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## Irrigation Systems in Syria: Can Institutional Reforms Control the Degradation?

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### Abstract

In Syria, where the extent of water scarcity is reflected in the staggering figures of water deficit i.e. 258 m<sup>3</sup> per person per year, paradoxically, agriculture accounts for about 95 % of total consumption of water. Driven by this fact, current research work tries to address the major bottlenecks in ensuring efficient use of water in two distinct agricultural entities i.e. the public river (Euphrates) irrigation system and private wells irrigation system. The two major issues that meddle with the economic use of water in the former system are (1) the fixed water charge per unit area irrelevant to the consumption level and (2) lack of proper monitoring of water use. In private wells region, the main issues are (1) uncontrolled water pumping and (2) illegal well digging. Even though, water intensive crops, wheat and cotton are predominantly cultivated in the research area, the analysis is limited to cotton alone as it requires more water (9887m<sup>3</sup>—ha) compared to wheat (3959 m<sup>3</sup>—ha). The objectives of this study are (i) comparing costs of existing irrigation technologies and determining the water productivity in cotton fields and (ii) finding institutional solutions for the current water problems in both regions. The existing water policy has caused the lowering of groundwater levels in wells region while raising it in river irrigated zones. Most farmers face water crisis in wells irrigated region while spatial location of the farmers determines the degree of water scarcity in the river irrigated system. The central solution can be the pricing policy reforms that link the water charges to level of consumption and seasonal availability. These policy changes are expected to enhance water productivity in cotton irrigated fields by accelerating shifts in technology (e.g. drip irrigation systems) which are capital intensive as well as water management measures which are labour intensive.

**Keywords:** Irrigation systems, water policy, water problems, water productivity