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CLIMATE CHANGE CHALLENGES AND COMMUNITY ADAPTION IN COASTAL BANGLADESH



Principal Investigators: J. Craig Jenkins, Department of Sociology, and C.K. Shum, School of Earth Sciences

What do you get when you combine the efforts of the Rockefeller Foundation, U.S. Agency for International Development, and Swedish International Development Cooperation Agency?

You get the **Global Resilience Partnership**, a campaign to foster alliances and drive innovation by creating opportunities for scale, impact, and sustainability in the Sahel, Horn of Africa, and South and Southeast Asia – areas where new ideas and approaches can help countries and communities prepare for, adapt to, and recover in the face of chronic shocks and stresses.

Earlier this year, the partnership selected “Climate Change Challenges and Community Adaption in Coastal Bangladesh,” organized by J. Craig Jenkins, past director of the Mershon Center, and C.K. Shum, professor in the School of Earth Sciences, as one of 17 projects in its Global Resilience Challenge. The project was chosen out of a field of more than 500 applicants.

Since being chosen, project teams have been exploring the effects of persistent cycles of drought, storms, famine, and other disasters on vulnerable populations, and identifying locally driven, scalable solutions that can help communities adapt and recover while reducing vulnerabilities.

Jenkins and Shum are studying the effects of flooding in coastal Bangladesh, home to 60 million people, a third of whom live in poverty. The area is highly vulnerable to monsoonal flooding, salt water intrusion, drought, severe river erosion, sea level rise, and land subsidence. Each year more than 10 percent of crops are lost and more than 30,000 people are displaced.

The project team is working with the **Belmont Forum's Band-AID** project to measure flooding and land subsidence using MODIS satellite data. They found that flooding and erosion in the Meghna River region has led to a 6 percent change in population over a decade. Six parishads have disappeared entirely due to river erosion, and land is sinking at the rate of an inch per year.

“The Meghna River complex carries one of the world’s largest river flows driven by the Himilayan melt plus intense monsoons,” Jenkins said. Climate change intensifies the effect: “Rainfall extremes are increasing along with temperature extremes, which mean more glacial melt and monsoon rainfall, often coming from across the 1500-mile-wide drainage area.”

The team has also traveled to Bangladesh several times for fieldwork, including observations, focus groups and interviews with leaders and residents in several villages to better understand the environmental challenges they face and how they are adapting.

Ultimately Jenkins and Shum hope to establish a local Water Resources Center with three facilities: a school to provide training in community development for partnering NGOs and government agencies; a research facility to provide training in evaluation surveys and methods; and a data center to provide a range of information on water quality and quantity.



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