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Localizing Disaster Risk Reduction and Climate Change Adaptation in Planners' and Decision Makers' Agenda: Technical Comprehensive Model, Quezon City, Philippines

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Abstract

Super Typhoon Haiyan devastated portions of Southeast Asia, particularly the Philippines on November 8, 2013. It caused unprecedented destruction but it also brought about new awareness for urgent and immediate action, not only on integrating Disaster Risk Management in our daily functions but also on addressing Climate Change variation impacts. In response, various stakeholders have made numerous efforts in reducing the country's risk through crafting laws, statutes and government issuances. However, adaptive and coping capacities of Local Government Units remain very weak, and information on how to assess expected risk and incorporate it in developing local risk sensitive physical and development plans are still not part of the planners' and decision makers' agenda. The main objective of this study is to develop a technical Risk Sensitive Comprehensive Land Use and Development Planning Model to mainstream scientific-based risk assessment into the Quezon City Government (the pilot urban area) planners' and decision makers' agenda. The Model also comes with a toolkit with eight (8) Guideposts in operationalizing the Model. It is an effective tool and is a foundation to support in achieving imminent 2020 targets of the Sendai Framework, Paris Agreement and the Sustainable Development Goals up to 2030.

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1. Introduction

The sharp increase in natural and extreme weather related disasters and their associated impacts have resulted in human sufferings and economic losses in the Philippines during the 20th century. Extreme weather events like Super Typhoon Haiyan that devastated the country on November 8, 2013 was a wakeup call for urgent and immediate action, not only on integrating Disaster Risk Management (DRM), but also in addressing Climate Change (CC) variation impacts [1] in cities and municipalities. Further, these impacts also necessitate adjustments in the urban planning paradigm. Fundamentally, to make resilient urban environment for future generations, the institution and personnel's (e.g. planners and decision makers) coping and adaptive capacity building need to be established and pursued towards Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) [2]. To deal with the above challenges and growing concern of failure in response to the negative impacts of natural and climate-related disasters' risk, a technical Risk Sensitive Comprehensive Land Use and Development Planning (RSCLUDP) Model with Coaching Tool Box (CTB) is developed and its workability assessed using Quezon City (QC), a highly urbanized city, as a the pilot Local Government Unit (LGU). The research make use of primary and secondary research designs, international and local concepts of achieving resilience through expanding personal and institutional coping and adaptive capacities, and Jurisprudence for developing local DRR and Climate Change Adaptation and Mitigation (CCAM) action plans. In addition, Suitability, Feasibility and Acceptability (SFA) test was also conducted to check the workability of the Model. The results revealed an overall workability of the Model with the highest rank of five (5) meaning the Model is very suitable, feasible and acceptable. [3].

2. Scope of Literature Review

2.1. Coping and Adaptive Capacities' Concepts

There exists an important difference between coping and adaptive capacities. Coping is typically used to refer to *ex post* actions, while adaptation is normally associated with *ex ante* actions. This implies that coping capacity also refers to the ability to react and reduce the adverse effects of experienced hazards, whereas adaptive capacity refers to the ability to anticipate and transform structures, functions, or organizations to better survive any hazards [4]. In other words, the capacity to cope does not infer the capacity to adapt [5]. This research used coping capacity for DRR to decrease or minimize vulnerability towards four thematic areas (i.e., Disaster Preparedness, Disaster Response, Prevention and Mitigation, and Rehabilitation and Recovery) recognized under the National Disaster Risk Reduction Management Plan (NDRRMP) 2011 – 2028 [6]. Furthermore, the adaptive capacity is used in the context of CCA to improve adaptive capacity against vulnerability towards the seven strategy areas (i.e., Food Security, Water Sufficiency, Ecological Environmental Stability, Human Security, Climate Smart Industries and Services, Sustainable Energy, and Knowledge and Capacity Development) as prioritized under the National Climate Change Action Plan (NCCAP) 2011 – 2028 [7].

2.2. Institutional and Personnel Adaptive and Coping Capacities Assessment

Local institutions and personnel's coping and adaptive capacities form the basis for assessment of disaster resilience. Local institutions play a critical role in supporting adaptation. Thus, expanding the institutional and personnel's coping and adaptive capacities are the integral parts in creating resilient societies [8]. The Adaptive Capacity Wheel (ACW) by Gupta et al (2010) was also considered in identifying institutional assessment parameters [9].

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