Climate Change in Coastal Areas: A Community-based Adaptation Approach

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When we first embarked on this pioneering project on climate change adaptation, the objective was to determine the vulnerability of specific sites to impacts of climate change, which included changes in sea level and increased frequency of more devastating typhoons. The barangays of Bagacay and Rizal in the Municipality of Gubat, Sorsogon Province was selected because it is located along the Pacific seaboard of the Philippines which experiences considerable typhoon related impacts. The research activities revolved around policy analysis, socio-economic evaluation, training needs assessment, engineering structures appraisal and geo-physical environment characterization. Of great value to the project is the considerable support that the local government units from the provincial level down to the barangays-from the outset.

The role that coastal ecosystems, particularly coral reefs, seagrasses and mangroves, play in providing natural protection to coastal communities to buffer against high-energy waves was among the key insights gained from the undertaking. Simulation models of wave conditions under climate change scenario (i.e., bigger and stronger waves) provided scientific evidence to

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intuitive logic that coral reefs if maintained in good condition could effectively dampen wave energy and, thus, protect coastal inhabitants from the devastating effects of waves. It is as valuable as a man-made fortification such as a seawall, if not more so. For one, due to the cost it entails, a seawall is not an option that is viable for everyone. In addition, having a seawall built in a given area is subject to political consideration. More importantly they are self-maintaining and therefore do not require costly maintenance. The solution is also within the control of fisherfolks.

In addition, it highlights that ecosystem health, coastal integrity and other ecosystem goods and services are intertwined and crucial to help build resilience to disturbances impending upon climate change. Consider that even if sea level was increased by one meter and wind velocity raised by several orders of magnitude, healthy coral reefs were found to still be effective in dissipating the energy of storm-generated waves. Coral reefs grow at an average rate of 2 cm per year, which can coincide with the rate at which sea level is expected to rise annually.

What it entails is a change in attitude and greater appreciation of these ecosystems' role economically and ecologically. Fisherfolks, however, will not be able to solve the problem by themselves because the resource destruction is caused by the interplay of several factors. Factors such as pollution and siltation are beyond the sphere of influence of coastal inhabitants. Given this, an integrated approach is imperative else no end of the pipe solution will ever solve ecosystem degradation.

The project presented here is strategically groundbreaking in regard to incorporating scientific information to community level policy-making in relation to climate change. The focus product is policy advice to make the project site in Sorsogon ready for future potential change. Suggestions were grounded on robust on-the-ground information which include assessment of current and potential ocean-related climate risk to existing infrastructures in particular and the general populace in general, as well as, assessment of current state of climate change awareness of the different stakeholder groups.