Can we develop a new paradigm for long-term water use sustainability in Central Asia?

J.P. Alster

Shimoni, Alster & Rasiel, Advocates
48 Petach Tikva Rd., Tel-Aviv 66184
jalster@sar-law.com

Despite the fact that the actual quantity of renewable surface water resources per capita in the Central Asian region ranges from 2,000 CM/year in Uzbekistan to more than 7,000 in Kazakhstan the common perceptive in the region is that there is insufficient to sustain their economic needs (primarily for hydropower production and irrigated agriculture) thereby creating tension between the upper and lower riparian countries. The prediction is that global heating will reduce surface water availability in Central Asia even further thereby adding to the stress on the available water.

The efforts in finding an equitable allocation of surface water resources have focused hitherto on the water-energy nexus, which admittedly is the major source of friction between the up and downstream countries.

This paper argues that in order to arrive at a long-lasting solution it will be necessary to look beyond the water-energy nexus, identifying the wider interests of the CA countries and using all of these in forging a solution which will benefit all stakeholders. Such interests could include, in addition to hydropower and irrigation, also the environment, water quality, salinity problems, drainage, land uses, agricultural yields, crop diversification, sale of electricity to third parties, storage etc. The overall objective will still be to balance between hydropower and agriculture, not between competing water uses. Agriculture needs water for production. If the same or better yields can be attained with less water could that not be an incentive to water savings ? Thus a solution will involve additional factors that will constitute a win-win package for all countries.

A possible comprehensive package deal could be crafted along the following lines. The irrigation sector moves to pressurized irrigation systems (sprinklers and drip) and, where suitable, conjunctive (surface and ground) water use, resulting in an overall reduction of surface water consumption per hectare. The reduction of water consumption per hectare could have the following advantages (a) an overall reduction in water consumption during the vegetation period will release water for hydropower production during the winter; (b) improved irrigation mechanisms will lead to a reduction in soil salinity and an increase in agricultural yields; (c) groundwater tables are lowered thereby reducing damage to the roots (d) reduced use of water will lower the salinity in the rivers in the lower reaches of the river (e) increased irrigation efficiency will allow land use for irrigation; and finally (f) there will be water flowing to the Aral Sea and will at the least replenish the deltas of the Aral Sea.

The net result will be that the downstream countries will enjoy increased agricultural yields. The upstream countries will have additional hydropower for sale.

The benefits and cost will be shared among the countries. For example, in return for a reduced water use during the vegetative season which benefits the hydropower users, the latter could share some of the added benefit of electricity sale with the downstream countries thereby contributing to the modernization of the irrigation systems which will allow the downstream countries to improve their yields but which costs money.