Identifying regime transitions for water governance at a basin scale

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Abstract

[Water governance determine "who gets water, when, and how" in most large river basins. Shifts in water governance regimes from natural to social-ecological or "hydrosocial" carry profound implications for human wellbeing; identifying regime changes in water governance is critical to navigating social-ecological transitions and guiding sustainability. We characterized water governance along with the three main aspects - stress, purpose, and allocation - to develop a quantitative Integrated Water Governance Index (IWGI) at a basin scale. Applying the IWGI to the rapidly-changing Yellow River Basin (YRB) in China clarifies shifts in water governance between massive supply, transformation governance, and adaptation-oriented regimes. In the YRB, the underlying causes of regime shifts were increasing water supply and demand before the governance transformation and re-allocation and regulation after the change. The IWGI offers a comprehensive and straightforward approach to linking water governance regimes to sustainability, providing valuable insights into hydrosocial transitions.]

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