

Is Telangana Thirsty?

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Abstract

Telangana is a state in central India. It is characterized by its dry (828 mm of rainfall per year on average) and hot climate, coupled with a fast growing capital city - Hyderabad. Due to the development of urban areas, industries and agriculture since the 1980's, water availability has become an issue for the economic development of the state.

Rainfall is scarce and the inter-annual variabilities are high. One part of the water used comes from groundwater, and the other part comes from water stored in lakes and reservoirs. Several large reservoirs were built in the 1980's in order to provide water for various human activities throughout the year. It is empirically known that the level of water fluctuates significantly according to the seasons and even from year to year. However no studies have yet been carried out to study these fluctuations in detail.

This work aims to quantify the extent of fluctuations of the water bodies from the end of the 1980's to the present day. A methodology that only examines water bodies greater than 10 km² based on Landsat images 5, 7 and 8 was defined. The extraction of water bodies is based on the Automated Water Extraction Index calculated for each Landsat image, and the treatment chain combines GRASS GIS and Python. As Landsat images provide regular information for the same part of the world at 20-day intervals, we can thus capture the extent of inter-annual variations of the water bodies alongside the intra-annual variations for analysis.

About the Speaker



Dr. Paul F. Passy is a postdoctoral teaching fellow in the Department of Geography, NUS.

He received his Ph.D. in Environmental Sciences from the Université Pierre-et-Marie-Curie (UPMC) in Paris, and his M.A. in Remote Sensing, Geomatics and Fluvial geomorphology from the Université Paris Diderot.

Prior to his current appointment at NUS Geography, Paul was a postdoctoral fellow at the French National Centre for Scientific Research (Le Centre national de la recherche scientifique). His current research interests include forest fragmentation in Southeast Asia, urban green areas and nutrients transfers through the aquatic continuum.

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