



Aqueduct: a methodology to measure and communicate global water risks

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The Aqueduct Water Risk Atlas (Aqueduct) is a publicly available, global database and interactive tool that maps indicators of water related risks for decision makers worldwide. Aqueduct makes use of the latest geo-statistical modeling techniques to compute a composite index and translate the most recently available hydrological data into practical information on water related risks for companies, investors, and governments alike. Twelve global indicators are grouped into a Water Risk Framework designed in response to the growing concerns from private sector actors around water scarcity, water quality, climate change, and increasing demand for freshwater.

The Aqueduct framework organizes indicators into three categories of risk that bring together multiple dimensions of water related risk into comprehensive aggregated scores and includes indicators of water stress, variability in supply, storage, flood, drought, groundwater, water quality and social conflict, addressing both spatial and temporal variation in water hazards. Indicators are selected based on relevance to water users, availability and robustness of global data sources, and expert consultation, and are collected from existing datasets or derived from a Global Land Data Assimilation System (GLDAS) based integrated water balance model. Indicators are normalized using a threshold approach, and composite scores are computed using a linear aggregation scheme that allows for dynamic weighting to capture users' unique exposure to water hazards.

By providing consistent scores across the globe, the Aqueduct Water Risk Atlas enables rapid comparison across diverse aspects of water risk. Companies can use this information to prioritize actions, investors to leverage financial interest to improve water management, and governments to engage with the private sector to seek solutions for more equitable and sustainable water governance. The Aqueduct Water Risk Atlas enables practical applications of scientific data, helping non-expert audiences better understand and evaluate risks facing water users.

This presentation will discuss the methodology used to combine the indicator values into aggregated risk scores and lessons learned from working with diverse audiences in academia, development institutions, and the public and private sectors.