

Formation of transboundary trust environment to promote cooperation in The Eastern Nile Basin: Application of trust game

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Basin-wide cooperation can bring additional economic, environmental, social, and political benefits through multi-purpose shared river projects. It suggests that the benefits can increase considerably when a regional perspective is adopted; that promotes optimum use of water resources for consumptive and non-consumptive uses. So far, all the attempts of cooperation among Eastern Nile countries have not been fully successful. The main reason for this failure is mistrust in the decision-making environment which has been caused by lack of transparency, geopolitical imbalances, lack of adequate and relevant data, and shifting development ambitions.

This study simplified the real-world scenario of the Eastern Nile Basin shared by Ethiopia, Sudan and Egypt, into a controlled laboratory, role playing game, in which players played the decision makers' role in a transboundary context. We collated data from a variety of sources and from a series of interviews with experts on location, government officials, academics and representatives of development agencies to make evaluations for the game design

Controlled laboratory experiment was designed, based on the trust game algorithms and conducted to study the likelihood of future cooperation. The experiment evaluated the four scenarios developed by the hydro-economic model of the basin by comparing the economic gains of each country in absence of cooperation and in full cooperation. Considering the soon to be completed of GERD in Ethiopia, it seems renegotiation establishment of a cooperative arrangement in the basin can be Egypt's best alternative regarding economic and development concerns.

We find that transboundary cooperation is a recursive process of a dynamic and contentious information exchange between multi-level institutions and actors. The outcomes of the study establish the fact that sharing of information, ecosystem-friendly policies, thought and mutual understanding will dispel the suspicion and develop trust between riparian countries, creating an enabling environment for better management of the great Nile River.