

ASSESSING THE INFLUENCE OF FACTORS ASSOCIATED WITH THE VARIATIONS IN
THE ABILITY TO MAKE PROGRESS IN CLIMATE-SENSITIVE LAND-USE PLANNING
OF THE MUNICIPALITIES IN METRO MANILA, PHILIPPINES:
AN EARTH SYSTEM GOVERNANCE CASE STUDY

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ABSTRACT

This research generally assessed the influence of factors associated the variations in the ability to make progress in climate-sensitive land-use planning (CSLUP) of municipalities in Metro Manila, Philippines within the theoretical framework of Earth System Governance (ESG) and the Disaster Risk Reduction (DRR) concept of institutional adaptive capacity (AC). Specifically, this research has preliminarily validated ESG-AC framework—a conceptual framework modified in this research from Bierman et al. (2010), Ostom (2011), and Zollo et al. (2013)—that hypothesizes that: the differing abilities of municipalities to make progress in Climate Change Adaptation (CCA), through CSLUP, is respectively determined by their specific institutional AC conditions of architecture, agency, adaptiveness, accountability and legitimacy, and allocation and access (hereinafter the 5A-Hypotheses).

Accordingly, in validating the 5A-Hypotheses, this research conducted a case study in Metro Manila, Philippines that determined and explained the association of the progress made by 17 municipalities to make their land-use plans into climate-sensitive land-use plans, with 12 recurring institutional factors in the literature—that were respectively organized according to the 5A-Hypotheses. This case study particularly determined and explained the association of the 12 factors to the 17 Metro Manila municipalities' progress in CSLUP through the collection and

analysis of quantitative and qualitative data from multiple sources. Quantitative data analysis applied multiple correspondence analysis to the numerical opinions regarding each municipality's level of progress in CSLUP and levels of the 12 factors, which were gathered after administering semi-close-ended surveys to targeted Municipal Officials. The design of these semi-close-ended surveys incorporated the ESG-AC Scorecard—a UNDP-GEF scorecard approach-based tool developed specially for this research to assess quantitatively the influence of the 12 factors—organized according to the 5A-Hypotheses—to a municipality's progress in CSLUP (UNDP-GEF, 2003 & 2010). Meanwhile, qualitative analysis applied narrative analysis to the verbal opinions and textual evidences regarding each municipality's level of progress in CSLUP and levels of the 12 factors, which were gathered after interviewing targeted Municipal and National Government Officials, and reviewing additional relevant documents. The semi-structured interview was mainly designed to get contextual information about the indicated ratings (score levels) by the surveyed Municipal Officials on each of their municipality's level of progress in CSLUP and levels of the 12 factors. The document review, for its part, was intended to provide supplementary textual information on the indicated ratings (score levels) by the surveyed Municipal Officials on each of their municipality's level of progress in CSLUP and levels of the 12 factors. Both semi-structure interviews and document review, nevertheless, were done to elaborate and clarify the indicated ratings (score levels) by the surveyed Municipal Officials on each of their municipality's level of progress in CSLUP and levels of the 12 factors.

In view of the ESG-AC framework, results of this research found that, out of all the 12 factors, the factors *climate leadership* (an agency condition), *mandate enforcement* (an architecture condition), and *information* (an allocation & access condition), all together build the institutional AC of the 17 municipalities—as one land-use governance system—to make progress

in CSLUP. In other words, the factors *climate leadership*, *mandate enforcement* and *information*, influence the variations in the ability to make progress in CSLUP of municipalities in Metro Manila, Philippines. Importantly, *climate leadership* was also found to be the strongest determining (or distinguishing) factor influencing a Metro Manila municipality's progress in CSLUP, followed by *mandate enforcement*, and last by *information*. As illustrated in this research: *climate leadership* is a strong determinant of a Metro Manila municipality's progress in CSLUP because Mayors, through the exercise of their legally acquired decision-making power, can decide whether or not if their municipality will undertake CCA activities, such as CSLUP. *Mandate enforcement*, meanwhile, is a strong determinant of a Metro Manila municipality's progress in CSLUP, because the national government has been very effective in exercising their supervisory power over municipalities, to build both implicitly and explicitly the political will for CCA of Metro Manila Mayors, through the use of positive and negative enforcement mechanisms—incentives and disincentives—in encouraging their municipalities to undertake CCA activities, including CSLUP, for the fulfillment of their legal roles and authority over undertaking CCA activities in *RA9729* and *RA10121*. Finally, *information* is a strong determinant, because the national government, through its attached agencies' enforcement of the legal mandate of municipalities to undertake CCA activities, have been able to provide Metro Manila municipalities with useable climate change risk information that they can use in conducting a climate change risk assessment—the first requirement in mainstreaming CCA into LUP.

Having identified that *climate leadership* is the key determinant of a municipality's ability to make progress in CSLUP, it is therefore concluded that an agency condition—in the form of *climate leadership*—is what largely determines the varying abilities of the municipalities in

Metro Manila to make progress in CSLUP; in other words: the level of progress of the 17 municipalities as one land-use governance system in Metro Manila is mainly a function of the level an agency condition manifested by *climate leadership*. More importantly, it is also concluded that *climate leadership*—as an agency condition—is a catalyst in building the institutional AC of a municipality to make progress in CSLUP; that is: it creates an institutional condition within a municipality that enables it to make progress in CSLUP more easily, and thereby to some extent, more quickly as well. Nevertheless, since this research is limited only to the 17 municipalities in Metro Manila, Philippines, this research’s conclusions serve only as an illustrative—rather than a representative—validation of the 5A-Hypotheses. Future research must be done for a more representative validation of the 5A-Hypotheses. For now, to the lead author’s knowledge, the conclusions of this research will be useful to inform future research and policy reforms in CSLUP worldwide, as this research is one of the first to deductively assess institutional factors associated with the variations in the ability of institutions to make progress in the local governance of land-use for climate change adaptation in a developing country.

Key words: urban planning, adaptive capacity, earth system governance, climate change adaptation, disaster risk reduction