

## **Conflict and Cooperation Analysis on Transboundary River Basins Using News Media Text Mining Approach**

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There are 310 international river basins that span more than a single country covering more than 40 percent of the Earth's population and land area. Transboundary river management affects sustainable development within and beyond a country's borders, thus plays a critical role for global water security. However, transboundary river systems are often characterized by conflict and cooperation. This is because that riparian states value the water differently, thus differ in water management regime, priorities and culture for water resources. Conflictive events often arise due to conflicting demand and management preferences among riparian states.

Understanding the level of conflicts and the dynamics that drive the choices between conflict and cooperation is therefore critical in gaining insights of the complex transboundary systems, and in assisting with sustainable water management.

This study aimed to uncover the patterns and dynamics of conflictive and cooperative events on a global scale. To achieve this goal, we explore the temporal trends and spatial distribution of conflictive and cooperative events globally by collecting large news media datasets, and then employing machine learning techniques to do data mining out of those news media data. We intend to draw a world map with a timeline to show how water conflict, and cooperation occurs, grows, and transforms. By capturing characteristics of the life cycles of water conflict and cooperation, we aim to throw light upon water management in transboundary river basins, provide some hints for water resources decision-makers, and enhance global water security.