CRITICAL ADAPTATIONS IN AGRICULTURAL WATER MANAGEMENT IN PUERTO RICO VIS-À-VIS CLIMATE CHANGE PREDICTIONS

Eric W. Harmsen

Dept. of Agricultural and Biosystems Engineering
University of Puerto Rico at Mayaguez
eric.harmsen@upr.edu

The drought of 2015 has dramatically demonstrated how vulnerable Puerto Rico's water supply system is. Water shortages in the island's eastern half have severely impacted the domestic, agricultural, and industrial sectors. Puerto Rico has experienced a number of significant droughts during the last 50 years (at least eight). Climate change predictions for the Caribbean Region indicate even drier and warmer conditions in the future. When combined with the effects of climate change we might expect the periodic droughts, common in the region, to become worse.

In this presentation, we discuss the new climate modeling results that suggest rainfall may be reduced and temperatures may increase more than previously predicted. Accompanying soil and water variable results from the GOES-PRWEB operational algorithm are presented for the 2015 drought. The current status and limitations of the agricultural water management infrastructure in Puerto Rico are discussed. Recommendations are provided for increasing on-farm water use efficiency using an irrigation scheduling method based on GOES-PRWEB, and some critical recommendations are offered for improving the agricultural water system infrastructure in the island.