," showed significant positive relationship with the propagation costs. This means that according to the $r$ value and its significance level ($P$), it can be expected that increased propagation spending, total production of these two main and strategic products are increased per hectares. Further, focusing on this table reveals that among mentioned variables, wheat yield per hectare has the most important correlation with propagation costs ($r=0.85$, $P=0.0001$). Therefore, it can be expected that increasing propagation budgets will result in more changes in wheat yield.

**Conclusion**

This study showed that the propagation costs have an effective role in increasing productivity and yield of two major products, i.e. wheat and canola. In other words, if in the process of agricultural development, more attentions have been paid to propagating the research project and its personnel costs, not only it will be beneficent but also results in profit increase in the form of product increase of these two productions. And, increasing propagation cost is recommended at least for the promotion of educational services for these products. To be successful in this regard, it is essential to be supported by government and creating environments in which farmers are encouraged to refer it.

**References**