



A girl carries water as she walks on a pipe in a slum area of Mumbai. In developing countries, unsafe water causes 80% of all illness. Danish Siddiqui / Reuters

Water scarcity in Mena region is a threat we just cannot ignore

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"You never miss the water 'til the well runs dry" is an old idiom that is becoming a harsh reality for the Middle East and North Africa region and globally. Water scarcity is now this century's imminent greatest problem, a clear and present danger.

This is no surprise considering 85 per cent of the world's population lives in the driest half of the planet. The United Nations estimates that, already, 6 to 8 million people die annually from the consequences of disasters and water-related diseases, with a child dying from a water-related illness every 21 seconds.

In developing countries, unsafe water causes 80 per cent of all illness and disease and kills more people every year than all forms of violence, including war. Things are set to get worse. Water availability is expected to decrease in most regions while, alone, future global agricultural water consumption is estimated to increase by 19 per cent by 2050.

Water availability and scarcity is not only costly in terms of human and other animals' life, it is also a growing economic challenge. The World Bank estimates the cost of adapting to the impacts of a 2°C rise in global average temperature could range from a conservative US\$70 billion to \$100bn per year between 2020 and 2050 and that between \$13.7bn and \$19.2bn of that amount would be related exclusively to water scarcity issues.

Nowhere is this problem felt more intensely than in the Mena region, one of the most water-scarce regions of the world. Although home to 6.3 per cent of the world's population (and growing), the region has access to only 1.4 per cent of the world's renewable

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fresh water (and declining). To make matters worse, the region currently exploits more than 75 per cent of its available renewable water resources because of its burgeoning population, increased urbanisation and rapid economic growth.

Global warming will compound the severity of water scarcity. Competition for water resources is becoming more intense, threatening to develop into "water wars". Better ecosystem and water management systems, improved water use efficiency and pricing, and investment in water infrastructure are all part of the answer. However for the Mena countries that have access to sea water, desalination is a critical component of the solution.

Indeed, in the richer countries of the Gulf water scarcity is mostly dealt with through desalination plants. However, current desalination solutions are costly, energy intensive and lead to environmental degradation. This is in large part because of the technology's reliance on fossil fuels.

This will only get worse with time as energy costs rise with competition for limited fossil fuel reserves and as hydrocarbons are likely in the future to be charged the additional costs of mandatory CO2 sequestration. There is a need to develop less polluting and more energy efficient desalination plants.

The answer is to wed [renewable energy](#) and desalination. Saudi Arabia has taken the lead with its announcement to develop and use solar-powered desalination plants. This is a wise strategic choice.

The World Bank commissioned multiple intensive background studies on environment and desalination to release its "Renewable Energy Desalination: An Emerging Solution to Close Mena's Water Gap" report. The report found that coupling renewable energy sources with desalination could provide win-win solution the region's water woes.

While marvelling at Mena's annual combined potential of wind power, biomass, geothermal and hydropower that equal about 830 trillion watt-hours, the report also pointed out the benefit of clean energy desalination. It was estimated that adoption of concentrating solar power (CSP) desalination would bring considerable environmental advantages.

An increased share of CSP-reverse osmosis desalination allied with the more efficient CSP thermal desalination would reduce annual brine production by nearly half (from 240 cubic kilometres to 140 cubic kilometres) as well as greatly reduce CO2 emissions. Switching to renewables for electricity needs overall has large benefits. Increasing renewable energy could cut Mena's annual CO2 emissions to 265 million tonnes as opposed to the 1,500 million tonnes by 2050 estimated to be produced with continued use of fossil fuels.

Renewables-based desalination should become a clear policy priority for addressing water scarcity in the Mena region. The Clean Energy Business Council is engaged in promoting the policies and technologies that can enable a smarter and cleaner energy infrastructure for the Mena region based on low-carbon renewables and energy efficiency. Our goal is to help create an energy ecosystem that is resource- efficient and does not contribute to climate change, while addressing not only the region's severe water scarcity but the related complications associated with polluting energy technologies.

Nasser Saidi is chairman of the Clean Energy Business Council

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