Pathways to Water Security in a Transaction Costs World

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Abstract
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Reference

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Water crises are regularly described as governance crises, and governance is not cheap due to transaction costs. Largely hidden from view, transaction costs have been described as the ‘economic equivalent of friction’ by Nobel Laureate Oliver Williamson. Understanding transaction costs, their drivers and the strategies for reducing, financing and sharing these costs is critical to allocate water across sectors and scales in rivers under pressure.

This is one of the important and recurring themes addressed in Water Allocation in Rivers Under Pressure by Dustin Garrick, which compares the evolution and performance of water allocation reform across three major river basins: the Colorado (USA, Mexico), the Columbia (USA, Canada) and the Murray Darling (Australia). These three rivers are all chronically stressed, facing a mix of drought, diminishing reservoirs, and ecosystems in peril. They also have multiple decades of experience responding to these challenges through water allocation reforms focused at the intersection of water markets and river basin governance – two approaches often considered separately.

The Colorado, Columbia and Murray Darling river basins are all situated in federal countries, shared across multiple jurisdictions. All three face large-scale collective action dilemmas, whereby stakeholders need to work together - often at considerable cost - to develop and share the river. In the case of the Colorado and Columbia, these dilemmas are amplified by the political costs of international transboundary management.

By 2050, nearly 4 billion people will live in river basins experiencing severe water stress, according to the Organisation for Economic Co-operation and Development (OECD). Thus the management lessons from these iconic river basins are more timely and important than ever. Furthermore, an explicit understanding of the role of transaction costs, and their relation to...
institutional change, in water allocation reform is evermore urgent.

The study of transaction costs was underway already in 1960, when Nobel laureate Ronald Coase looked at their implications for natural resource allocation. As taken up in *Water Allocation in Rivers Under Pressure*, transaction costs are defined broadly as “the resources required for collective action to develop, implement and adjust property rights and adopt institutional changes,” and quantified using metrics such as staffing levels, financial expenditures and public agency budgets. In short, transaction costs refer to the resources that keep water institutions running, and (ideally) innovating and improving.

In the context of the Colorado, Columbia and Murray-Darling rivers, Garrick looks at the transaction costs associated with: a) water markets and b) river basin governance. A key lesson is that the path towards sustainable and adaptive water allocation reforms involves substantial, sustained and multilevel investments in governance capacity. Garrick arrives at this important message via his transaction costs analysis and lessons, such as:

**History matters.** The case of the Colorado River best illustrates the important role of history and “path dependency” in defining modern-day transaction costs. The 1922 Colorado River Compact is an infamous example, which was overly optimistic about long range water supply and has essentially “locked in” over-allocation of the river’s water. Moreover, strong property claims to water through historically-rooted prior allocation regimes mean that existing users - often large irrigators - wield enormous political power in the region. The transaction costs associated with water rights reform – essentially undoing the past – in this context are foreboding, but not insurmountable. The corollary is that decisions today should consider their consequences for flexibility in the future. Addressing the ‘omissions of the past’ (e.g. environment) has involved cooperation and experimentation in the shadow of severe drought.
The Great Murray River looking north from the cliffs at Paringa, South Australia.

- **Not all transaction costs are equal.** In the context of the Columbia basin, Garrick shows that successful reforms can require a significant initial investment in institutional reform and capacity building (i.e. high transition costs) to enable water trading, strengthen collaborative relationships between users, and craft novel institutional partnerships and water banking tools to scale up. This is exemplified in the case of the Deschutes River sub-basin in the state of Oregon, where costly but strategic – initial investment resulted in a clear downward annual trend in transaction costs per unit of recovered water, as well as the capacity to scale up water recovery to meet restoration targets.

- **Coordination is not the same as centralization.** One of the many lessons deriving from the Murray-Darling basin is that ‘scaling up’ is costly, has taken time and requires a range of complementary approaches to coordinate decisions at the basin scale. Water markets and river basin governance institutions need to be mutually reinforcing, rather than developed independently. Consensus-based decision-making is costly and slow, but brings legitimacy that can pay off in the long run. Efforts to centralize basin planning, deemed necessary in the throes of Australia’s Millennium Drought, have triggered resistance.

These and other lessons are critical as we design and negotiate institutions for the future, so
that they may be resilient in an uncertain world. Garrick considers the gold standard of institutional performance to be ‘adaptive efficiency.’ Adaptive efficiency refers to not to efficiency in the neoclassical sense (i.e. least cost path) but in terms of efficiency over the long term. Inevitably, this brings in considerations beyond efficiency itself, such as legitimacy, decision making structures and flexibility to changing circumstances. In this way, adaptive efficiency requires the lowering, but not the elimination of, transaction costs – as institutions must be modified or created as the context changes.

By “making transaction costs visible”, we can gain new insight about why water security remains elusive despite the pressing and rising needs. We can also draw on an analytical tool kit to assess which institutional investments are likely to move us on a more flexible and adaptive path in rivers under pressure.

References:


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