

Adaptive Urban Governance to Climate Change Risk in Indonesia: Cross-Comparative Study

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In the last decade, there has been a considerable increase in the frequency of hydro-meteorological disasters (floods, sea level rise, water scarcity) causing severe impacts and disruptions to on-going development in several major cities in Indonesia. Many studies showed evidences that climate change is the key driver of the increasing of climate hazards in the archipelago through changing weather pattern, altering precipitation pattern and rising sea surface. As its cities are predicted to grow more vulnerable, there have been concerns on how the local entities have capacity to deal with risk induced by climate change. Some adaptation initiatives have been established by community-based organization, local government institutions and non-governmental organizations (NGOs) in order to increase urban resilience. However, there is still limited comprehensive understanding about how well adaptive strategies have been applied by those institutions. This paper is aimed to review and compare climate change adaptation strategies applied by urban governances in four different cities of three island regions in Indonesia, including Balikpapan (Eastern Borneo), Bandar Lampung (Southern Sumatera), Indramayu (Western Java), and Semarang (Central Java). Comparative analysis is used to examine their climate change adaptation strategies based on goals, climate change science basis used, observed direct and indirect impact, adaptation measures, and involvement of stakeholders. The data was collected from the combination of institutional survey by conducting semi-structural interview to selected key-informants representing the local institutions and literature study to gather climate change policies and regulations in those cities. The results show that climate change adaptation strategies have been incorporated into some of the cities' plan and the governments' annual budgets, such as in Bandar Lampung and Semarang. Both cities involved multi-stakeholders to create the adaptation strategies, including NGOs, universities, private sectors, and the cities governments agencies through shared learning dialogue. The increasing awareness of climate change issues has motivated them to incorporate climate change adaptation through their sectoral problems priorities. For instance, Bandar Lampung commits to improve current solid waste management in order to create healthier environment for community as a preventive measure from exacerbating vector-borne disease. On the other side, local institutions awareness in Indramayu and Balikpapan to climate change issues are still low that adaptation activities are rarely to be found in their programs. They do not have any mechanism among its agencies to tackle climate change threats in their region. Nevertheless, they have potential programs and plans that could be promoted as the adaptation strategies at city level, such a river dredging program to prevent flood in Indramayu floodplain although some of them tend to be responsive and not driven by a long-term consideration. This study concludes that in the era of decentralized governance structure in Indonesia, some cities have initiated climate change adaptation strategies, depending on each governance characteristics, through a combination of structural and non-structural measurements. Combined with national or international supports, multi-

stakeholders' involvement is the key to increase climate change awareness and to allocate resources needed to adapt. The next challenge is to integrate these local level initiatives with national strategies in order to achieve 'good' adaptation to climate change impacts.