

Balancing resource protection and development in a highly regulated river: The role of conjunctive use

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Abstract

The central position of water in social and economic development drives the imperative for water storage, particularly in water-stressed parts of the world. A consequence is that rivers are perceived primarily as locations for water storage as we seek to manage risks to social welfare and development. Assurance of supply becomes the dominant paradigm shaping decisions about allocation of water from impoundments. When this paradigm is deeply ingrained it constrains decision-making around flow management for other purposes, particularly for sustaining ecological systems. Ten years ago South Africa introduced progressive legislation for water resource management (the National Water Act of 1998) which enshrines the ecological Reserve. This requirement for the environment is not considered as a water use, because the environment is the resource. However, due to the very complex Reserve determination process, and perhaps a lack of political will, the ecological Reserve has proved difficult to implement and has only now started to be implemented in some river systems. In the case of the lower uMngeni River in KwaZulu-Natal, besides releases to maintain a minimum river flow (the so called 'compensation flows', which were never designed as environmental flows), for nearly 20 years there has been an unofficial policy to allow spates on between 1 and 4 days per year to make possible the continuation of the prestigious Dusi Canoe Marathon. The total amount of water involved is just over 1.2% of the river's virgin MAR, although in years perceived to be dry the releases may be cut to as little as 0.3% of the virgin MAR. While these releases have been tolerated for the continuation of a high-value recreational industry, they are in fact aligned, albeit with a fraction of the necessary volume, with the environmental flows that would be required if the ecological Reserve had been determined. The releases for these events therefore have a dual or conjunctive value, serving both environmental and recreational purposes at the same time. We suggest that considerations of conjunctive use offer practical opportunities for balancing resource protection and development in regulated rivers.

Keywords: resource protection, regulated rivers, assurance of supply, conjunctive use, ecological Reserve, environmental water allocation, environmental flows, recreational use, canoeing