Rebuilding Water Management

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The number of people living in water-stressed countries will increase from 700 million today to more than 3 billion by 2025 – 35% of the predicted global population.

How can the protection and management of water be dramatically improved?

Key Points
• If we manage water resources badly, we will be unable to meet our needs; if we manage water resources well on the other hand, the interconnected challenges of population growth, climate change, urbanization and economic development can be met
• Overcoming the water crisis requires cooperation at the international level and implementation at the national, regional and watershed levels
• The precise mix of policy and technology for each nation, region and watershed will differ; there is no one-size-fits-all approach but the exchange of best practice is essential
• The technological fixes to the water problem are neither particularly complicated nor expensive; but awareness of the nature of the problem needs to be improved, and the political will needs to be found to overcome the different interest groups involved
• While the implementation strategies may differ, the principles of good water management are common: raise awareness, reduce leakages, maximize recycling, price water adequately and redirect the implicit and explicit subsidies to water demand to measures that reduce water demand

Synopsis
The water crisis is already with us. In Mongolia, one-quarter of rivers are already dry and sandstorms are increasing. Without good management, population growth, climate change, urbanization, change in diet and economic development will make the crisis both worse and more global in its impacts.

The water challenge is deeply embedded in current economic and trade structures that encourage water waste or trade in “virtual water” from relatively water-scarce countries to water-rich ones. The water challenge is also closely linked to the challenge of supplying clean and efficient energy. Large-scale desalinization processes would require extraordinary use of electricity and might contribute to carbon emissions and, therefore, climate change if that electricity were generated from coal, gas or oil. Meanwhile, achieving the goal of 10-20% of renewables in the energy mix could add to pressure on water if the processes that generate the energy – such as biofuels – require large water inputs.

Public understanding remains limited. The volume of water consumed on a per capita basis is generally underestimated, particularly in the developed world. Personal hygiene and drinking account for only 7% of water consumption – a much higher proportion is embedded in what we eat. Raising awareness is key to achieving support for measures such as water pricing. Most governments do not have a coherent water policy, with responsibilities split between different levels and departments. Yet, water is central to development; it should be at the core of planning.

But the water challenge is not intractable. At the global level, there needs to be much better exchange of information and best practices. There is already a UN Convention on Climate Change and on Biodiversity – should there be a UN Convention on Water? Should there be a universally binding water code or a universally accepted water board? Although trans-border watersheds could lead to conflict, the mutuality of interest also offers opportunities for collaboration.

Most measures required at the local level are common to all, highly practical, and neither new, nor expensive. In South Africa, leaks mean that 30-40% of the water supply never makes it to the consumer. In urban areas, waste water should be recycled. Reducing pollution could increase the supply of clean water for agricultural and other purposes. No- or low-till agriculture could reduce demand, as could genetically modified crops. Far greater public-private and public-public collaboration is needed. Other solutions depend on local circumstances. Work has been done to ascertain the cost curves of different management tools in different watersheds. The key now is implementation.

Water pricing – considering water as an economic good as well as an environmental and social good – is essential to provide the right incentives to save water and use it wisely. Currently, the incentives often run the other way. In India, for example, farmers are given free water and electricity with which to pump water from the water table. As a result, in Punjab, the water table has gone down from 4 to 400 metres – if this process continues, the Punjab will be desert in 20-30 years. In Gujarat in contrast, the construction of a large (unpopular) dam means that farmers have stopped using wells, leading the water table to rise and electricity demand to fall. Water pricing does not have to lead to political unrest if the implicit subsidies to water consumption can be redirected in positive ways – instead of being given free water, farmers could be given free facilities for drip irrigation, which can reduce water needs by five-sixths.

Session Panellists
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Michael Mack, Chief Executive Officer, Syngenta International, Switzerland
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Disclosures
This summary was prepared by Charles Emmerson. The views expressed are those of certain participants in the discussion and do not necessarily reflect the views of all participants or of the World Economic Forum.

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Saturday 30 January

Keywords: water, environment, food, climate change, energy, sustainability

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