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Review of Saudi Arabia Municipal Water Tariff

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Abstract Kingdom of Saudi Arabia (KSA) has a harsh desert environment and faces a chronic water shortage problem. KSA is heavily depending on expensive desalinated water for municipal demand. The country is currently implementing an economically inefficient water tariff system. This research reviews the water tariff system and possible water production cost in Saudi Arabia. Assessment of the current and future financial consequence of the current water tariff system was conducted. Recommendations towards increasing the efficiency of the water tariff system in water demand management tools were developed. The research results showed that the KSA current water tariff system is heavily subsidized by the government (other people pay less than 1% of the water production cost). Given the low cost recovery and the rapidly increasing demand, water subsidy will become a very heavy load on the country's budget. The government subsidy by water production will drastically increase and will reach about 4.47 billion KSA for the year 2020. Comprehensive restructuring of the KSA water tariff system is highly recommended. The water tariff restructuring objective should be increasing the efficiency of water tariff as demand management tool and also using the subsidy burden on Saudi economy. The Kingdom socio-economic characteristics should be highly considered while developing the new tariff system implementation plan.

Keywords: Saudi Arabia, Water Tariff, Water Production Cost, Water Demand Management

1. Introduction

In January 1992, more than five hundred water resources experts and officials attended the International Conference on Water and the Environment (ICWE) in Dublin, Ireland. The conference adopted four principles that governed water resource management for the last two decades in most countries. The fourth principle stated "Water has an economic value as an economic good"[1]. Application of economic principles for water allocation is acceptable and provides tools for efficient development of water services even though water is not supposed to be considered as a commodity for basic domestic needs[2]. In developing countries, water evaluation, study and analysis are needed before deciding if water is an economic or a common good[3]. Water is needed for basic human needs and access to minimum quantity of 20 liters per capita per day should be granted to everybody[4]. Water tariff is applied by local water authorities to increase the economical efficiency of water services. The water tariff system should be developed under consideration of basic human water need, water resources availability, and local socio-economic

conditions. Low water tariff will have substantial financial price to be paid by local authorities, while high tariff may result in significant social and economic consequences. Water tariff is also an effective water demand management tool. A well designed water tariff system will increase domestic water using efficiency. Water tariff system should be developed to be an economic instrument to set awards for water conservation[5]. Increasing water using efficiency is critical to area with limited water resources such as the Kingdom of Saudi Arabia (KSA). KSA is located at south-western Asia between Red Sea and Arabian Gulf with a population of about 27 million people lives over a 2.25 million km² area. Figure 1[6]. It occupies about four fifths of the Arab Peninsula which about 60% are desert lands. The KSA characterized by very hot summer (May to October) and dry cold winter. In the last four decades, KSA population increased from about 7 million to about 27 million with a growth rate of 4% annually[6]. KSA area has crude oil reserves and is currently the largest producer in the globe. The crude oil reserves has induced comprehensive country wide development in all economic sectors for the last four decades. The development came with substantial increase in the standard of living, urbanization, and ever increasing water consumption in the agricultural, municipal and industrial sectors[7]. KSA is under extreme water shortage condition according to the UNESCO water scarcity index[8]. This research reviews water tariff system and possible water production cost in Saudi Arabia. Assessment of the current

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