

COMPLETION REPORT

Comparative Studies on Best Practices of Local Government Units in the Philippines and Japan to Effectively Lower Carbon Emissions as Strategies for Climate Change Mitigation and Adaptation

Dr. David Leonides T. Yap (+2)

Professor

School of Urban and Regional Planning

University of the Philippines

The study set out to document best practices of local government units in the Philippines and Japan to effectively lower carbon emissions as strategies for climate change mitigation and adaptation.

At the outset, the study looked into programs initiated by government agencies (top-bottom approach). For example, on renewable energy and efficient use of energy, Japan, to compensate for its dependence on coal energy, has developed manufacturing processes “digital system” to ensure that energy is used very efficiently. The Philippines still relies heavily on coal and oil as energy sources. Renewable energy constitutes a mere 2% of its energy sources. The Philippines however is finding ways to adapt to solar energy. For example, solar powered plants are being built in areas that do not have ready access to electricity like in Paluan municipality in Occidental Mindoro where a 5-hectare, 6-megawatt microgrid was built. Another climate change mitigating measure is a waste-to-energy (WTE) plant in Quezon City where methane gas is collected from wastes disposed in a dumpsite to generate electricity. The Philippine government announced its plan to construct similar plants in other dumpsites in the country. This facility is different from the WTE facilities constructed in Japan such as the Shin-Moji zero-emission facility in Kitakyushu where wastes collected from households are burnt to generate steam to run turbines which in turn generate electricity.

During the study, the researchers have come to realize that to ensure the sustainability of programs, decisions to adopt and implement programs on climate change mitigation and adaptation must be made at the community level. Urban planners see this as a bottom-up approach compared to the usual top-bottom approach. **This approach ensures that a community becomes resilient**, a very important paradigm in the area of climate change mitigation and adaptation.

For disaster preparedness, an example of a good practice is in Kuroshio in Kochi Prefecture, where disaster resilient communities called *bosai* were organized. Programs include strategically locating storehouses with supplies where people can go to during disasters, education on disaster prevention, and organizing senior high school student groups to assist community members during evacuation. Another example is in Onogawa in Miyagi Prefecture where residential areas were relocated to higher elevations (25 meters above sea level or masl) followed by commercial facilities at a lower elevation (4 masl) and fishing facilities close to coastal areas. The new plan is a response to the March 2011 earthquake and tsunami. The Philippines can learn from the

Japanese *bosai*. Presently, the Philippines promotes a community-based disaster risk management (CBDRM) program. This is a form of participatory risk assessment that fosters a culture of preparedness and mitigation among members of a community. The program allows communities to identify their vulnerabilities and create disaster risk reduction plans to address these vulnerabilities. In the Philippines, it has been demonstrated that to be successful, the activity must be led by the affected communities. It is however important that local governments provide necessary facilities such as storehouses with supplies that communities can use during emergency situations similar to what Japan did. Regarding zoning, the Philippines like Japan, has designated areas near coastal areas as no-build zones to protect residential areas against storm surges and tsunamis.

The best practices documented recognize the importance of research by scientists and members of the academe. Results of such studies are transmitted to national government agencies and related organizations which in turn communicate these to local government and groups such as non-government organizations or non-profit organizations. **The information is then cascaded down to communities through community-based activities using information and education campaigns (IEC) as well as capability building programs aimed at transforming communities into resilient communities.**

In all best practices studied, a change in a community's outlook has been observed, i.e. community members realize the importance of the new scientific information, understand how the new situation affects their daily lives, and prepare plans and programs to cope with and adapt to the changes. It has also been observed that communities can further strengthen their capabilities through networking with support groups such as local government agencies, neighboring communities and other organizations.

Results of the research may be presented in a conference on best practices on climate change mitigation and adaptation in the future.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

A part of the research was the Master's Thesis of Ms. Faith T. Dumaligan (Research Collaborator) which was completed and submitted to the University of the Philippines in June 2017. The title of her thesis is "Developing a Tool to Measure and Monitor Carbon Storage for Use in Planning Green Spaces in Urban Areas: the Case of Antipolo City Proper." Currently, an article is being prepared.

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)