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A Non-Zero Sum Game: How Game Theory can Inform Better Transboundary Water Rights Treaty Drafting

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Description / Abstract

Despite its fundamental role as to the very existence of humans and their economies, the provision of clean water to their citizens remains a challenge to governments across the globe. This challenge presents itself as a classic interdisciplinary opportunity to blend science, law, and economics into an adaptive management solution ensuring the availability of this critical resource to all of the earth's inhabitants, regardless of location or socioeconomic status. This paper will explore how countries manage transboundary water resources, and how cooperative strategies may emerge that benefit each country that shares an international river or lake. In particular, this research explores how game theory and international treaties integrate the natural geospatial and temporal variability of hydrologic cycles into malleable instruments that ensure water supply and quality even in times of drought. Drawing on the long-term feedback available from the United States' and Mexico's International Boundary and Water Commission treaty for the Rio Grande River (and several smaller transboundary rivers), this paper asserts that even narrowly self-interested states can reach agreements in managing scarce water resources that lead to non-zero-sum outcomes and the availability of clean water at all times for their citizenry.

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