

Community Innovations for Climate Change Adaptation

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The Ateneo School of Government (ASoG) is a unit under the Ateneo de Manila University that was formed in 1996 to provide an institutional vehicle for the development of public leaders. It serves as a venue for dialogue and partnership among various sectors - government, private and non-government institutions, business/corporate companies and citizen groups.

The School implements academic and development programs to pursue its main strategy of "Transforming Communities, Building a Nation." Through the Center for Social Policy, the School conducts research and carries out projects on a broad range of issues, such as mainstreaming social accountability, transforming politics, finding solutions to poverty, promoting social entrepreneurship and ensuring sustainable development.

Under the poverty portfolio, the School currently implements a project entitled *Science and Technology Innovations for the Base of the Pyramid in Southeast Asia* or *iBoP Asia*, which is in partnership with Canada's International Development Research Centre (IDRC). Through iBoP Asia, the School facilitates and catalyzes learnings on innovations that specifically target those at the base of the pyramid in order to improve their lives and livelihood.

About iBoP Asia

iBoP Asia is a three-year project that aims to foster science and technology (S&T) innovations that effectively address the needs of the BoP sector, particularly in Southeast Asia. By *science and technology*, we mean the full range of social, natural, medical and life sciences, as well the physical and engineering disciplines, and we define *innovation* as the use of new ideas, technologies or ways of doing things, in a place where - or by people for whom - they have not been used before¹.

Ultimately, the goal is to contribute towards providing affordable solutions to the BoP's unmet needs in five (5) key areas: water and sanitation, energy, health, agriculture and food, and biodiversity/climate change adaptation. In December 2008, the project has awarded research grants to 11 Southeast Asian organizations to conduct BoP innovation studies in these areas (visit the project's official website, www.ibop-asia.net, to know more about the iBoP Small Grants Program and the grantees).

The Challenge: BoP vulnerability to climate change

As the Project entered its second year, it responded to the pressing challenge of climate change by examining the role of technology and innovations to reduce vulnerability of the BoP sector and improve its ability to adapt to the impacts of a changing climate.

¹ as defined in the IDRC document entitled *Research Councils and Support Organizations in Southeast Asia: A Report on Science, Technology and Innovation Systems in Indonesia, Vietnam, Philippines, Thailand, Malaysia and Singapore* by Dr. Randy Spence, dated November 2008

Climate change has been declared “unequivocal” by the Intergovernmental Panel on Climate Change (IPCC). This is based on scientific observations showing increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. In its 2007 report, the IPCC indicated how climate change can have tremendous impacts in Asia²:

- **Agriculture, Food and Water Security.** Crop yields and water availability are projected to decrease. Together with discouraged use of carbon fertilization, the Asian population faces the risk of hunger and water scarcity;
- **Marine and Coastal Ecosystems.** Coastal areas, especially heavily-populated megadelta regions in South, East and Southeast Asia, will be at greatest risk due to increased flooding from the sea and, in some megadeltas, flooding from the rivers;
- **Sustainable Development.** Climate change is projected to increase the pressure on developing countries to achieve sustainable development as they balance environmental protection with economic goals of urbanization and industrialization.
- **Health.** Endemic morbidity and mortality due to diarrheal diseases are expected to rise in East, South and Southeast Asia. Floods and droughts caused by projected changes in the hydrological cycle are expected to bring about water-borne diseases such as diarrhea.

As weather and climatic patterns are altered, Asia, which covers four climatic zones (i.e. boreal, arid and semi-arid, tropical and temperate) will experience in varying degrees the impacts of climate change. For countries whose geographical location makes them prone to natural disasters and whose developing economies place many communities in a state of poverty, the issue of climate-related disasters is crucial.

In many parts of Southeast Asia, poor communities are always the most vulnerable to natural disasters because they live in high-risk upland or coastal areas and are heavily dependent on natural resources for their livelihood. Their homes, incomes, and food and water supplies are less resilient to the impacts of disasters, and they typically do not have savings or any insurance to help them recover in the aftermath of a calamity.

The Philippines, as a tropical country, has been noted to experience stronger and more frequent typhoons, heavier rainfalls, and severe droughts. Government financial and human resources are stretched thin during natural calamities, so that there are fewer services that the poor can rely on. The Philippine National Disaster Coordinating Council (NDCC) reports that on the average, the damage brought by natural calamities costs up to 0.5% of the country’s Gross Domestic Product (GDP) or about PhP15 billion (USD320 million) a year³.

² Intergovernmental Panel on Climate Change (IPCC). 2007. *IPCC Fourth Assessment Report: Climate Change 2007*. http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf accessed Dec. 10, 2008.

³ Based on 2006 Data from the National Economic Development Authority (NEDA)

Researchers now point to the need for an ***equitable or pro-poor program for climate change adaptation*** that focuses on supporting the assets of the poor communities so they can develop mechanisms to cope with the impacts⁴.

The Response: Community Innovations for Climate Change Adaptation

As its first step in responding to the call for climate change adaptation, the iBoP Asia Project partnered with the Philippine Office of Christian Aid in organizing a forum with the theme, *Coping with Climate Change Risks: Innovations for Community Adaptation to Climate-Related Disasters* held last March 4 and 5, 2009. Gathering participants composed of scientists, policymakers, community innovators, and academic leaders, the forum sparked a series of interesting and engaging discussions on the role of science and technology (S&T) and innovation in providing opportunities for and addressing the challenges of climate change adaptation (CCA). There has been an increasing realization among various sectors that CCA should be undertaken in tandem with disaster risk reduction (DRR) – DRR focusing on addressing present/existing risks, and CCA focusing on understanding the changing climate trends and addressing the risks posed by these uncertainties.

The Forum served as a venue - and therefore was instrumental - in bringing to the fore innovations for CCA that were developed by and/or for local Philippine communities. Notable were the rainwater harvesting tanks developed by the Kahublagan Sang Panimalay Foundation in Iloilo that ensures the supply of drinking and irrigation water; the design of a disaster-resilient schoolhouse, harnessing the strength of bamboos, that won a competition sponsored by the Green Architecture Movement⁵; the emergency food pack consisting of processed vegetables and instant soup that was developed by the Panay Rural Development Center in Iloilo; the emergency SIM packs for mobile phones distributed by the provincial government of Albay, Bicol to local barangay officials to facilitate monitoring and dissemination of warnings; and the submergence-tolerant rice variety that was introduced by the Philippine Rice Research Institute in a small community in Siay, Zamboanga Sibugay. These community innovations showed a clear interplay of three (3) elements – *science, innovation/practice, and policy*– that created an enabling environment for local communities to address their own unique vulnerabilities to climate change. Empowering communities to develop and adopt such innovations is critical to building up CCA efforts, particularly in developing countries.

⁴ Yohe, Gary, Ian Burton, Saleemul Huq and Mark Rosegrant. 2007. *Climate Change: pro-poor adaptation, risk management and mitigation strategies*. 2020 Focus Brief on the World's Poor and Hungry People. IFPRI. http://www.ifpri.org/2020Chinaconference/pdf/beijingbrief_rosegrant.pdf

⁵ Green Architecture Movement is a focus project locally initiated by the United Architects of the Philippines (UAP). Its mission is to promote and incorporate the use of green building practices in the built environment and raise its level of awareness among the public

Challenges to CCA

However, apart from highlighting successful cases of community innovations for adapting to climate change, the discussions during the forum also surfaced five (5) major challenges that still need to be addressed in the three (3) enabling areas of science, innovation/practice and policy:

- a) There is a need to **bridge the gap between traditional knowledge and emerging scientific knowledge** for adapting to climate change. This is because certain local and traditional indigenous practices carry with them grains of practical wisdom that effectively work for and meet squarely the needs of the communities that use them.
- b) **Knowledge and technology transfer** that is cost-effective is also needed. Successful adaptation projects and technologies mostly introduced by donor agencies should be brought to other communities. With scarcity of resources, academic institutions can serve as a vehicle for replicating, in a cost-effective manner, projects and technologies to ensure greater benefits.
- c) By its very nature, the impact of climate change is site-specific. At the community level, people living in rural, urban, coastal, upland, or lowland areas may experience climate change impacts in very different ways. In pursuing adaptation projects, communities can benefit from the use of indigenous resources (for food, medicine, infrastructure materials, and other needs) that are easily accessible and available to them.
- d) Policy is a major factor that drives processes and how things are done both at the macro (global/regional) and micro (national/local) levels. Though there are existing local government efforts on CCA, **policymakers are challenged to develop and promote an incentive system that encourages the development and adoption of community innovations for CCA, and create an environment that fosters social entrepreneurship in local communities** (promoting and marketing their innovative products and services for adoption/replication in other areas).

The Way Forward

The iBoP Asia Project hopes to ultimately contribute to improving the lives of those in the BoP through the following: a) generating and/or documenting knowledge regarding S&T innovations for the BoP and promoting awareness and appreciation of these innovations to accelerate their use and application for the benefit of poor communities ; b) build research capacities that will produce the needed evidence that BoP as a concept and as a strategy works; and, c) influence research agenda and policy agenda (of public sector research councils, academic and research institutions, and governments in SEA).

iBoP Asia will also run an online forum on community innovations on climate change adaptation that aims to: a) draw out more undocumented community adaptation practices, particularly how those in the BoP in climate-risk areas in Southeast Asia think about, adopt, innovate, or practice adaptation; b) provide a platform for generating further discussion on

innovations on climate change adaptation; and, (c) communicate these successful innovations to a wider audience.

It will also facilitate the creation of a network of research councils to help promote innovations in the region and serve as a rich pool of knowledge, experience, and expertise that can further lead to innovations for poor communities.