

[Prof. Sankar Arumugam](#)
[Department of Civil Construction and Environmental Engineering](#)
[North Carolina State University, Chapel Hill, NC](#)

Water Security under changing climate : Stressors, Opportunities and Challenges

Abstract

It is well-known that two stressors - changing climate and development - challenge water security at local/regional/national scales. In this talk, I explore two paths - hard and soft - to cope up with these continually changing stressors. Potential gain in reservoir management using seasonal-to-interannual forecasts and near-term climate change projections are first presented under the soft path. Following that, I present spatio-temporal patterns in national water-use efficiency and also emphasize the potential improvements that could be gained by demand reduction approaches. Finally, I stress the national water data gaps - not on the physical attributes, but more on the management and demand side - that limits our ability to develop robust and resilient strategies for meeting the supply and demand over the planning horizon.

Bio: Dr. Sankar Arumugam is a Professor in the Department of Civil, Construction, and Environmental Engineering at NCSU. He is also a University Faculty Scholar (2013-2018). He is primarily associated with the [Environmental, Water Resources, and Coastal Engineering](#) and [Computing and Systems](#) groups within the department. Dr. Arumugam currently serves as the associate editor for the Geophysical Research Letters (AGU) and for the Journal of Hydrometeorology (AMS). He also served as the associate editor for Water Resources Research (AGU), Journal of Hydrology (Elsevier), Journal of Hydrologic Engineering (ASCE) and as the editor of Journal of Water and Climate Change (IWA). Dr. Arumugam is also a member of American Geophysical Union, American Meteorological Society and Environmental Water Research Institute of the American Society of Civil Engineers.