Mangroves play very significant roles not only on the economic aspects but also on the ecological such as biobelting or biowalling for tidal surges and tsunamis. The loss of human lives due to the deadly tsunamis in East Asia and the unabated destruction of coastal vegetation have resulted in a renewed focus on the mangrove resources. The occurrence and distributional range of mangrove vascular flora of the typhoon prone island of Catanduanes in the Bicol Region, Philippines had been reported by Masagca (2008). A total of 37 species of vascular flora (13 species of major mangal elements, 19 species of minor mangal elements and 14 associated mangal species) were identified in the island-province. These are considered to be the initial inputs in this paper on biobelting programs or biowalling the coastal areas of the island, which is arbitrarily divided into six (6) ecological zones for the purpose of planning and development in coastal zone management. A long-term mangrove biobelting program in the coastal municipalities of the province known as Project SURMABIOCON is presented in the paper. The brief history of the project (1999) that includes discussion on the biophysical characteristics of the mangrove areas contribute to the need for integrated studies, which consider the physical, social and economic components of the ecosystem. Despite the very meager research funding,
scientific activities have been carried out by the newly-organized Pacific Island Institute for Pedagogy, Technology, Arts and Sciences Incorporated (2009) and The Sylvina Valeza Masagca Center for Biodiversity, Island Ecology and Climate Studies (BIOCLIMES). The facility organized an activity on “Harnessing the Resilient Mangroves of Catanduanes Island vis-à-vis Climate Change, Sustainable Aquaculture and Food Security: A Photo Exhibit and Video Presentation for Public Awareness and Education”. As a case presentation, an initiative for CHANGE @ MAGSUR (Initiatives in Managing Magnesia del Sur’s Coastal Resources for Resilience to Climate Change) is now underway. Initially, we present several insights on the “ecology of local governance” in managing the effects of typhoons in coastal environments brought about by climate change. Using the mangroves for habitat restoration, the paradigm as outlined by Biswas et al. (2009) appears to be a specific conceptual model, which considers anthropogenic degradation and restoration following natural disturbances consisting of (1) structural manipulation (trees, land and water): planting trees and hydrological engineering; and (2) compositional manipulation (species diversity and habitat recovery): seeding and planting multiple species. Equally important is the human influence in habitat restoration which incorporates the social and economic issues of coastal/mangrove communities. In a global context to ensure efficiency and effectivity, what remains unclear for our inquiries are as follows: (a) what specific tools for land and sea-use zoning for climate change or the appropriate tools on EBM (ecosystem-based management) are needed in the project; (b) to what extent are the needed information (e.g. existing stressors or resistant areas) on managing mangroves for resilience to climate change be provided to the coastal dwellers and the local officials to ensure effectivity; and (c) which of the available designs and how are these presented or discussed as to the alternative strategies that address sea level rise, salt intrusion, typhoon or tidal surges and tsunamis. The Nature Conservancy - IUCN Resiliency Science Group series paper of McLeod & Salm (2006), the User’s Manual of Hansen et al. (2003) and K. Lowry’s (2009) Adapting to Climate Change proved to be indispensable reference materials for these on-going community-based research and mangrove restoration projects in the remote island of Catanduanes. Recent findings in the mangrove areas under study indicate several very significant obstacles: 1) the inappropriate political intervention at the municipal/provincial and national levels; 2) the lack of knowledge, expertise, and baseline and monitoring data about the biophysical conditions of the mangrove ecosystem; and 3) the differing or diverse intents on the mangrove resources (among the residents) that all lead to gaps in communication. Furthermore, our project will complete some on-going inquiries on assessing the mangrove or coastal community resilience to the effects of changes in typhoons/tropical cyclones using bioindicators as to the feeding ecology and stimulatory behavior of tree-climbing grapsoid sesarmid crabs (Sesarma, Perisesarma, etc.); and changes in the reproductive strategy as to larval and post-larval settlement of bivalves (e.g. Perna spp., Mytilus spp.) to determine substrate preferences with mangrove trees. Finally, we subscribe to the V & A approach in planning for land-sea zoning and applying adaptation tools (i.e. designing with nature, providing measures into public policy) with possible assistance from various institutions engaged in the impacts and adaptations to climate change and local governance.