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Building Climate Resilience in Southeast Asian Secondary Cities

Article Southeast Asia is urbanizing rapidly, with cities in the region growing five times faster than in other regions of the world. As in most of Asia, urban growth in the region in the coming decades is projected to occur mainly in smaller urban centres. These cities, however are often highly vulnerable to the risks posed by climate change, particularly floods, droughts, and sea-level rise, because of their geographical locations. Many are located along coasts or in river basins and deltas.

27. November 2018 by Danny Marks

View of Khon Kaen, Thailand, one example of secondary cities in Southeast Asia – Creator: Stefan Maurer.

Southeast Asia is urbanizing rapidly, with cities in the region growing five times faster than in other regions of the world (International Centre for Environmental Management 2015). As in most of Asia, urban growth in the region in the coming decades is projected to occur mainly in smaller urban centres. These cities, however are often highly vulnerable to the risks posed by climate change, particularly floods, droughts, and sea-level rise, because of their geographical locations. Many are located along coasts or in river basins and deltas. But they are also highly vulnerable because, as the 2011 floods in the region around Bangkok illustrated, these risks are compounded by the ecological changes produced by rapid and often unplanned urbanisation, such as land use change, the filling in of canals, and land subsidence, and by the limited capacity of municipal and provincial governments to sufficiently mitigate these risks in secondary cities in the region (Marks 2015).

At the same time, vulnerability to climate risks within these cities is not uniform because the production of urban space unevenly spreads the vulnerability to disasters. As David Harvey argues, urbanisation is a constantly-changing and contested political-economic process of exclusion and marginalization, creating new landscapes of power. Political-economic processes are contributing to climate risks unequally affecting small cities in the region. Socioeconomic inequality is rising in the region (Asian Development Bank 2012). Historically and currently, power structures are highly unequal and autocratic, and there is limited political space for reform. Consequently, the poor (those living below their country's national poverty line) often suffer the most from the effects of climate change due to their limited assets, the locations where they live, lack of access to power, and the state's failure to protect them. In contrast, elites have often been able to use the state to accumulate social surpluses, such as floodwalls and green spaces, in areas where they live and work at the expense of others (Collins 2010).

However, most policymakers and researchers have focused on addressing vulnerability of the poor to climate change in mega-cities in the region. Consequently, limited research exists on the ways in which the governance of climate risks affects secondary cities' poor and what can be done to reduce their vulnerability (e.g., Friend et al. 2014, Garschagen 2015). The Urban Climate Resilience in

Southeast Asia (UCRSEA) Project <https://ucrsea.ca/> sought to help fill this gap, focusing on eight secondary cities in four countries: Cambodia, Myanmar, Thailand, and Vietnam (see Figure 1).

A number of UCRSEA project members conducted research in these cities. Here I summarise the findings of research conducted in four cities: (1) a study of drought in Khon Kaen, Thailand conducted by myself; (2) a study of flooding in Bago, Myanmar conducted by Graham Reeder of the University of York Osgoode Hall Law School; (3) a study of climate change policy implementation in Lao, Cai, Vietnam conducted by Gwenn Pulliat of the French National Centre for Scientific Research; and (4) a study of drought in Koh Kong, Cambodia conducted by Jason Horlings as part of his master's thesis <https://ruor.uottawa.ca/handle/10393/36815> at the University of Ottawa.

Figure 1: Location of selected cities for UCRSEA project – Creator: Danny Marks.

Urban Planning

Effective urban planning is necessary to build climate resilience.[1] It can strengthen natural buffers to act as a defence for cities as well as ensures development occurs in less climate-risky areas (Mitchell, Enemark, and van der Molen 2015). However, for a number of reasons, planning is quite weak in secondary cities in these four countries. In countries, such as Vietnam, planning decisions are made or endorsed at the central government level, without effective cross-sector consultation and discussion (DiGregorio et al. 2016). Another problem is the limited capacity of urban planners at the local level. In Myanmar, Local Development Affairs Offices manage second-tier cities without any guidance from the national level. However, the staff typically have no background in urban planning. There are only 30 planners in the entire country. Consequently, the Myanmar government has universalised plans without considering specificities, such as climate risks for each city (Roberts 2018). Third, in a number of cities, there are either no land use plans or the incentives are not strong enough for municipalities to curb land use change. For example, in Thailand, municipalities are not incentivised enough to properly enforce land use plans, such as green zones (Friend et al. 2014). In the city of Khon Kaen, an official admitted that the absence of regulations enabled rapid land use change and significantly reduced green spaces (Beringer et al. 2018). In Cambodia, similarly there are very few urban plans or regulations in the entire country. What plans or regulations do exist, such as the Phnom Penh Master Plan, lag behind the actual pace of development (Baker et al. 2017).

Another factor weakening urban planning in these countries is the increasing economic, social, and financial integration of Southeast Asia <https://theaseanpost.com/index.php/article/success-and-challenges-within-asean-integration-0> which means that secondary cities will be subjected to increasing socio-economic pressures. Unless municipal governments have enough resources and expertise to address the various challenges brought on by regional integration, the major cities could be overwhelmed by the pressure to make the country more economically competitive. The economic imperative of neoliberal globalisation will intensify inequalities (Roberts 2018) but also reduce the incentive to curb land use change and consider environmental risks when conducting urban planning. Also, competition between cities to move up their countries' urban hierarchy, such as in Vietnam, will also push them to expand territorially, sometimes into areas with higher climate risks (DiGregorio 2015).

Disaster governance

Another set of challenges weaken disaster governance in these secondary cities. First, disaster governance is fragmented both horizontally and vertically. For example, in Vietnam and Thailand, departments whose actions affect disaster risk mostly act autonomously without sharing information or coordinating with each other (Marks and Lebel 2016, Phuong, Biesbroek, and Wals 2018). Garschagen found that in Vietnam's Can Tho City, flood strategies have not been properly devised because flooding "falls in between the compartmentalised responsibilities of the sectoral departments" (Garschagen 2015: 613). In Myanmar, the disaster

management plans of national level agencies are not clearly delineated and there are no disaster preparedness plans. Further, laws only prescribe the responsibilities of national and state governments, not those of agencies at the local level. Consequently, local agencies often respond ad hoc to disasters (Shirai et al. 2018). Another problem is the limited information of data needed to properly prepare and plan for disasters. For example, in Lao Cai, different agencies collect their own meteorological and other types of data without sharing it with each other, causing gaps and inconsistencies to arise (Friend et al. 2014). Second, local authorities, such as those in Cambodia, lack sufficient resources and knowledge to respond to climate-related disasters (Va 2015). Third, there is a focus on emergency response and recovery rather than preparedness even though numerous studies confirm that preparedness policies are much more effective (Gilfillan 2018).

Bangkok Flood in November 2011 – Creator: EU ECHO.

Governance challenges to address climate risk in these cities

A number of similarities emerged between the secondary cities included in the UCRSEA framework. There is an inherent tension that municipalities of secondary cities in Southeast Asia face between development pressures and building climate resilience. Seeking to curb further sprawl in their countries' megacities, national leaders are pushing municipalities to create jobs and absorb population growth in their cities, including from rural migrants. This means that they must rapidly expand industries, residences, and services in the cities. However, at the same time, they are told to enact climate-resilient urban planning which would include preserving green space and forests, retreating from certain coastal areas, and giving more space for water in their cities. Aggravating this challenge, there is a time scale difference between these two priorities: the first one (growth and development) is seen as more urgent whereas the second (climate adaptation) is seen as more long-term. Consequently, when having to make trade-offs, municipalities often choose short-term growth at all costs. Further, similar to those in China (Marks 2010), Southeast Asian municipal leaders gain popularity and recognition from promoting economic growth, not curbing it. Changing incentive structures for municipalities would be necessary to overcome this gap.

The cases also reveal the limited accountability of local government leaders to their constituents. In some cases, this is because the poor are deemed unimportant voters or citisens. For example, in one small municipality in Khon Kaen Province, one reason the mayor has not provided water pipes to low-income residents is that those who voted for him are factory workers and shopping centres employees. According to interview data, the owners of these places told their employees to vote for the current mayor. Consequently, he does not feel any political pressure to help the poor based in other areas of the city. In other cases, this is because local residents have limited means to affect decision-making processes. In Lao Cai, Vietnam, farmers voiced their discontent about being forced to relocate so that the city can expand into previous-farmland. Without elections, residents have limited channels to affect decisions. Overall, these unaccountable political systems further aggravate the vulnerability of marginalised residents, such as the urban poor, migrants, and farmers.

The cases also reveal that climate risks are typically borne over-proportionally by poor, vulnerable and marginalised groups. In particular, evictions to clear space so that industrial, eco-tourism, and transportation projects can be built primarily benefit the middle-class and elite while further marginalizing the poor. For example, in Khon Kaen, the national government evicted hundreds of low-income residents to gain access for space dedicated for the construction of a planned high-speed railway (*The Isaan Record* 2017). Similarly, in Lao Cai, rice farmers' lands were seized to make way for large-scale projects and these farmers were given inadequate compensation. This also means that, as Marcus Taylor argues (2014), the urban resilience of some groups is often

achieved by reducing the resilience of others. In these cities, elite have benefitted from the efforts of marginalised groups who, due to limited power to negotiate terms of labour, are forced to work in precarious, low-paying jobs which limit their capacity to face climate shocks. In Khon Kaen, residents of low-income communities are paid minimum wage of 320 Baht ($US 9.70) or less which is inadequate for an individual to live a humble life or support his or her family. Consequently, they struggled to cope with droughts in 2015 and 2016 while the middle and upper classes hardly suffered. In Lao Cai, after their farmland was seized, many farmers sought unsuccessfully to find new livelihood sources. A local government official told us during an interview that in Koh Kong, Cambodia, during a drought, the poor suffered water cuts while a special economic zone, owned by a provincial elite, was able to use as much water as it needed.

The cases also show the challenges for urban resilience in secondary cities brought about by incomplete decentralisation. They reveal that local government agencies have been given limited budgets and unclear mandates by national governments to enact measures that could help build urban climate resilience. Moreover, there is conflict and tension between which agencies should be involved in disaster risk reduction, water management, and other measures, which affect adaptive capacity to climate risks. Also, the lack of coordination between agencies collecting meteorological and other date further weakens capacity to build urban climate resilience. Overall, the cases reveal that incomplete decentralisation, due to the retention of power and resources by central bureaucrats, alongside ministerial and sectoral fragmentation has undermined resilience and distributed climate risks unevenly. One reason that urban slum communities in smaller cities in Thailand lack access to water is that municipalities lack sufficient budgets to pay for water pipes. In Bago, Myanmar, where in 2015 heavy flooding arose, local and national government officials disagreed about which levels of government should take primary responsibility for flood risk reduction. Similarly, in Lao Cai, the implementation of climate adaptation policies is hampered by limited resources.

While certainly there are many disadvantages to being a secondary city in terms of building urban climate resilience, some advantages exist as well. There is still time to learn from previous mistakes. Limited land has already been urbanised when compared to that in mega-cities. Further, these cities are less locked into infrastructure, energy and governance systems, which makes it easier for them to make changes to become more climate resilient. Finally, due to their lower populations, smaller economies, and geographical distance from their country centres, there is less political interference from national government that can undermine governance, compared to that in mega-cities (e.g., Khon Kaen versus Bangkok). This also means that there is more freedom for these cities to experiment, which can result in increased climate resilience.

View of Mukdahan, Northeast Thailand – Creator: Danny Marks.

Given these aforementioned challenges, *what are the lessons for urban climate governance in secondary cities and proposed solutions?*

First, inter-agency and scalar fragmentation need to be reduced and urban land-use and water planning must be coordinated at numerous levels. Smaller agencies in different ministries could be merged together. Likewise, small local government units should be combined with larger ones.

Second, a better incentive structure is needed for different agencies to work together, such as monitoring coordination indicators or funding incentives for cooperation between agencies. In addition, it would be beneficial to improve the information flows and linkages between local communities and government agencies. Information between the two must be clarified, such as which areas will be set as flood zones and distinct warnings before droughts and water cuts will occur. Channels of communication must be more diffuse and wider, such as through mobile phone applications. For example, the warning system in Mae Sot Municipality in Thailand's Tak province, where communities have a LINE group, a mobile app for instant communications, to warn each other about flooding, can be used as a model.

Third, national-level disaster management agencies can play a greater role in strengthening local agencies in the area of disaster risk reduction. More funding should be set aside for the two to work together and more responsibility for disaster risk reduction actions should be given to local governments, along with promised support from these agencies. Increased evaluation of their performance is also needed.

Fourth, a single-command, one-size-fits-all system is not necessarily the best solution for urban climate governance because, such a system can make mistakes, unfairly distribute risks, and also each area has differing biophysical geographies. Instead, more participatory and cross-level decision-making to address climate change is needed.

Finally, secondary cities can learn from mistakes made by other cities in the region which responded to hydro-meteorological disasters by following the same land use patterns and building higher dykes. Instead, they should consider modelling the strategies of more progressive and inclusive cities in Netherlands, US, UK and elsewhere have done by greening public space and providing more space for water. Examples include Portland, Newcastle, and Rotterdam.

Overall, in Southeast Asian secondary cities, power structures and assets are still highly unequal and urbanisation has made those living in these cities, particularly the poor, more vulnerable to climate risks. Consequently, urban governance practices need to be transformed so that they are more sustainable and so that power and the benefits of urbanisation are shared more equitably. A potential entry point to positively changing power structures could be the political will and promised financing arising from the Paris Agreement and countries' commitments under their National Adaptation Plans.

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[1] UCRSEA defines <https://ucrsea.ca/resources/glossary/#1512676075206-dfe48b96-9487> resilience as the capacity of a system, community or society to cope with a hazardous event, trend or disturbance and respond in ways that maintain its essential function in a timely and efficient manner.
