



## Assessing the feasibility of resettlement as a climate change adaptation strategy for informal settlements in Metro Manila, Philippines



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### ABSTRACT

The existing resettlement infrastructure for informal settlements in Manila, Philippines provide an opportunity to facilitate future climate change adaptation in the city. This research assesses the feasibility of using resettlement as climate change adaptation (CCA) in Manila using the 5 Principles for climate-related resettlement developed by Tadgell, Doberstein and Mortsch (2017 forthcoming). Data from key informant interviews (n=27) with resettlement, CCA, and DRR professionals, addresses the topic in three phases. First, it investigates the role of resettlement in existing CCA and DRR projects to understand if movement from environmental hazards is already occurring. Next, the research gathers interviewee perspectives on the applicability of the 5 Principles in relation to Manila's existing resettlement landscape, and identifies any amendments or foreseen challenges to them. Finally, it explores the perceptions of resettlement, DRR, and CCA actors on the feasibility of employing resettlement as CCA in Manila, including any challenges that may impede the strategy. The findings suggest that existing resettlement infrastructure could be enhanced to provide effective CCA as identified by the 5 Principles, such as initiatives with in-city relocation sites and vertical housing. Poverty is the greatest challenge to implementing any successful adaptation strategy, including resettlement. Thus, poverty reduction should the foundation of CCA planning for some urban poor communities in Manila.

## 1. Introduction

Coastal areas across Asia are vulnerable to the impacts of climate change, including increased riverine, coastal, and urban flooding relating to sea level rise and intensified extreme weather [24]. Paired with rapid urbanization and dense city configuration, these climate risks will likely cause widespread damage to urban infrastructure, livelihoods, and settlements [24]. Most vulnerable are the urban poor who occupy land with high exposure to environmental threats. They are often located in informal settlements that commonly lack the infrastructure, resources, and services for coping with environmental hazards and disasters. As climate change intensifies, it will challenge the sustainability of existing adaptations. As-risk populations will have fewer adaptation options that are affordable and can protect livelihoods and lives effectively, suggesting that in order to protect these vulnerable communities, increasingly vigorous forms of climate change adaptation (CCA) must be explored, including managed retreat and, more specifically, resettlement.

### 1.1. Resettlement as an adaptation option

Resettlement is a component of *retreat*, one of three broad adaptation options to sea level rise presented in the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (the others being *protect* and *accommodate*) [7]. It is practiced, documented, and studied across three broad fields: hazard and natural disasters (e.g. climate change, floods, hurricanes, earthquakes) (see: [28,31]; Badri, Asgary, Eftekhari and Levi, 2006; [5], social upheaval (e.g. land appropriation, conflict) (see: [21,29]), and economic development (e.g. dam construction, natural resource extraction) (see: [16,2,26]). This literature provides insights, guidance, and lessons regarding practice, as well as a clear understanding of the social, economic, and environmental costs of poorly planned resettlement.

From the literature, it is understood that the resettlement process can be profoundly disruptive to communities and their livelihoods. For example, the Impoverishment Risks and Reconstruction Model, which measures the impacts of resettlement, identifies eight impoverishment risks to communities as a result of resettlement: landlessness; jobless-

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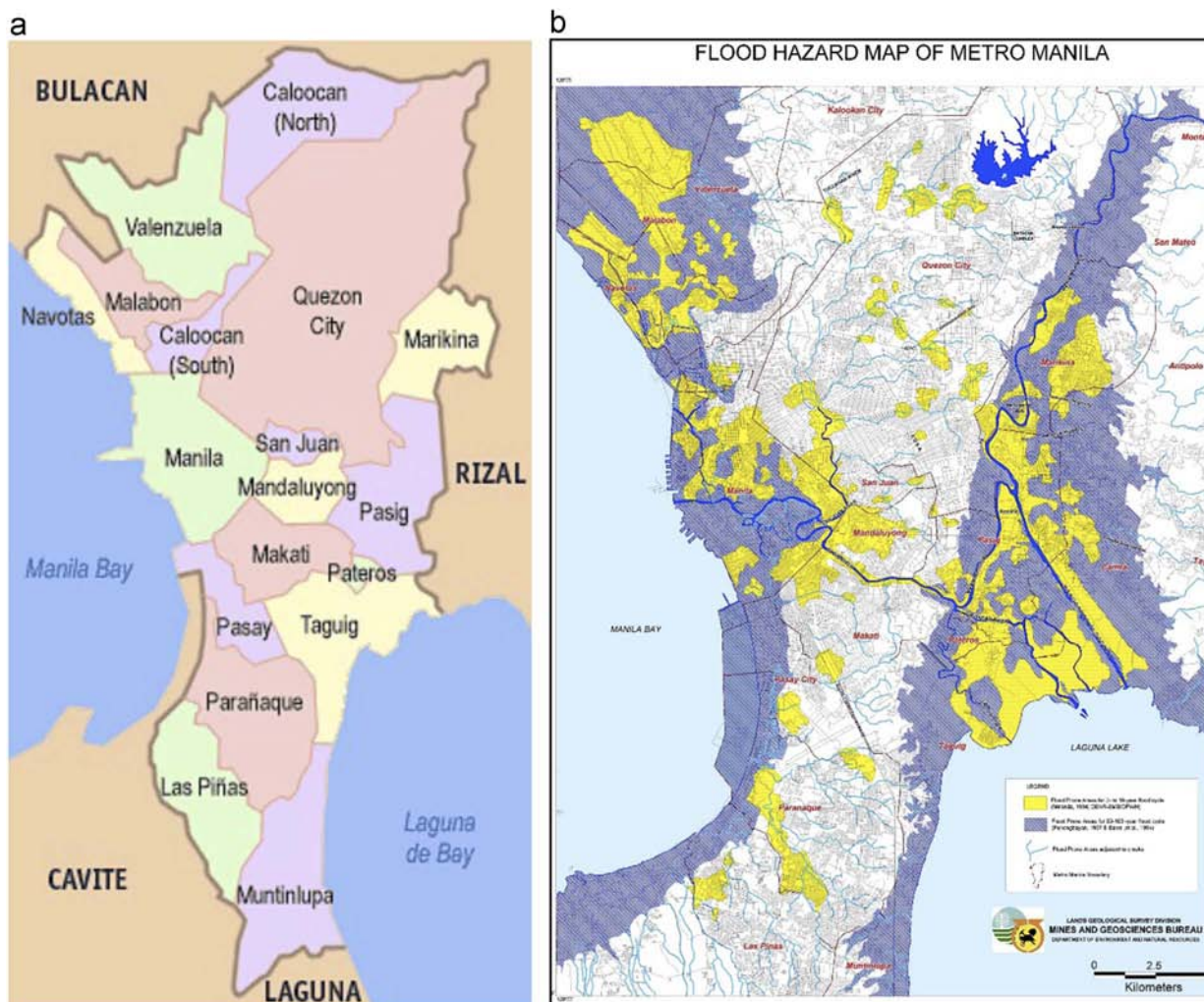


Fig. 1. a. The 16 Cities and 1 Municipality that compose Metro Manila. b. Flood hazard map of Metro Manila. Source: [17]; <http://mapssite.blogspot.ca/2008/06/map-manila.html> (city map)

ness; homelessness; marginalization; declines in health; food insecurity; loss of shared resource access; and loss of social networks [8]. Furthermore, resettlement projects that fail to consider community agency, needs, and preferences can cause long-term hardship and poverty for relocating communities while negatively impacting surrounding environments [15,41,4]. These consequences of resettlement, reveal why many authors suggest resettlement should be a last resort for climate change, hazard, and development planning [14,19,30,31,40].

There are many components to consider before identifying resettlement as appropriate adaptation for a community, including group and individual tolerances of risk and the effectiveness of other protection or accommodation adaptation options [41]. This paper does not discuss resettlement as climate change adaptation lightly, and understands that there are many challenges with the practice as it stands today. Yet there is confidence among institutions that resettlement as adaptation can succeed if it is appropriately planned, financed, and implemented [15,38]. Internationally recognized climate change and resettlement guidelines are encouraging states to anticipate and plan for migration in their adaptation strategies [19,30]; UNHCR, 2014). Additionally, migration is now acknowledged in the United Nations Framework Convention on Climate Change (UNFCCC) Cancun Adaptation Framework list of adaptation strategies [3]. Organizations employing the strategy continue to upgrade and improve policy and practice over time. For example, the World Bank has acknowledged its shortcomings in planning and implementing resettlement and has

released an action plan to improve operations in nine critical areas, including funding for environmental and social risk management [42].

Moving forward, the questions are not aimed at eliminating resettlement, but instead are asking ‘how can we improve the process and ensure mutual gains?’ This opens a window for further research into articulating “what is well-planned and facilitated resettlement”, and “how it can be used for future threats, including climate change?” A set of 5 Principles for climate-related resettlement were developed by [37] to provide useful guidance on how resettlement can be improved, adjusted or enhanced for CCA purposes for low income and informal communities in less developed nations.

### 1.2. The 5 principles for climate-related resettlement

Five principles for climate-related resettlement were distilled from recommended best practices in over 70 resettlement articles and guidelines, creating an overarching picture of ‘well-planned and facilitated’ resettlement in response to climate change threats. The 5 Principles outline best practice for climate-related resettlement specifically in the context of informal settlements in less developed nations. This framework can guide assessment of the appropriateness and feasibility of employing managed retreat in less developed nations.

The principles include: proactive, communications and participation, permanent, compensation and incentives, and livelihood protection. *Proactive* resettlement seeks to identify, educate, and begin negotiations with vulnerable communities regarding resettlement

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