

Addressing Climate Change and Disaster Risk Reduction through ICT and EU Assistance: The Case of Philippine Local Governance

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Abstract

Developing countries are gravely challenged by the adverse effects of climate change and natural disasters. The Philippines is considered as one of the most vulnerable and disaster-prone countries in the world. The European Union (EU) as a development partner extends support to the Philippines on climate change. While there are global and national initiatives to take action on these issues, the challenge is how local governments can engage communities to address these environmental threats. The paper poses the following questions: (1) What initiatives did the Philippine national government undertake to address climate change and disaster risk reduction and management (DRRM) in the Philippines? (2) What assistance does the EU provide to the Philippines in tackling climate change? (3) In what ways is information and communications (ICT) used by local governments as a mechanism to engage their constituents in dealing with climate change and natural disasters? Documentary analysis of Philippine laws on ICT, climate change, and disaster risk reduction and management are employed to determine the policy framework of the Philippines as a case. Desktop research is undertaken to evaluate the content of selected local government websites on disaster management and to identify the forms of EU technical assistance to the Philippines on climate change. While national policies exist to deal with climate change and disaster management, initiatives may take a backseat given the current pandemic.

Keywords: climate change, disaster risk reduction and management, Philippines, information & communications technology, local governance, EU assistance

1. Introduction

The World Risk Index in 2020 ranks the Philippines as the 9th country in the world that is most at risk when it comes to natural calamities. This is already considered as an improvement over its previous ranking of 3rd from 2015 to 2018 which can be attributed to an increase in the country's adaptive capacity over the years. Nevertheless, due to its geographic location, it is a country that is still highly vulnerable to extreme weather and climate-related events. With more frequent and stronger typhoons, crop productivity is disrupted, rice production is jeopardized, warming oceans lead to shortage of fish catch, thereby affecting food resources. The Philippines accounts for 0.3% of global carbon emission but bears the brunt of climate change effects. Climate change is projected to reduce long-term economic growth in the Philippines by 0.02 percent per year, which equates to a 3.8-percent reduction in gross domestic product (GDP) in 2050 (Rosegrant et al, 2015, p.5).

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Central to the discussion is the concept of governance which is referred to as “the interaction of government entities with civil society, corporate sector, and political parties in order to craft state policy, implement programs, projects, and activities, and monitor and evaluate these so as to improve policy formulation or implementation” (Institute of Politics and Governance, n.d., p.10). Good governance, characterized by accountability, transparency, efficiency and inclusiveness, is particularly important at the local level, where governments interact with citizens and communities on a daily basis. (United Cities and Local Governments, n.d.). International partners, such as funding institutions and donor agencies, also play a vital role in governance with their resource inputs for policy implementation.

Imam et al (2017) proposed a governance framework for ICT use in climate change adaptation that emphasizes the role of national governments to build energy infrastructure in collaboration with development organizations, local governments, and the private sector. A development orientation and efficiency in identifying community needs are vital (Imam, 2017, p.106). The contribution of ICTs to climate change processes involves linking resources with institutions and structures to create capabilities, thereby enhancing resilience (Ospina & Heeks, 2010). Successful disaster risk reduction practices at the local level need to incorporate essential elements such as, institutional and administrative framework, financing and resources, multi-hazard risk assessment, training, education and public awareness (Amaratunga et al, 2018). Ssekamatte (2018) underscores the need for monitoring and evaluation which is “not adequately visible in climate change mitigation and adaptation interventions in developing nations” (p. 9).

It is in this light that this paper outlines the Philippine government’s initiatives such as, laws and policies guiding government actions to address climate change and disaster risk reduction and management. This paper also looks into EU assistance in tackling climate change; as well as the ways by which selected local government units (LGUs) use online platforms in handling climate change and disaster preparedness.

An evaluation of ways that Desk top research and documentary analysis of Philippine laws on ICT, climate change and DRRM have been undertaken. A content analysis of selected local government websites is made to ascertain the extent to which ICT is used as a tool to engage constituents on climate change and disaster adaptation.

2. National Initiatives

Strategies to deal with climate change and natural disasters have been put in place and strengthened by the Philippine government since 2009. As a foundation for climate change policies, the Climate Change Act of 2009 (Republic Act No. 9729) was established to integrate climate change in the crafting of development plans and programs. The law paved the way for the creation of a national Climate Change Commission to evaluate and monitor plans across all sectors and levels of government.

The National Framework Strategy on Climate Change from 2010-22 was also formulated to ensure that communities develop adaptive capacities to mitigate the effects of climate change. It also aims to make natural ecosystems resilient and sustainable. To support this, a National Climate Change Action Plan was created in 2011 up until 2028. It emphasizes food security, water sufficiency, ecological and environmental stability, human security,

climate-friendly industries and services, sustainable energy and knowledge and capacity development as areas to be prioritized, particularly targeting the marginalized sector in public financing. Local governments are tasked to design and implement local climate change action plans to increase community resiliency. Trainings are also conducted to assist local governments in climate change action planning.

Another major initiative is the enactment of the Philippine Disaster Risk Reduction and Management Act of 2010 (Republic Act 10121) which incorporates disaster risk reduction and management in national and local development plans. Moreover, the National Disaster Risk Reduction and Management Council (NDRRMC) was institutionalized to oversee national and local, public and private sector disaster preparedness programs. Funding for disaster preparedness and mitigation programs comes from the national budget and LGU internal revenue allotment. National agencies are also mandated to provide technical and financial assistance for local climate change plans.

The integration of ICT in Philippine governance was also adopted to promote transparency and efficiency in the delivery of public services. The E-Government Masterplan 2022 provides the framework to attain the digital transformation of government through infrastructure development and capacity-building measures. It lays out a whole-of-government approach in ensuring transparent online citizen-centered services. This initiative was supported by the National Government Portal (www.gov.ph) which resulted in the development of national and local government websites as platforms for information sharing and citizen engagement.

3. EU Assistance to the Philippines on Environment and Climate Action

Development partner contributions' have played an important role in piloting initiatives and supporting investments to assist the government in developing climate actions at the central and local levels. (World Bank, 2010, p. 134). Most interventions focused on capacity building, policy advocacy, and awareness-raising and technology adoption, notably at the local level. (World Bank, 2010, p.133). Development partner support on climate adaptation and disaster mitigation in the Philippines center on the environment and energy sectors to support activities on renewable sources and energy conservation.

The European Union (EU) is a significant partner in development assistance to Southeast Asian countries, particularly to the Philippines. Part of EU's engagement to promote climate adaptation is the Cities and Climate Change (CICLASIA) program with "the goal to support the preparation of urban projects taking into consideration environmental sustainability as well as resilience to the effects of climate change" (Delegation of the European Union to the Philippines, 2017). The EU has allotted 5.2 million euros from the period of March 2018-February 2022 for this initiative.

The Access to Sustainable Energy Programme is another facility through which the EU has allotted 63.6 million euros in grant funding to the Philippines for green recovery (IISD, 2020). This program, in collaboration with the Philippine Department of Energy, supports the country's move to promote renewable energy and energy efficiency.

The EU's development assistance for the energy sector is in line with the Philippines' climate change commitment to lessen its dependence on coal and gas for power

generation. It also helps boost clean energy investments from both the public and private sectors.

4. Disaster Preparedness and Local Government Websites

National efforts on disaster risk reduction and management are cascaded to local government units. Utilizing electronic governance for disaster preparedness is key to local government efforts in implementing programs on the community level. Through local government websites, constituents are provided information on these initiatives.

Among the areas hardly hit by recent typhoons such as Typhoons Goni and Vamco in 2020 are the cities of Manila, Marikina, and Pasig which are located in the National Capital Region; Bulacan in Central Luzon (Region 3); and Naga in the Bicol Region (Region 5). It is within this purview that the websites of these LGUs are examined.

A look at the city of Manila's website (<http://www.manila.gov.ph/>), shows that the disaster risk management is listed under the city government's services. The mission and vision of the Manila Disaster Risk Reduction and Management Office (MDRRMO) to promote disaster resiliency and public awareness of stakeholders and citizens of Manila is indicated.

Prior to the COVID-19 crisis, a weather forecast application was found in the website. It is currently replaced by information on emergency government and hospital hotlines in advisories. Out of 16 items on related news from January to June 2021 in the disaster risk and management page, only five pertained to fogging, misting clean-up operations of the MDRRMO. Other items are not related to disaster management activities are mostly about the COVID-19 pandemic such as, case updates and vaccination schedules including the food distribution program as a pandemic response.

For Marikina City (<http://marikina.gov.ph>), this flood-prone city's website shows a live rainfall and water monitoring system prior to the pandemic. At present, pandemic-related content is mostly seen in the website namely, information on vaccine registration, and the schedule of distributing COVID-19 financial assistance to low-income residents. The website now has CCTV live updates of the Marikina water level which is crucial as severe flooding occurs whenever a typhoon hits the area. Out of 13 news featured in the website, nine are pandemic-related and the rest are on payments of real estate and business taxes.

For Pasig City (<http://pasigcity.gov.ph>), no data is registered on the website concerning climate change and disaster management from January to June 2021. The current available content is on contact tracing, update on COVID-19 cases, and online payment of taxes.

Bulacan's website (<http://bulacan.gov.ph>), for its part, has typhoon tracking, weather updates, hazard maps, flood markers including detailed information on tide schedules, status of dams, and river and flooding situation. Content is generated from the community-based flood mitigation and management program supported by the Provincial Disaster Risk Reduction Management Council.

Naga city's website (<http://naga.gov.ph>) is replete with information about the city and its transparency initiatives. Under programs and projects, there is mention of a rehabilitation project of the Naga River which is a main waterway in the locality. This project includes a greenway development for riverbanks and public pathways. A typhoon tracking link also is found on the website covering images, warnings, and news reports from various online

sources.

The table below shows a summary of the current content of the selected LGUs' websites during the pandemic.

Table 1: Disaster Preparedness and Content of Selected Local Government Websites

LGU Website	Pandemic Period (January to June 2021)
City of Manila http://www.manila.gov.ph/	Manila Disaster Risk Reduction and Management Office (MDRRMO) mission-vision Weather forecast replaced by information on emergency government and hospital hotlines, COVID-19 case updates, vaccination schedules, food distribution program
Marikina City http://marikina.gov.ph	Water level live updates COVID-19 vaccine registration, schedule of financial assistance to low-income residents
Pasig City http://pasigcity.gov.ph	No DRRM or climate change data in website COVID-19 contact tracing, cases, online payment of taxes
Bulacan Province http://bulacan.gov.ph	Typhoon tracking, weather updates, hazard maps, tide schedules, status of dams, river and flooding situation
Naga City http://naga.gov.ph	Naga River rehabilitation project Typhoon tracking link with images, warnings, and news reports from online sources

5. Assessing Climate Change and DRRM Governance Measures

The move for the Philippines to transition to a green economy is where EU support is significant. The EU's development assistance can help scale up renewable energy and energy efficiency thereby, reducing the local electricity sector's emissions which can mitigate climate change. Moreover, the assistance can help generate "green" investments from the private sector, as well.

While DRRM is incorporated in the programs of local governments as seen in the websites of selected LGUs, it is overshadowed by activities on the current pandemic. About 80 to 90 per cent of website content since the start of 2021 pertain to COVID-19 response. This includes updates on the number of COVID-19 cases in the locality, contact tracing, vaccination schedules and procedures, and financial assistance to low-income families.

The websites' content also shows a uni-directional transmission of information from government to citizens characteristic of the "government as platform" design. This type of ICT-facilitated co-production initiative views government's role to equip citizens with data needed to make informed decisions (Linders, 2012). Except for functions that allow citizens to obtain news updates by email and SMS, a mechanism for the constituents to give feedback and share information to local authorities has not yet been developed.

The Philippines has an internet penetration rate of 73% and mobile subscription reaching nearly 66% of its 109 million population in 2020. This looks promising compared to other developing countries which have lower internet and mobile penetration rates. However, the effective use of ICT is problematic among low-income communities and vulnerable groups.

Given the ongoing COVID-19 pandemic, government attention and resources have shifted from climate change and disaster management to pandemic response as the priority. The surge in Covid-19 cases presents additional challenges. Nevertheless, the risks entailed when natural disasters happen make it necessary for local governments to have adequate mechanisms to handle environmental hazards besides the pandemic.

6. Conclusion

The EU's engagement on the Philippines centers on building the latter's adaptive capacity against climate change impacts in the form of more efficient energy production. Laws and policies to bolster climate change action and disaster management in the Philippines have been put in place to ensure the reduction of environmental threats to the country. The use of ICT as a mechanism for this is also supported with an existing policy framework.

Involving the EU as an international development partner in addressing climate change shows the Philippines' adoption of multi-level governance. Vertical coordination for capacity building is particularly seen in the linkages forged between the EU and the national government; and the national government vis-à-vis local governments. Financing for local climate initiatives remains an issue. This is where support from international partners and national government agencies come in to ensure climate resilience in the local levels.

The findings also show that good governance principles are applied in local government programs pertaining to DRRM and climate change. The use of ICT strengthens transparency and accountability. The posting of emergency hotlines and relevant information and in the websites are examples of these. Links to other online news sources and updates on typhoon and flooding situations found in the websites also indicate responsiveness to the informational needs of constituents.

However, the way ICT platforms are utilized by local governments indicate that much is left to be desired in engaging constituents in a more collaborative manner to address climate change and disaster risks. The usage is limited to information dissemination. Questions are also raised as to how the digitally excluded such as, the urban poor, the elderly, and other vulnerable groups can utilize ICT to access information crucial to their survival whenever a natural disaster occurs.

Applying inclusion as a guiding principle in local governance appears to be a challenge. It is imperative to elicit active participation from community stakeholders as they can provide valuable inputs in the crafting of an effective local climate response.

Efforts on climate change and DRRM have become less prioritized given the more pressing concerns related to the pandemic. This does not augur well for the future's sustainability. The challenge is for the national and local governments to move towards a more strategic, long-term orientation which requires attention on environment hazards in a post-pandemic world.

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