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# The Role of Drought in Determining the Reserve Water Sector in Israel\*

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Drought is a compelling environmental phenomenon. Drought is also an extremely important feature of the political economies of dry regions. This study will emphasize the political significance of drought. Droughts, and especially protracted drought, send much stronger signals about water availability to a much more comprehensively diverse range of water interests than any other single political factor or any combination of factors operating in a political economy. Drought affects water users as well as those involved at all levels in water allocation, water legislation, and water policy development and implementation. Natural systems decree that water shortages have to be endured. A major socioeconomic consequence is that some users have to endure the economic impact of becoming the reserve economic sector—that is, the sector that accommodates future periodic water shortages. Not many political economies have the market, the regulatory instruments, or the political institutions to respond without very strong political stress to the reallocations implied in the identification of a reserve sector. Politicians have little stomach for such reallocation.

Awareness of the value of water has risen rapidly in the past decade, and this shift in perception has helped institutions responsible for the renewable water resources of water-scarce regions to recognize the need for economically and ecologically rational water allocation and management. For scientists, technocrats, and a minority of a politically influential community, it is easy to conceptualize the medium- and long-term consequences of water resource mismanagement. On the other hand, those whose livelihoods and political interests depend on de-emphasizing such analysis require very strong signals indeed to get them to recognize that bad news about water security must figure into the policy agenda. A drought makes present predicaments clear and future problems unavoidable: “When the well runs dry, we recognize the value of water.” It is the experience of enduring the absence of water during a protracted drought that compels a sufficiently large and significant suite of political interests to consider and even adopt principled approaches to water allocation policy and its implementation.

The other condition that enables the consideration and adoption of ecologically and economically rational (as opposed to politically rational) policies is the existence of a diverse and flexible economic system. Strong economies have options not available to poor economies. Those managing a strong economy, albeit an economy poorly endowed with water resources, have the option to compensate those who will lose by the diminution of their interests through the reallocation of water.

The experience of California and neighboring states during the drought of 1991–92 and the droughts in Israel and Jordan in the 1980s and 1990s illustrate the constructive political significance of drought. Water users and water resource managers in these very different geographies have implemented new policies to secure supplies for some water users. Industrial and domestic users place relatively small demands, in terms of volume, on water supplies compared to agricultural users. Persuading agricultural users to be the reserve sector—that is, to endure the impact of a drought—is the challenge.

It is argued here that as an economy becomes more diverse and competent, it has the option to adopt different water allocation and management policies. The adoption of these new policies faces fierce political resistance. The case of Israel is very useful in illustrating the important role of drought in forcing water users to endure a phase of stringent reductions in water deliveries. The trends in use since 1947 show a dramatic increase in the 1950s and further increases in the 1960s, 1970s, and the first half of the 1980s, increases that scientists knew to be ecologically unsound. The arguments from scientists and officials that the levels of water use were not sustainable, which first were asserted in the 1960s, had no political impact until they could be combined with the message of nature—the droughts—that could not be ignored.

Since 1990, the approach to allocating and managing water has been changing rapidly. The international attention focused on water, in the Middle East in particular, has been timely and unprecedented in terms of the emphasis given to economic issues relevant to water allocation and management (OECD, 1989; World Bank, 1990, 1993a, 1993b; and Rogers and Lydon, 1994). Since 1990, the Jordan catchment has also been analyzed more comprehensively by scientists than at any time in the past with respect to international relations (Lowi, 1993); the economics of water in agriculture (Fishelson, 1992; Brooks, 1994; and Lonergan and Brooks, 1995) and in industry (Schiffler et al., 1994); the use of technology (Elmusa, 1994); and a wide range of other factors (Wolf, 1995; and Ayeb, 1993). The subject has been given a high priority by agency-sponsored study teams (PRIDE, 1992) as well as by teams of scientists in Cambridge, Massachusetts (Fisher, 1994). Those involved in the Peace Talks have, in parallel with scientists meeting informally, devoted significant attention to new approaches to the allocation and management of surface and ground water resources (Isaac and Shuval, 1994; and Feitelson and Haddad, 1994 and 1995).

Israel has led the field in introducing water policies (in 1967) that have

steered water use in its domestic, industrial, and agricultural sectors to levels that are consistent with predicted levels of water availability. The policy of trying to achieve water self-sufficiency, which was evident in the 1950s, proved to be a fantasy by the 1960s, but it was a powerful fantasy not laid to rest in the national perception until two decades later. Water use was still increasing until the mid-1980s, and it was not until the drought of 1986–87 that measures could be considered to attempt to keep in place the reductions in water use achieved during the drought. The 1986–87 cuts in water to irrigated agriculture could not be maintained, and water use rose again, but the 1991–92 drought allowed the ecological and economic arguments to be reasserted, and the cuts were reimposed.

Ninety-seven percent of the country’s GDP comes from less than ten percent of the national water, an indication of the economic significance of the water allocated to industry and services. That agriculture was chosen as the sector to bear the consequences of drought is illustrated by the reductions of water allocations to agriculture by more than 25% of the 60% nominated as a target reduction by the Israeli Water Commissioner in 1992 (Voice of Israel, 1991). There is not enough space here to describe or analyze the politics that contributed at all levels to the transformation of Israeli water policy. The important point to emphasize for those who struggle to introduce sound concepts of water allocation into water science and water policy as well as into real world water management is that drought periods are particularly important in asserting and advancing ecological and economic principles that are essential for the long-term viability of national ecologies and political economies.

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