The Dubai Initiative
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Applying For-Profit Principles in Water Management and Agricultural Policy in the Middle East and North Africa

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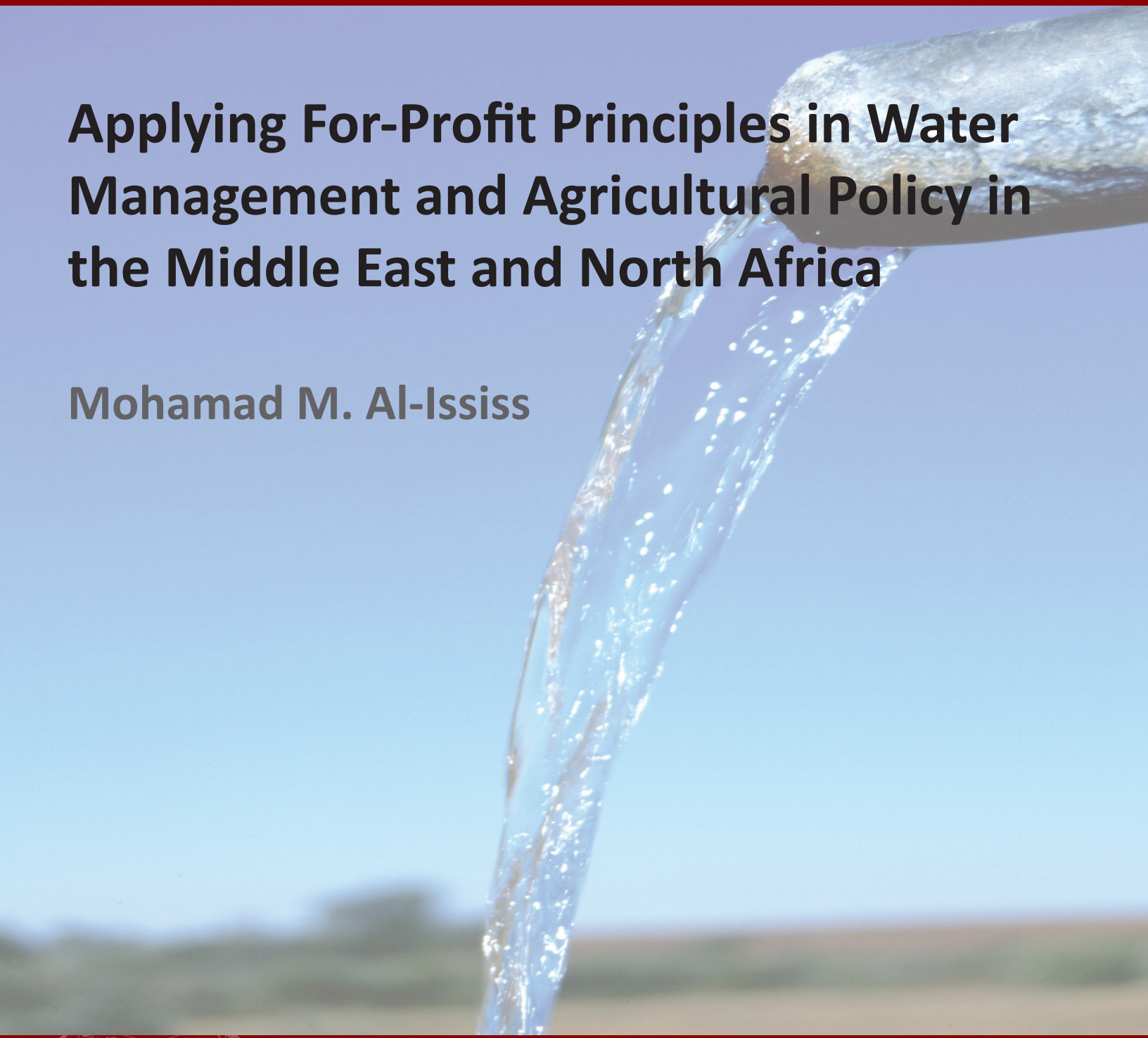

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Dubai Initiative – Policy Brief

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Through its partnerships with the government, the agricultural sector in the MENA has long engaged in dubious accounting practices to raise its reported profits through artificially suppressing its costs. This has led to the current unsustainable exploitation of the scarce water resources in the region.

That there is an acute water shortage in the MENA region is not in question. The per capita water share in the MENA is projected to be a mere fourteenth percent of the world average by the year 2025[1]. By that year, if current trends continue, Jordan's per capita water supply will fall from the current 200 cubic meters per person to only 91 cubic meters[2]. This is mere 9% of where experts define water poor countries, putting Jordan in the category of having an absolute water shortage[3]. The problem results from the region's shrinking water supply and exceedingly high and growing water demand, mainly in the agricultural sector.

Many of the MENA countries chose to follow the Import Substitution Industrialization Strategy (ISI) which seeks to artificially create conditions that will foster the growth of industries that compete with the imported goods. The agricultural sector played a vital role in the ISI policies through supplying cheap food for urban workers to support the growth of domestic industry. Furthermore, in the past three decades the MENA experienced some of the highest population growth levels in the world, along with a rapid income growth. These demographic and economic forces intensified the demand for food. In an attempt to deal with this exploding food security dilemma while providing cheap food for the ISI strategy, policymakers heavily subsidized the agricultural sector and set price ceilings for main agricultural crops.

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Water subsidies are the broadest and deepest form of subsidies used. The cost of water for farmers was virtually zero. The pricing of irrigation water in many countries does not even cover the operations and maintenance costs.[4] Hence, the true value of water, the most vital input in agriculture, has not been part of agricultural balance sheets.

As expected, water subsidies did not provide the right incentive for farmers to achieve efficiency in water consumption. With the exception of Israel and Jordan, MENA farmers continue to use inefficient irrigation methods such as flood irrigation as opposed to drip irrigation. It allowed farmers to engage in agricultural activities that would have otherwise been unprofitable.

In addition, the government imposed price ceilings through its monopsony power over traditional crops such as wheat. These crops had real native comparative advantage because of their low water consumption. However, the imposed price controls on these traditional crops led farmers to shift to horticultural crops that require increased levels of water irrigation. For example, farmers in the Jordan valley shifted to crops such as fruits, citrus and bananas. Hence, the combined effects of water subsidies and governmental price controls on low water consuming crops, encouraged this transfer towards less competitive crops that have no price controls but require higher water input.

This unofficial partnership between the government and agricultural sector prevented this sector from being held accountable for its water consumption. It led to the contradictory fact that agriculture consumes the largest portion of the re-

1 Office of King Hussein I website, URL: http://www.kinghussein.gov.jo
2 Office of King Hussein I website.
3 Office of King Hussein I website.
4 Alan Richards and John Waterbury, Political Economy of the Middle East, Westview, New York, 1996, pg 163.

gion's most valuable and endangered resource yet contributes the least to its GNP. Agriculture consumes from 50% to 90% of the water in the MENA countries, with an average of 85% for the MENA countries excluding the Gulf region[5]. Nonetheless, agriculture constitutes less than 5% of GNP in Israel and Turkey, and less than 10% in Jordan and Lebanon[6]. It contributes about 20% of GNP in Egypt and Iraq and slightly higher in Syria and the West Bank[7]. Agriculture has a very low rate of return on its water input.

Adequate water pricing reflecting the actual value of water will render several agricultural activities no longer profitable. Thus, water usage will shift to other industrial and service sectors with higher rates of return on water input. In Morocco, for instance, the value-added of using one cubic meter of water in industry is 25 dollars compared to 15 cents in agriculture[8]. These shifts should be coupled with adequate safety nets and retraining programs for farmers who will be hit hard by this necessary correction measure. Other challenges resulting from this adjustment potentially include a new wave of rural-to-urban migration caused by the decline of the agricultural sector. Lifting the price ceilings from the traditional crops, along with adequate water pricing, will bring farmers back to crops that have always had a comparative advantage because of their low water input requirements.

The current allocation of water in the MENA is unsustainable, as it uses more water resources than are possibly renewable. Yet, with increased efficient water management programs that seek to reallocate water towards sectors with higher returns, the looming crisis can be averted. There is an urgent need to create an adequate market for trading water in the MENA similar to those markets trading other scarce natural resources like oil and gas. It might be advisable to allocate water to more productive industries that could lead to rapid economic development, and hence permit the use of more expensive solutions such as desalination.

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Water allocation and consumption in the MENA is not sustainable. Water is being depleted at a faster rate than it is being renewed. Opening up of the MENA economies and abandoning the "war mentality" that prevented the region from depending on food imports will achieve the goals of food security without risking its future by depleting its water. It is no longer feasible to keep the real losses incurred in the agricultural activities as a result of using the valuable water off the national and regional balance sheets.

5 Richards and Waterbury, pg 153.
6 The CIA World Factbook, URL: http://www.cia.gov/cia/publications/factbook/index.html
7 The World Bank website, URL: http://www.worldbank.org
8 Richards and Waterbury, pg 160.

Bibliography

Alan Richards and John Waterbury, *Political Economy of the Middle East*, Westview, New York, 1996.

Bazza M. and Ahmad M., "A Comparative Assessment of Links between Irrigation Water Pricing and Irrigation Performance in the Near East", Food and Agriculture Organization of the United Nations, June 2002.

Environmental Resource Management Consultants, *Jordan Data Report #3: Data on the Supply of Water,* Harvard Middle East Water Project, Amman, February 1994.

Environmental Resource Management Consultants, *Jordan Data Report #4: National Water Policies*, Harvard Middle East Water Project, Amman, March 1994.

Fisher Franklin, *An Economic Framework For Water Negotiations and Management*, Massachusetts Institute of Technology, 1993.

Friedrich Ebert Stifung, *Water Pollution in Jordan: Causes and Effects*, Friedrich Ebert Stifung, Amman, 1991.

Garber Andra and Salameh Elias, *Jordan's Water Resources And Their Future Potential,* Friedrich Ebert Stifung, Amman, 1992.

Harvard Middle East Water Project , *Questions and Answers on the Harvard Project: An Economic Framework for Water Negotiations and Management*, 1993.

Palestine Consultant Group, *An Update Study of Water Supply and Demand in Palestine*, Harvard Middle East Water Project, Septmeber1995.

PRIDE: Project in Development and the Environment, *A Water Management Study for Jordan*, 1992.

Salameh Elias and Ghezawi Ali, *Jordan's Water Resources, Uses and Future Demands*, Amman, 1993.

Salameh Elias and Bannayan Helen, *Water Resources of Jordan: Present Status and Future Potentials*, Friedrich Ebert Stifung, Amman, 1993.

Shuval Hillel, *Proposals for Cooperation in the Management of Transboundry Water Resources Shared by Israel and Her Neighbors*, The Hebrew University of Jerusalem,The Hebrew University of Jerusalem, Jerusalem, 1993.

The World Bank website, URL: http://www.worldbank.org

The Office of King Hussein I website, URL: http://www.kinghussein.gov.jo

Zarour Hisham and Isaac Jad, *Nature's Apportionment and the Open Market: A Promising Solution to the Arab-Israeli Water Conflict*, West Bank, 1993.

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The Dubai Initiative is a joint venture between the Dubai School of Government and the Harvard Kennedy School supporting the establishment of DSG as an academic, research and outreach institution in public policy, administration and management for the Middle East. The primary objective of the Initiative is to bridge the expertise and resources of HKS with DSG and enable the exchange of students, scholars, knowledge and resources between the two institutions in the areas of governance, political science, economics, energy, security, gender and foreign relations in the Middle East.

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