



## **Incorporating climate change in water resources planning and management: scientific challenges and beyond**

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Planning and management of water resources has always been a difficult problem, since water resources are extremely sensitive to the nonlinearity of hydrologic processes and their complex feedback mechanisms. Looking at the future global climate change projections and their potential effects, this problem will become even far more tremendous in the decades to come. The important challenges in addressing this problem are not just limited to science but are also well beyond. Scientific challenges are in regards to, among others: our knowledge of the causes of climate change, the ability of Global Climate Models (GCMs) to incorporate the causes to generate future climate scenarios, the downscaling methods available to transform the GCM outputs to regional and local scales, and estimation of the associated uncertainties. Other challenges have political, social, economic and environmental facets (often acting in an interconnected manner), among others. The present study is intended to detail these challenges and to propose an approach to address them in an integrated manner. The vital role of water researchers in the formulation of such an integrated approach is also highlighted.