

American Water Resources Association
2015 SUMMER SPECIALTY CONFERENCE
Climate Change Adaptation
June 15 - 17, 2015
New Orleans, LA

Wednesday, June 17

1:30 PM – 3:00 PM

SESSION 19: Resilience and Policy

North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk - Roselle Henn, USACE National Planning Center for Coastal Storm Risk Management, Brooklyn, NY (co-authors: J. R. Vietri, A. M. Guise, N. R. Fraenkel,)

The Northeastern United States is directly experiencing climate change trends in terms of increased precipitation and sea level change. Storms of large areal extent such as Hurricane Irene in 2011 and Hurricane Sandy in 2012, resulted in significant damages and disruption signaling the need for adaptation planning at the regional scale. The Disaster Relief Appropriation Act of 2013 (P.L. 113-2) recognized the need to comprehensively evaluate the existing and planned measures to reduce the flooding risk from future storms and directed the Assistant Secretary of the Army for Civil Works to undertake a Comprehensive Study of the Sandy impacted areas in the North Atlantic Division (Maine to Virginia). The Secretary charged the US Army Corps of Engineers with the conduct of the Study and submitted the final Report to Congress on 28 Jan 2015. The North Atlantic Coast Comprehensive Study provides a Coastal Storm Risk Management Framework designed to help regional decision-makers with adaptation planning at a systems level. The Study builds on the latest scientific information and includes many new technical products and tools to provide a common basis for greater resilience throughout the Northeast. This presentation will include discussion of: - The roles of federal, state and local governmental agencies in adaptation - Communicating risk and adaptation - GIS - Climate vulnerability assessments - Erosion and deposition/accretion - Economic vulnerability assessment and responses - Using natural systems and nature-based infrastructure be used to increase resiliency

A review of methods used to improve the resilience of communities in low-income countries to coastal floods and their relevance to the USA - Darren Lumbroso, HR Wallingford, Wallingford, UK (co-authors: K. D. White, S. E. Durden, J. D. Simm, R. J. Nichols, N. R. Suckall)

Coastal communities in low-income countries are often very vulnerable to storm surges. Owing to sea level rise it has been estimated that by 2100 approximately 200 million people could be at risk from coastal flooding. The World Bank has recently calculated that future flood losses in the world's 136 largest coastal cities could rise to US\$1 trillion a year if coastal cities do not adapt. Many low-income countries have achieved considerable success in increasing the resilience of their populations to coastal flooding and tropical cyclones. For example, the

Bangladesh Cyclone Preparedness Programme has successfully warned, evacuated and sheltered millions of people from cyclones since its inception in the early 1970s, reducing loss of life from extreme cyclonic events from the hundreds of thousands to a handful. This has been achieved by a combination of structural measures such as the construction of cyclone shelters that are also used as primary schools and the mobilisation of some 49,000 volunteers. These volunteers are trained in the dissemination of early warnings, evacuation, search and rescue, first aid, basic disaster management and leadership. They are motivated, not via monetary incentives, but via the self-fulfilment of protecting their communities. With such "bottom up" community-based approaches, the population at risk has to be motivated, organised and well trained, as well as being provided with essential tools. In the Caribbean, Africa and South-East Asia similar schemes have been used to mitigate the effect of coastal inundations and hurricanes. This paper reviews methods used to improve the resilience of vulnerable, and often isolated, communities in low-income countries to coastal hazards under challenging circumstance and seeks to establish if some of these methods and lessons-learnt can be applied in the USA.