

We are running out of water!!!

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Shocking facts about water security in our region

- The Arab region has access to merely 1% of the world's total water resources.
- Saudi Arabia is among the world's highest per capita water consumption.
- More than 80% of the total water available is used by the agricultural sector.
- 50% of Saudi Arabia drinking water comes from high-cost desalination plants

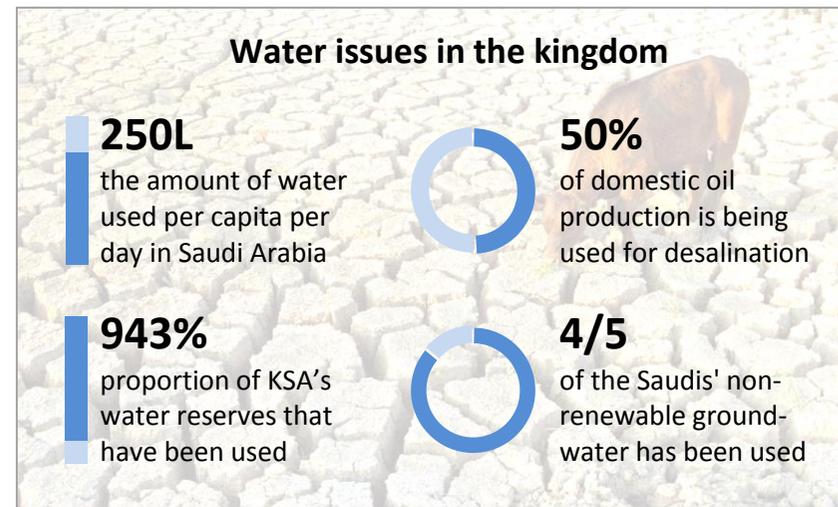
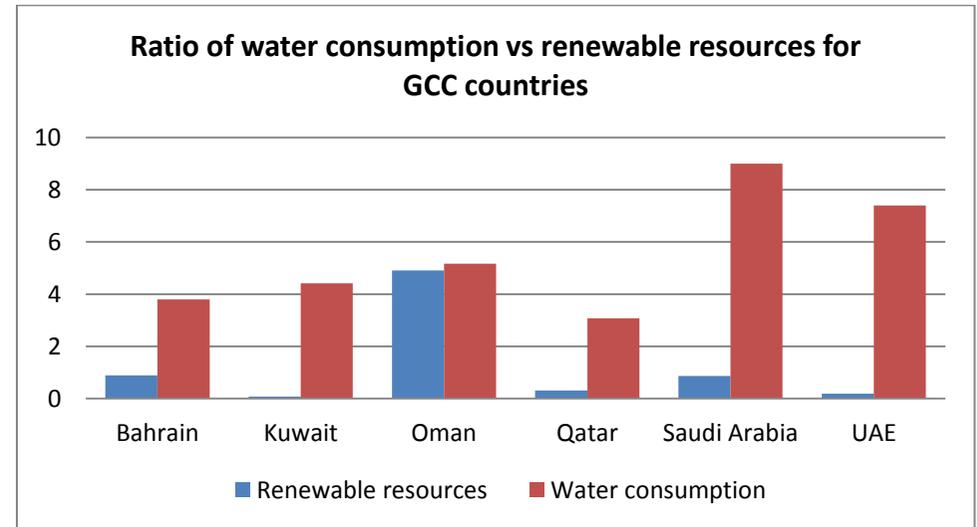
We are living under extreme water shortage conditions

Kingdom of Saudi Arabia (KSA) is located in one of the world's driest region with an average rainfall of less than 100 mm per year. With a land dominated by desert with no permanent natural rivers or lakes, the kingdom is facing an immense challenge to meet water demand for its fast growing population. Today, the desalination plants cover about 50% of KSA drinking water demand with more than 80% of the total water available used by the agricultural sector. The mining of non-renewable groundwater covers 40% of the supply and only 10% comes from surface water in the mountainous southwest of the country.

Water shortage vs high consumption

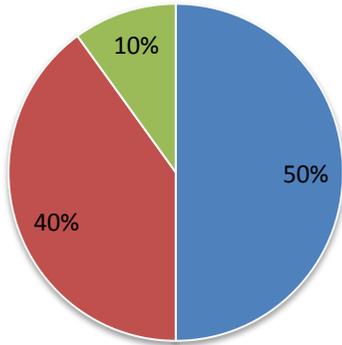
Yet the Kingdom is among the highest per capita water consumption rates in the world (250 Liters/day), which results in huge gaps between renewable supply and demand: **Saudi Arabia uses 943% of its available water reserves.** There are 31 high-cost desalination plants operated by the government to cover half of the water demand. On the other side, four-

fifths of the Saudis' non-renewable groundwater (water beneath the Saudi desert) is now gone, because of the intensive modern farming that has pumped out up to 21 cubic kilometers annually to grow crops and feed livestock. But, none of it is replaced by the rains, because there effectively are none.



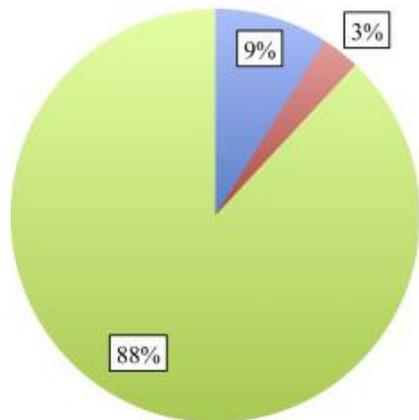
Sources of water in KSA

■ Desalination ■ Ground water ■ Surface water



Water consumption in KSA

■ Municipal
■ Industrial
■ Agricultural



Over-dependence on desalination plant

The desalination plant is very expensive to finance, operate, and maintain. Moreover, the process that produce millions of gallons of water each day, then piping it hundreds of kilometers to Riyadh and other cities requires large amounts of energy. On daily basis, up to 1.5 million barrels of oil are required to fuel all desalination plants spread across 17 locations along Saudi Arabia’s coastline. It has been estimated that about half of domestic oil production in the Kingdom is now used for desalination.

The government’s new direction

For decades, the citizens did not pay much for water since it was heavily subsidized by the government; a condition that made people not aware about the kingdom’s water shortage problem. So it is unsurprising when the government announced a drastic increase in water tariff, many Saudis voiced their frustration and asked the government to revisit its decision.

Sustainable ways to ease the water crisis

Apart from great efforts to make the desalination process a more effective and efficient business, KSA is starting to implement water recycling and reuse programs as alternative strategies to conserve water. By using treated water for non-drinking purposes, such as agriculture and maintaining green spaces, the kingdom not only conserves water but indeed save energy by reducing the cost of potable water production.

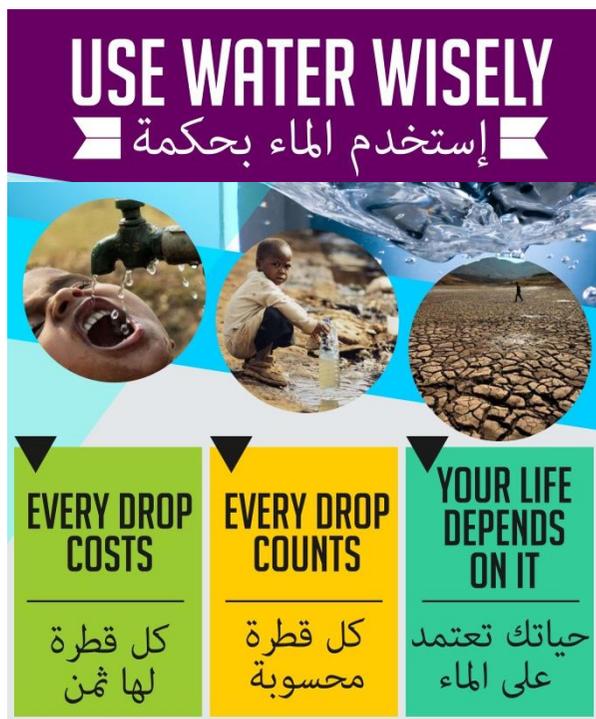
In order to curb the water demand from the agricultural sector, the government has banned growing of water-intensive crops and made arrangement for outsourcing food production to other countries.

Start from ourselves

Yes, we are the main actors; conserving water should start from ourselves. Moreover, KFUPM as an educational institution should be the leading

example to solve the immense challenge of our region water crisis. There are a lot of things we can do as an individual to save water:

1. First, bear in mind, water is not cheap anymore; today's wastage will be tomorrow's shortage
2. Open the tap only when you are going to use the water, for example: don't keep the tap open while you brush your teeth
3. Report water leak as soon as possible, never underestimate a dripping tap, it can waste about 5,500 liters of water a year.
4. Stop food waste; take only what you can finish. It takes a lot of water to produce our food.



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