

## Making the Most of Scarcity: Accountability for Better Water Management in the Middle East and North Africa

Most of the Middle East and North Africa (MENA) cannot meet current water demand. Many countries face full-blown crises, and the situation is likely to get even worse. Estimates show that per capita water availability will be cut in half by 2050, with serious consequences for aquifers and natural hydrological systems. Demand for water supplies and irrigation services will change as economies grow and populations increase, with an attendant need to address industrial and urban pollution. Some 60 percent of the region's water flows across international borders, further complicating the resource management challenge. Rainfall patterns are predicted to shift as a result of climate change.

The social, economic, and budgetary consequences of these challenges are enormous. The supply of drinking water could become more erratic, necessitating greater reliance on expensive desalination technologies, and increasing drought would require emergency supplies brought by tanker or barge. Service outages would put stress on expensive network and distribution infrastructure. Unreliable sources of irrigation water would depress farmer incomes, economic and physical dislocation would increase with the depletion of aquifers and unreliability of supplies, and local conflicts could intensify. All of this would have short- and long-term effects on economic growth and poverty, exacerbate social tensions within and between communities, and put increasing pressure on public budgets.

### The Historical Development of the MENA Region's Water Management

In most MENA countries, water policy has undergone three phases.

- The first phase evolved over millennia, as societies across the region grew while adapting to the variability and scarcity of water, developing elaborate institutions and complex structures that spawned some of the world's oldest and most accomplished civilizations.
- The second phase emerged in the twentieth century, as governments increasingly focused on securing supply and expanding services through huge investment programs as their populations and economies grew. The region's rivers are the most heavily dammed in the world in relation to the freshwater available, water supply and sanitation services are relatively widespread, and irrigation networks are extensive. Low-cost drilling technologies make it possible to tap into aquifers on a massive scale; as a consequence, the MENA region uses more water than it receives each year.
- The third phase is just starting, as governments and the public realize that supplies are reaching their physical and financial limits and that a switch toward comprehensive water management is imperative.

This note highlights important information from the 2007 World Bank MENA Development Report *Making the Most of Scarcity: Accountability for Water Management in the Middle East and North Africa*, the fifth in a series of World Bank reports on the MENA region. Readers may download the complete document from [www.worldbank.org/water](http://www.worldbank.org/water).



This new approach emphasizes the entire water cycle rather than its separate components. It uses economic instruments to allocate water according to principles of economic efficiency and systems that have built-in flexibility to manage variations in supply and demand. Technical and policy changes to the water sector are also needed: planning that integrates water quality and quantity and considers the entire water system; demand management; tariff reform for water supply, sanitation, and irrigation; strengthening of government agencies; decentralizing responsibility for delivering water services to financially autonomous utilities; and stronger enforcement of environmental regulations.

### Impediments to Managing According to the Water Cycle

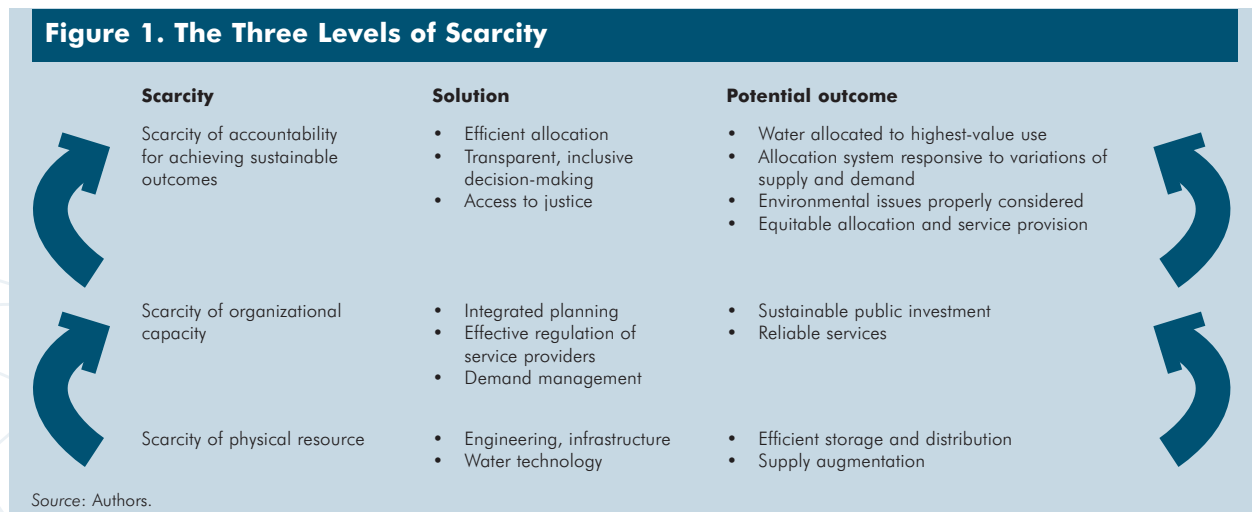
The MENA region is home to some of the world’s best hydraulic engineers. They manage sophisticated irrigation and drainage systems and have spearheaded advances in desalination technology. Cities in the region have shifted from direct provision of water supply services to regulation of services provided by independent or privately owned utilities. Farmers have begun managing irrigation infrastructure and water allocations. Governments have established agencies to plan and manage water at the level of the river basin and ministries that manage water resources, staffing them with well-trained and dedicated professionals.

Yet these efforts have not yet led to the improvements in water outcomes that were anticipated, and resource management remains a problem in most MENA countries. Along with water resource scarcity, there is a scarcity of organizational capacity to get water to the right place at the right time and a scarcity of accountability for achieving sustainable outcomes (see figure below).

Water is still allocated to low-value uses even as higher-value needs remain unmet. Service outages for water supply services are common, even in years of normal rainfall. People and economies remain vulnerable to droughts and floods, over-extraction of groundwater is undermining national assets, and environmental problems related to water impose heavy costs. Despite the region’s huge investments in piped water supply, many countries experience poor public health outcomes compared to other countries of their income level. Public spending on water could be far more efficient. Many countries subsidize services for which consumers are able and willing to pay, reducing incentives to improve services. In addition, many countries often invest in large water resource management and resource mobilization schemes that do not bring the expected economic returns or for which cheaper alternatives exist.

Most countries have not yet tackled the most important reforms because they have proved politically untouchable. Powerful groups benefit from subsidized services or existing allocations of water,

**Figure 1. The Three Levels of Scarcity**



and those who would benefit from reforms—farmers, environmentalists, and poor households on the edges of cities—have not been able to form effective lobby groups. The strain on public finance has not always been apparent, as the deferral of maintenance on infrastructure, the fragmentation of water districts into several subsectors, and nontransparent budgeting procedures have all masked the true costs of failing to reform. This situation is exacerbated by the fact that the benefits of reform tend to accrue over time, whereas the costs are immediate. The absence of major economic or natural resource crises, such as fiscal crises, droughts, or floods, has inhibited the development of sufficient public pressure to face the social, economic, and political difficulties that reform entails.

Additionally, policies that deal with agriculture, trade, energy, real estate, finance, and social protection affect overall economic diversification and often have a greater impact on water management than policies championed and implemented by water-related ministries. For example, cropping choices are a key determinant of water use in agriculture (which accounts for some 85 percent of the region's water use), and these choices are more a function of the price farmers can get for their crops than the price of irrigation services, which are typically a very small share of costs. The price of agricultural commodities is, in turn, determined by a range of non-water policies such as trade, transport, land use, and finance.

## Opportunities and Lessons for a Future Unhindered by Water Scarcity

The factors driving the politics of water reform in the region appear to be changing in ways that represent a potential coalition for reform. A few former opponents of reform have identified economic opportunities from trade, tourism, and other sectors that require a change in water services for which these groups are willing to pay. New groups are forming, such as environmental lobbies, and new constituencies for water reform are growing within governments, too, as finance and economic ministries begin to assess the full costs of the infrastructure and services they maintain. Several countries are implementing or contemplating reforms outside the water sector that could improve

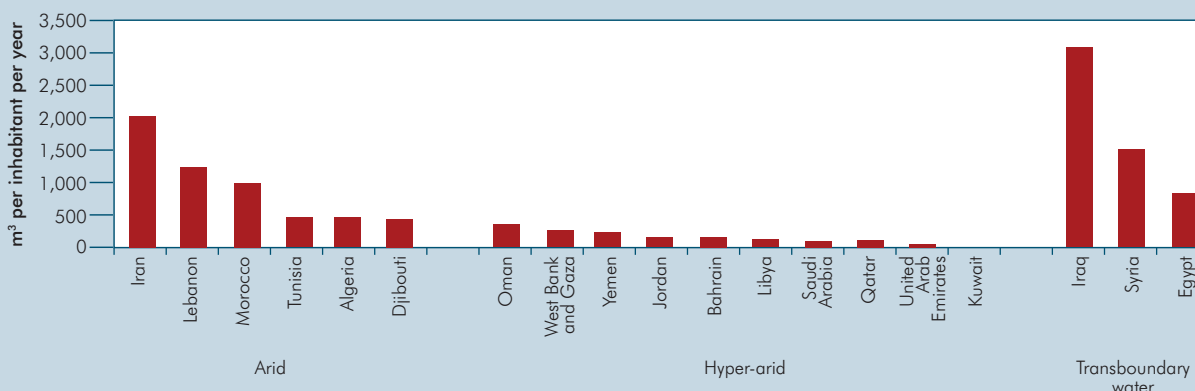
water outcomes. Increased trade in agricultural products, new policies that govern social protection or agricultural price support, reforms of banking and insurance, and the development of telecommunications and information technology could all have important effects on water outcomes, directly or indirectly. Social changes such as urbanization, increased education levels, and the empowerment of women also play a role, affecting the nature and type of water services people want, the priority they give to environmental protection, and their ability to communicate their needs to the relevant authorities. The potential for reform can be turned into reality if public accountability mechanisms are in place, and the benefits of change are widely distributed.

Water management is financially, socially, and environmentally sustainable when three underlying principles are part of the planning process. First of all, it is important to recognize that reform decisions are inherently political rather than merely technical. This makes it imperative to know the political dynamics of reform, analyze where the politics might be changing, and sequence reform activities accordingly. Next, non-water policies need to be considered and non-water decision makers need to be involved in water policy reform. Finally, there must be an emphasis on the accountability of government agencies and water service providers to the public. Governments and service providers must see clear consequences for good and bad performance. Transparency is essential to ensure that people know why decisions are made, what outcomes are expected, and what is actually achieved by reforms. This implies inclusiveness, too, as stakeholders must be involved in decision making.

Solutions need to be specific to each country or basin context, yet certain actions can help improve the climate for reform. Promoting education about the multi-sectoral aspects of water management, with a particular focus on the region's water challenges, is one such action. Another is to invest in data collection and tailor the data to the needs of policy makers from different sectors, since making sensible policy requires technical information on water balances and water quality. For instance:

- Ministries of finance are more likely to push for reform if they have accurate information about the efficiency of public spending on water.
- Trade negotiations lead to better water outcomes if negotiators know how different crop-

**Figure 2. Total Actual Renewable Water Resources per Capita in MENA**



Source: FAO AQUASTAT.

ping scenarios might play out in terms of water resource use.

Some countries in the region have already achieved promising results by following these principles. In Morocco, the King, the Prime Minister, and the Ministry of Finance have all become champions of water reform. Several countries (Algeria, Egypt, and Yemen) have begun explicitly addressing non-sectoral audiences and presenting analyses that show the impact of poor water management on the economy. Many countries have improved accountability and stakeholder involvement, incorporating users in planning and service delivery decisions as well as by collecting and publishing data on water outcomes.

Water need not constrain economic development and social stability in the MENA region. Household, commercial, and industrial water uses represent only 10 to 15 percent of a country's water needs, with agriculture and the environment accounting for the rest. Almost every country of the region, therefore, has sufficient water to supply its population with drinking water, even given burgeoning urban populations. Strong and diversi-

fied economies are likely to give governments more political space for the reforms necessary to improve water management. Economic diversification and growth could lead to more employment opportunities outside agriculture, and allow the region's farmers to consolidate and concentrate on high-value crops. By importing a larger share of food needs, countries could release more water into the environment, reducing pressure on aquifers and maintaining basic environmental services and sustainability. (See the figure below for a regional perspective on availability of renewable water resources.)

The MENA region can meet its water management challenges. Coping with scarcity in a context of rising populations and economic expansion involves difficult choices and painful changes. Yet, the steps taken recently in several MENA countries demonstrate that the choices can be made and change can happen. Placing water reform in the context of political economy and working within the multi-sectoral nature of water management makes reform possible, and these reforms can generate beneficial economic, human welfare, environmental, and budgetary outcomes.

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