



## A review of Qatar's water resources, consumption and virtual water trade

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### ABSTRACT

Qatar is an arid land with very scarce natural freshwater resources. Its groundwater resources are limited and are being heavily depleted by inefficient irrigation methods and the growing population. As a result, Qatar relies primarily on desalination of seawater. Accurate assessment of water resources, consumption levels and virtual water trade is the first step in formulating an effective water resources management policy. This paper, hence, reviews the renewable and non-renewable water resources and the disaggregated consumption trends as well virtual water trade in Qatar. The total groundwater produced internally is 56 Mm<sup>3</sup>/year and its consumption rate is 250 Mm<sup>3</sup>/year which is mainly dominated by farms. The agricultural sector consumes 91% of all renewable water resources in Qatar. The total desalination capacity is 1.4 Mm<sup>3</sup>/d which is primarily from thermal desalination plants. Water consumption rate is 200 m<sup>3</sup>/capita/year. Regarding virtual water trade, it was found that Qatar is a net virtual water importer and imports an average of 1.35 billion m<sup>3</sup>/year of virtual water. The per capita water footprint is 1,554 m<sup>3</sup>/capita/year. We recommend that the water conservation efforts in Qatar should follow an integrated approach taking into account supply as well as demand side management.

*Keywords:* Water resources; Desalination; Water withdrawals; Virtual water; Qatar

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