WATER AND PEACE

Franklin M. Fisher

It is often said that water will be the source of the next war in the Middle East -- indeed, that water conflicts all around the globe will arise in the next century. In the Israeli-Syrian negotiations, a major issue as to the return of the Golan is reported to be control of the water sources there. In the Israeli-Palestinian negotiations, water is one of the "final-status" issues and a potential obstacle to a lasting peace agreement.

It does not have to be like that. Rational thinking about water and water agreements shows that water can be a source of cooperation rather than of conflict and that, in a very precise sense, water is not worth war.

To begin: No matter how valuable water is believed to be, it cannot rationally be valued at more than the cost of reproducing it. Hence, for any country with a seacoast, the cost of seawater desalination implies an absolute upper bound on the value of water in dispute. In the case of Israel, desalination costs are currently estimated at $.75 per cubic meter or less. Since the water in dispute is not on the seacoast but itself has costs of extraction, treatment, and conveyance, that water can never be worth more than a good deal less than $.75 per cubic meter. Much of the water claimed by both Israel and the Palestinians is underground. One hundred million cubic meters of that water annually (a major amount of water in that dispute) can never be worth more than roughly $30 million per year. This is a minor sum in the peace negotiations. Fighter planes cost far more than that.

As this suggests, water ownership is only a matter of money. But that is only the beginning, and seawater desalination is only an inefficient answer to water problems.

For several years, the Middle East Water Project -- a project facilitated by the government of The Netherlands and undertaken by Israeli, Jordanian, Palestinian, American, and Dutch experts with the consent (but not the full commitment) of the three Middle East governments -- has been hard at work producing tools for the management of water and the resolution of water disputes.

Its goals are as follows:

1. To create models for the analysis of domestic water systems. These models can be used by planners to evaluate different water policies, to perform cost-benefit analyses of proposed infrastructure taking system-wide effects and opportunity costs into account, and generally for the optimal management of water systems. **The models are not narrowly economic. They permit the user to take full account of the special role of water and the possibility that water's social value may exceed its private value. The Project's tools assist water policy; they do not make it.**

2. To facilitate international negotiations in water. This has several aspects:

    - The use of the Project's models separates the problems of water ***ownership*** and water ***usage*** and enables the user to value water ownership in money terms (***after imposing his or her own social values and policies***). This enables water negotiations to be conducted with water seen as something that can, in principle, be traded. Further, the

Project shows that water values are, in fact, even lower than the desalination analysis suggests.

- By using the Project's tools, the user can evaluate the effect of different water ownership settlements. This should assist in preparing negotiating positions if the ultimate agreement is to be of the standard water-ownership-division type with no further cooperation.

- Perhaps most important of all, the Project shows clearly that continued cooperation in water tends to be for the benefit of ***all*** parties. Such cooperation in the form of an agreement to trade water at model prices can lead to very large gains to ***all*** participants (sellers as well as buyers). In particular, there would large benefits to both Israel and the Palestinians from such an arrangement. The gains are far larger than the value of ownership of more or less of the disputed water is likely to be.

- Beyond the purely economic gains of such an arrangement are the gains from a flexible, cooperative water agreement in which allocations change for everyone's benefit as situations change. Such an agreement can turn water from a source of stress into a source of cooperation. By contrast, agreements that simply divide the disputed water resources can easily become outdated and a source of renewed friction.

In sum, the Project seeks to promote "outside-the-box" thinking about water problems and thus to remove them as an obstacle to peace negotiations. That will not happen if the parties continue to think of water negotiations as simply matters of retaining as much water ownership as possible.

Franklin M. Fisher is the Jane Berkowitz Carlton and Dennis William Carlton Professor of Economics at the Massachusetts Institute of Technology and the Chair of the Middle East Water Project