

less and to be compensated financially, according to the regulations. However, the recent legal establishment of water abstraction fees has minimized the potential rent between water producers, thus limiting the effectiveness of the water market as an instrument for improved efficiency of water use in the country.

The Middle East region

Many of the Middle East and North African countries face an environmental crisis, much of it as a result of water scarcity and the existing and potential pollution of their water resources. It is estimated that the investment needed to deal with and solve the problem could reach US\$70–80 000 million in the period 1995–2005 (World Bank).

The hydro-geological conditions are constantly deteriorating. As extraction from ground- and surface-water resources increases, so do the problems associated with low water levels and falling quality. Inadequate human and industrial waste discharges as well as inappropriate wastewater reuse programmes lead to higher concentrations of chemicals and organic contaminants.

Adopting intensive WDM strategies will require political courage, but unless this happens the region will face serious water crises.

About the author

Saul Arlosoroff is the Chairman of Israel Water Engineers' Association.

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The following websites are good sources for finding out more about water and sanitation in the Middle East.

- **IES Water Database Bibliography**
MEWIN (Middle East Water Information Network) is a free web-accessible bibliography of 10 000 catalogued entries, encompassing hydrology, geography, science and technology, economics, population, politics, law, management and strategic affairs.
<http://water1.geol.upenn.edu/index.html>
- **Columbia University's Middle East Studies Internet Resources**
An on-going compilation of electronic bibliographic resources and research materials on the Middle East and North Africa, organized by region, country and subject. The scope of the collection is research-oriented, although it provides access to broader online resources.
www.columbia.edu/cu/lweb/indiv/mideast/cuvm/water.html
- **Water and conflict in the Middle East**
The focus of the Middle Eastern page of the Waternet site is on the Israeli–Palestinian conflict and the issue of water resources in the Jordan River basin. Updates are published regularly in the form of articles, policy documents, links to web sites related to the peace process and background information about the water conflict.
<http://waternet.rug.ac.be/ME.htm>
- **Arab Water World (AWW) Magazine**
AWW is targeted at the public and private sectors, governmental institutions, engineering consultants, contractors and organizations whose interest lies in developing and maintaining safe and healthy water supplies to the Gulf area, the Middle East and Africa. An online sample version (May/June 2003) can be downloaded.
www.cph.com.lb/aww.htm
- **Sanitation Connection – Middle East**
This is the Middle East regional section of Sanitation Connection, an information portal on water and sanitation issues.
www.sanicon.net/titles/topicintro.php?topicid=30
- **The Inter-Islamic Network on Water Resources Development and Management (INWRDAM)**
INWRDAM is an inter-governmental, autonomous organization operating under the Organization of the Islamic Conference. Services include newsletters, publications lists, training activities and conference papers.
www.nic.gov.jo/inwrdam/index.html
- **The World Bank Group Urban Water Supply and Sanitation**
Part of the Middle East and North Africa (MENA) World Bank site, this includes project listings, water data, publications in English and Arabic available as downloadable documents, policies and strategies and related links.
<http://lnweb18.worldbank.org/mna/mena.nsf/f34b224d37365b3f852567ee0068bd93/c9e83517ae931faf8525694400051ddc?OpenDocument>
- **'Urban water and sanitation in the Middle East and North Africa: The way forward' (2000) Saghir, J., M.Schiffler and M.Woldu**
This study considers the critical issues for managing urban water supply and sanitation in countries in the Middle East and North Africa. Available in Arabic
[http://wbln0018.worldbank.org/mna/mena.nsf/f34b224d37365b3f852567ee0068bd93/2421f467c2c0262685256951006660e9/\\$FILE/way-arabic.pdf](http://wbln0018.worldbank.org/mna/mena.nsf/f34b224d37365b3f852567ee0068bd93/2421f467c2c0262685256951006660e9/$FILE/way-arabic.pdf) and in English
[http://wbln0018.worldbank.org/mna/mena.nsf/f34b224d37365b3f852567ee0068bd93/2421f467c2c0262685256951006660e9/\\$FILE/way-english.pdf](http://wbln0018.worldbank.org/mna/mena.nsf/f34b224d37365b3f852567ee0068bd93/2421f467c2c0262685256951006660e9/$FILE/way-english.pdf)
- **Interwater: Your gateway to water and sanitation organisations**
Descriptions of relevant organizations in the Middle East and North Africa, including their aims and contact details.
www.irc.nl/interwater/list.php?action=region&xt=MEA

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