

Sun, sea, sand, susceptibilities

Adaptive capacities amongst agricultural and fisher households in the Andaman Islands, India

Island geographies in developing countries suffer disproportionately from the impacts of climate change and variability, which range from rapid storm surges and cyclones, to slow-onset sea-level rise, oceanic warming, rainfall variability, and temperature changes. A majority of island livelihoods consist of agriculture, allied activities, and fishing, which are natural-resource dependent and climatically sensitive. Non-climatic biophysical, demographic, socioeconomic, political and technological factors also compound climatic exposure and sensitivity of these populations, and decrease adaptive capacities.

Individual and societal decision-making to reduce vulnerability or respond to climate change often revolves around livelihoods¹. Therefore, the proposed thesis incorporates a combination of livelihoods approaches to ascertain sensitivity, exposure, perceptions and response mechanisms for these communities, with the aim of assessing the status of their adaptive capacities and suggesting policy measures to enhance them. The organisation of livelihood assets of human, natural, physical, social-political and financial capitals plays a pivotal role in this analysis, as these are differently organized and employed by households to mitigate climate risk, and the scarcest of these capitals could limit adaptive capacities².

The Andaman and Nicobar Islands (ANI) form an archipelago of 349 islands (of which 38 are inhabited) off the southeast coast of India. They are globally significant biodiversity hotspots with high endemism and a range of littoral and rainforest ecosystems. They are also home to ancient indigenous tribes as well as settlers from all across the subcontinent. Crucial from a national security stance because of their geographic proximity to Southeast Asia, they are also precarious from a human security standpoint, as they are located in a level five seismic zone and a region with high cyclonic activity. The severely debilitating effects of the 2004 Asian Tsunami are still being felt, and impacts in the Andamans included land subsidence, coastal flooding, saltwater damage, mangroves degradation, and significant loss of assets³. Climatic vulnerability of its agricultural and fishing communities is evident through a review of existing scientific work and secondary data, which reveals exposure and sensitivity of these livelihoods to both climatic and non-climatic factors.

The proposed thesis intends to focus on the vulnerability and response to climate change of the agricultural and fishing livelihood communities in the Andaman Islands, to gain an understanding of their adaptive capacities and suggest policy measures to enhance them. A political ecology approach is envisaged to allow interdisciplinary, multi-scale analysis of linkages between (and differential impacts of) climatic and non-climatic factors as well as a narrative viewpoint which reveals power relationships.

¹Schipper, E. L. F. (2007) Climate change adaptation and development: exploring the linkages. *Tyndall Centre for Climate Change Research Working Paper*, 107: 13.

²Eakin, H. & Bojorquez-Tapia, L. A. (2008) Insights into the composition of household vulnerability from multicriteria decision analysis. *Global Environmental Change*, 18(1): 112-127.

³Laxminarayana, K. & Kar, A. (2010) *Post-Tsunami groundwater management studies in Neil, Havelock and Little Andaman Islands, S. Andaman District, A & N Islands*. Kolkata, India: Central Ground Water Board Eastern Region