Food Security in the United Arab Emirates (UAE): The Great Competition between the Agricultural and Forestry Sector on Irrigation Resources

Suzan Marwan Shahin and Mohammed Abdul Muhsen Salem
Aridland Agriculture Department, College of Food & Agriculture
United Arab Emirates University (UAEU)
Al Ain, United Arab Emirates (UAE)
suzan.shahin@uaeu.ac.ae; mohammed.s@uaeu.ac.ae

Abstract - The United Arab Emirates (UAE) is a country that has scarcity in fresh water resources. Groundwater, which contributes to 70% of the total water resources in the country, is a non-renewable water resource. This resource plays significant role in converting the desert to a green paradise. It covers around 95% and 82% of the watering requirements of the agricultural and forestry sector, respectively. Besides the critical problems that this resource suffers from; including depletion, saline water intrusion and contamination. It has also a limited life time expectancy, estimated to be between 16 to 36 years. The total annual water withdrawal by the green sector in the country is estimated to be above 2198 million m^3, from which above 32% is used to cover the irrigation requirements for the forestry sector and landscaping, while the rest amount is used for crop production purposes. The great competition between the two sectors, lead to make the sustainability approach in maintaining both sectors extremely difficult, especially with the absence of groundwater supply and the sharp population growth. Therefore, serious and quick actions have to take place; in order to save the future of food security in the UAE.

Keywords: water scarcity, groundwater depletion, non-conventional water resources, treated domestic wastewater, agricultural sector, forestry sector, irrigation resources, sustainability, population growth, food security, United Arab Emirates (UAE).

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