From The CEO

Food and Water Security in the Middle East to 2030: An Overview of FDI's Landmark Study

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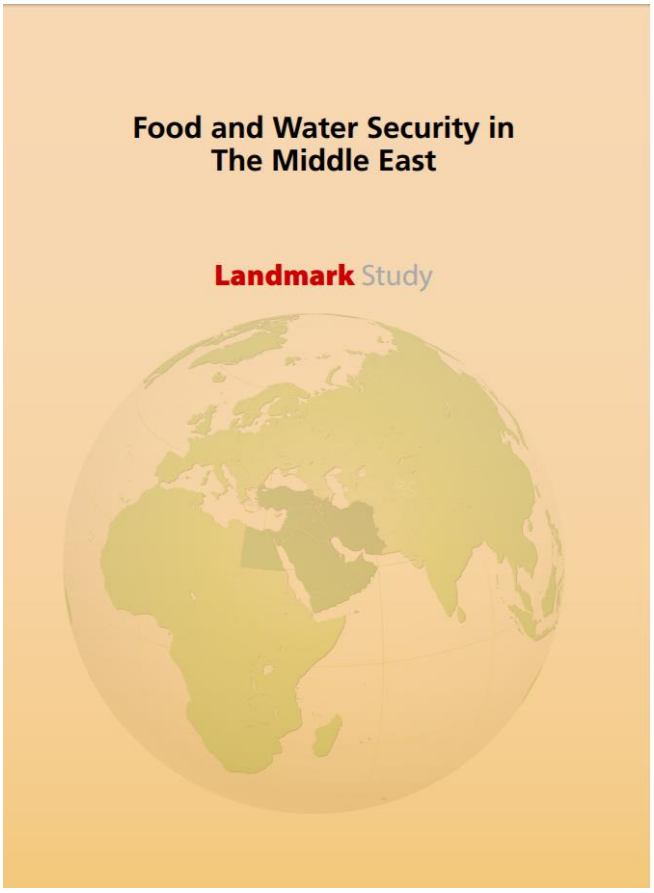

Next week, FDI will publish a Landmark Study that examines the food and water security situation of the Middle East to 2030.

This is the second of a series of studies, the first focussed on the food and water security situation in Southern Africa. A further study will be published later this year that examines the food and water security situation of the Indian sub-continent.

This paper is a summary of the major conclusions reached in the study. It finds that food and water demand is likely to increase as a result of demographic, dietary and government-sponsored subsidy trends. It also suggests that while demand is expected to rise, innovative water supply solutions and an emerging trend that encourages conservation and waste minimisation could ensure that the region avoids extreme food and water insecurity.

Analysis

While increased food and water insecurity very rarely causes conflict on its own, increased food and water insecurity within the Middle East could contribute to rising inter- and intra-state tensions. If these tensions are not addressed, it is possible that conflict will ensue. It is, therefore, vital that the region monitors and manages the demand and supply of its food and water.

Demand

Three factors will drive food and water demand in the Middle East to 2030. First, demographic changes, including population growth, increasing life expectancy and migration, will increase food and water demand. Second, changing dietary habits across the region will also alter the type of food in demand throughout the region and, as the population increasingly adopts the "Western diet", this could have implications for health and wellbeing. Third, many Middle Eastern states subsidise food and water. These subsidies artificially inflate demand for food and water resources as there is little incentive to conserve supplies or minimise waste. These three factors are expected to contribute to increased demand for food and water resources in the Middle East by 2030.

The Middle East is expected to undergo considerable demographic change by 2030. Over this period the population is projected to more than double from 226.6 million in 2015 to 491.6 million in 2030. As fertility rates are high throughout the region, but especially in Iraq, Yemen and Jordan, the region's population is likely to continue to expand beyond 2030. An increase in average life expectancy over the past 50 years has also contributed to the increase in the region's population. Population growth and longer average life expectancy will be the main driver behind increased demand for food and water in the region.

Within the Middle East, the food and water security of individual countries will also be influenced by transboundary migration between regional and extra-regional countries. Long-term migration patterns are difficult to predict due to the volatility of the push and pull factors that motivate individuals to migrate. Differences in economic opportunity, climatic conditions, political stability and governance between countries currently influence migration decisions. These differences will persist in the region and will continue to shape regional migration trends in 2030.

Dietary habits in the Middle East have also changed over the past 50 years, a trend that is likely to continue to 2030. Over the past 50 years, the people of the region have more readily adopted the "Western diet", which is characterised by increased consumption of food that is high in energy, fat, sugar and salt. This nutrition transition is also likely to alter the type of food in demand throughout the region and, as the region's food supply is highly dependent on international trade, also has the potential to affect regional trade patterns.

Many Middle Eastern countries subsidise energy, food and water. These subsidies are maintained largely by revenue from the export of oil and gas. Partly due to unsustainable water subsidies, per capita water consumption in many Middle Eastern countries exceeds the world average. Since 2014, however, state oil and gas revenues have declined, fostering a climate of economic change in the region. The region must consider subsidy reform that reflects the realities and costs of providing water which, if current trends continue, is likely to become increasingly scarce. As previous efforts at subsidy reform have been politically contentious, the countries of the region need to proceed carefully.

Supply

Present levels of food production in the Middle East are not sufficient to meet regional demand. By 2030, due to increased demand, lower water availability for agriculture and the effects of climate change, regional food production is likely to be even more constrained.

The region will become more dependent on food imports from outside the Middle East. This dependence makes the region vulnerable to international trade disruption, particularly when the price of food commodities increases rapidly, as occurred in 2007-08 and 2010-11. As Middle Eastern countries are reliant on a few maritime trade routes, regional food security could be weakened, particularly in times of conflict.

As many Middle Eastern countries receive the majority of their revenue from the export of hydrocarbons, they are highly exposed to fluctuations in the international oil price. Trade-based food security is, therefore, linked to the oil price. When oil prices are high, many countries in the region are in a better position to import food. If oil prices decline, and remain depressed, however, the fiscal position of these countries could come under pressure. Economic diversification will be necessary if the region is to increase its food security.

Middle Eastern interests have also sought to invest in foreign agricultural industries. By investing in overseas agricultural companies and farmland, Middle Eastern companies hope to be in a position to more readily import food for domestic consumption. An increase in the level of Middle Eastern funds buying land overseas has fuelled claims of exploitative “land grabbing”. On a global level, however, the amount of farmland owned by Middle Eastern interests remains relatively low. Nonetheless, investment in foreign agricultural interests has led to growing animosity towards foreign investment and land ownership in many parts of the world. If this animosity continues to grow it could threaten the Middle East’s foreign investment-based food production model.

Climate change projections suggest that the Middle East will become hotter and drier, placing increased pressure on climate-dependent water sources. Surface water sources, including rivers, lakes and dams, are unlikely to satisfy water demand. Groundwater sources are already overdrawn and could be largely depleted by 2030. Unconventional water sources, such as desalination plants and wastewater, will become important water sources for many countries in the region.

A heavy reliance on desalination plants, however, could pose risks to regional water security. Desalination plants are required to operate in accordance with environmental safeguards that limit the amount of hypersaline brine returned to water sources. If these safeguards are breached,

desalination plants are shut down until environmental conditions return to normal. The region will experience a reduction in the water supply in the event of a desalination plant shutting down. To ensure water security, therefore, desalination plants will need to operate in tandem with other technologies and water sources. Furthermore, as the region's water supply cannot continue to rise indefinitely, efforts will also need to be made to reduce and manage water demand.

Conclusion

If Middle Eastern countries succeed in reducing the amount of food and water waste, perhaps through subsidy reform, and increase the amount of water available where practicable, through desalination and wastewater recycling, the region is less likely to experience severe resource stress. As water consumption across the region is generally high, there is scope to reduce per capita water demand and thereby lower the need to increase supply.

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Published by Future Directions International Pty Ltd.
80 Birdwood Parade, Dalkeith WA 6009, Australia.
Tel: +61 8 9389 9831 Fax: +61 8 9389 8803
Web: www.futuredirections.org.au