2021 Vol.5 No.S1

## Hydropower reservoir level impact on the river flow in humid regions

## **Julian David Hunt**

D.Phil, International Institute for Applied Systems Analysis (IIASA), Austria

**Copyright:** ©2021 **Hunt Julian D**. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Abstract

Water management strategies can have considerable impacts on the regional climate and hydrology. It is usually the case that the construction and operation of hydropower reduces the river flow downstream due to the increase in evaporation. However, this paper shows that in humid regions, such as in Brazil, the hydropower storage reservoirs contribute to increase the flow of the river. This observation has been tested with historical reservoir level and river flow data from several dams in Brazil. It was found that the operation of reservoirs in Brazil has a considerable impact on its river flows. The higher the storage level in the beginning of the humid period, the higher the river flows during the wet period. The paper proposes strategies to allow the reservoirs to fill up and to maintain the reservoirs filled in the future, with the intention of increasing hydropower generation and reducing the intermittency of other renewable energy sources.

## **Biography:**

Julian Hunt is a is a postdoctoral research scholar in the Sustainable Service Systems (S3) Research Group of the IIASA Energy, Climate, and Environment Program where he focuses on implementing daily and seasonal storage energy technologies in MESSAGE models and analyzing the impact of these technologies on long-term energy planning. His research interests include analysis of energy systems, waterenergy-land interfaces, climate change risks, energy security, and energy storage.