



The Economic Efficiency Of Water Irrigation Usage and Restructuring Cultivation of Agricultural Crops

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Abstract: Utilizing and the allocation of irrigation water resources is considered crucial for Egyptian agriculture given the country's limited water resources, and the low efficiency of use due to the high losses resulting from surface and flood irrigation systems, in addition to the wasteful use of irrigation water. The research mainly aimed to reallocate the cultivation of agricultural crops on the basis of raising the efficiency of irrigation water resources' use through rationalizing water consumption as a highly important resource that should be carefully used. The research relied on some descriptive statistical methods, in addition to estimating some relevant economic indicators like cost per water unit, net revenue per water unit, water application rate per ton, cost of water application rate per ton, and net return on water application rate per ton. Main results obtained from applying minimum cost and maximum net revenue per water unit revealed that adopting the proposed cropping patterns shall lead to raising production of all the study crops, which in turn will lead to reducing imports of various agricultural crops, thus deficit in the balance of payments and the national dept. Finding also revealed that applying minimum cost and maximum revenue per water unit resulted in increased quantities of various agricultural crops and higher percents of decline in Egyptian imports, where declines increased by 51.59% and 49.78%, respectively. As a result, the research highly recommended adopting the proposed cropping patterns using minimum cost per water unit given the positive impacts it demonstrated on crop production and imports volume compared to the results obtained from using maximum net return per water unit.

Key words:- Economic Efficiency - Irrigation Water - Restructuring Cultivation - AgriculturalCrops.