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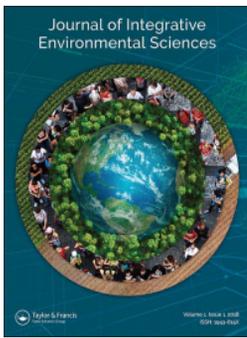
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WORLD RISK AND ADAPTATION FUTURES (FUTURE TRENDS IN EXPOSURE AND VULNERABILITY INFLUENCING CLIMATE CHANGE ADAPTATION)  OPEN ACCESS  Check for updates

## Urban climate governance in Southeast Asian small and mid-sized cities: undermining resilience and distributing risks unevenly

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### ABSTRACT

Secondary cities are home to most of the world's urban populations vulnerable to climate change, yet researchers and policymakers have devoted less attention to them than large and megacities. To help address this gap, this paper explores the relationship between incomplete decentralized governance, climate change, and urban resilience. It does through the case studies of secondary cities of Cambodia, Myanmar, Thailand, and Vietnam. Secondary cities are of importance because they are the fastest growing cities in the Global South but also because they have weaker capacity to address climate risks. Through these case studies, the paper draws comparisons between the different cases to look at the linkages between decentralization and urban resilience in secondary cities. Overall, it argues that climate governance, due to the retention of power and resources by central bureaucrats along with fragmented governance structures, and misaligned incentive structures which prioritize economic growth over climate protection have undermined resilience building and contributed to the uneven distribution of climate risks in these cities.

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### KEYWORDS

Incomplete decentralization; secondary cities; urban climate resilience; mainland Southeast Asia; fragmented urban governance; urban political ecology

## 1. Introduction

Climate change poses great challenges in Southeast Asia. It is expected to particularly affect areas that are currently undergoing rapid urbanization, such as the main deltas. Indeed, the urban transition is especially rapid in the region: Southeast Asian cities are growing demographically five times faster than average in OECD countries (International Centre for Environmental Management 2015). Megacities, such as Bangkok, Jakarta or Ho Chi Minh City, have attracted rising scrutiny regarding their exposure and responses to climate change, from scholars and planners alike. However, in the Greater Mekong Subregion (GMS), urban growth is expected to primarily occur in small and mid-sized cities (Danier and Garschagen 2019). These secondary cities, which comprise urban centres that have

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a regional influence without having a national leadership, and small urban centres are exposed to various effects of climate change, particularly floods, droughts, heatwaves, and sea-level rise (Birkmann et al. 2016), but often have less resources to address these risks than larger cities do. Therefore, they are highly vulnerable to climate change. Their vulnerability may even be increased as a result of the ecological changes that derive from current urbanization processes, such as unplanned urbanization on green spaces, filling of canals, and land subsidence (Marks 2015; Minderhoud et al. 2017).

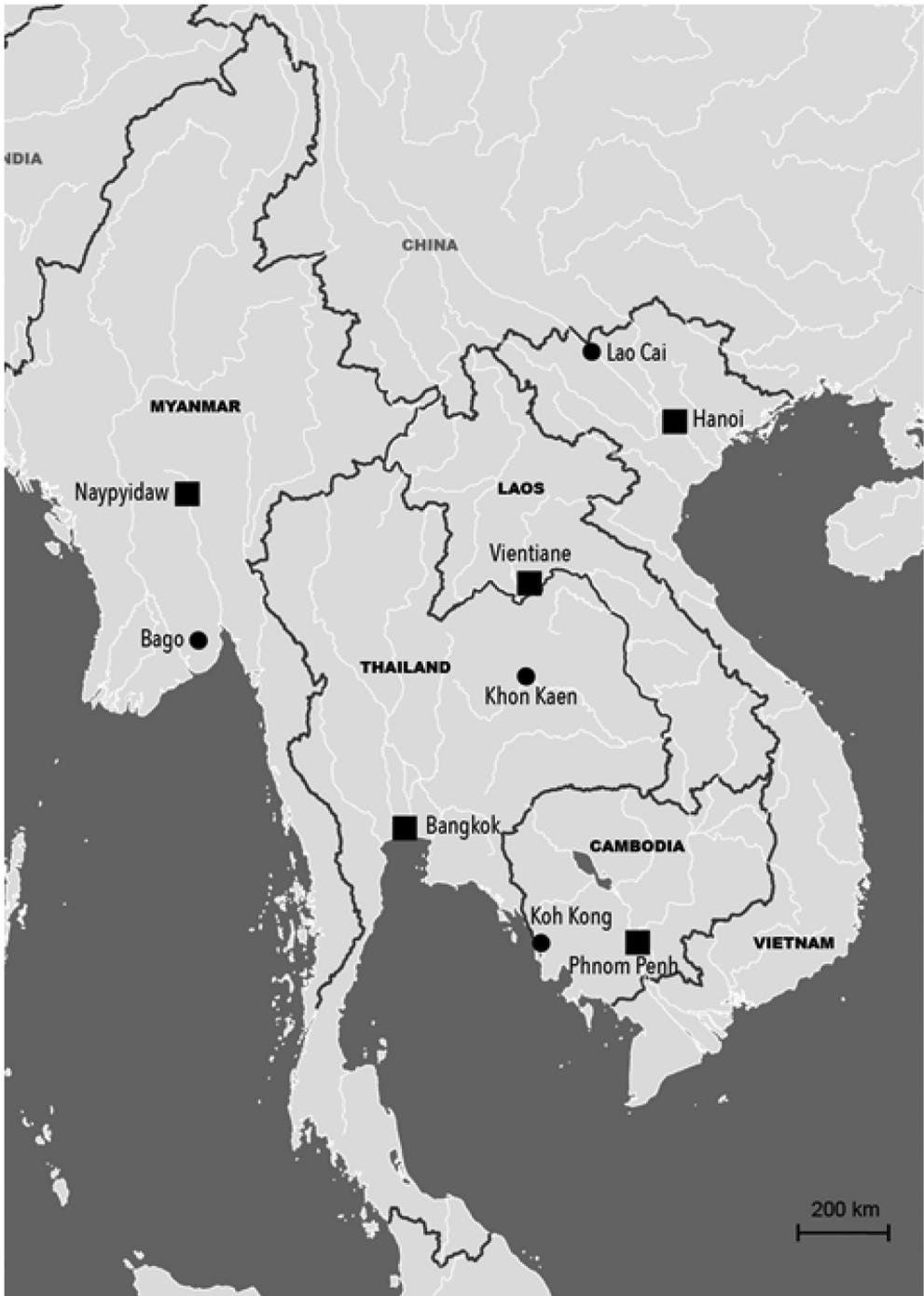
How do regional and local authorities manage these risks? This question is related to their capacities to take both spontaneous and planned climate actions. Urban and development planning as well as disaster risk reduction plans are key to build urban climate resilience, which can be defined as “the ability of an actor to cope with or adapt to hazard stress” (Pelling 2003, p. 48). Whereas in the past resilience was seen to be an outcome that could be measured, now many academics and practitioners view it as a dynamic ability or a process (Béné et al. 2012). Scholars believe building it should remain a goal of urban planners because this approach “highlight[s] the influence of multi-scale complex systems (such as water, energy, and food) on which urban populations depend” (Friend and Moench 2013, p. 99).

Over the last decades, local authorities have seemingly gained more power over these competencies as a result of notable decentralization processes in the GMS countries (Malesky and Hutchinson 2016). This process allows local authorities to better match their actions to their needs at a very local scale – as climate risks are not evenly spread over their territories. In this paper, we aim to examine what local authorities do to build urban climate resilience, and discuss what is at stake as a result of these risks management practices. We seek to answer this question by presenting case studies from four secondary cities across the Greater Mekong Subregion, analysing how small cities deal with climate resilience building. We then discuss how decentralization has affected residents’ climate risk. To do this, we first present the four case studies to illustrate the ways in which urban planning and disaster risk reduction are managed in secondary cities in the GMS. We next review the literature on the linkages between decentralization and urban climate resilience and the current state of decentralization in four of the GMS’s five countries (Thailand, Vietnam, Myanmar and Cambodia). We then discuss similar challenges or bottlenecks to improving urban climate resilience in these cities.

## 2. Material and methods

This research draws on four field researches focused on four secondary cities of the Greater Mekong Subregion: Khon Kaen (Thailand), Lao Cai (Vietnam), Bago (Myanmar) and Koh Kong (Cambodia) (Figure 1). The fieldworks in Thailand and Vietnam were conducted by the authors of this paper within the UCRSEA (Urban Climate Resilience in South-East Asia) research programme in 2017, while the field researches in Myanmar and Cambodia were conducted by two graduate students involved in the same program and the findings presented in this paper are derived from their work: a book chapter written by Graham Reeder (2019) on Bago, and Jason Horling’s Master’s thesis (2017) on Koh Kong.

All these cities are examples of small and mid-sized cities where usual climate-related hazards occur regularly. Some of them benefit from a rising attention from national authorities, which intend to fuel their development, such as Lao Cai that is expected to become



**Figure 1.** Map showing locations of the four case studies (created by authors).

a major trade hub between China and Vietnam and Koh Kong where the Special Economic Zone is expected to take advantage of the proximity with the Thai border. But they all exemplify ordinary secondary cities in the context of rapid economic development that characterizes the Greater Mekong Subregion. Similarly, some have recently suffered from major disasters, such as Bago with a major flood in 2015. But in general, they face average climate risks that spread over the region (specifically flood and drought), and therefore illustrate how these usual risks are governed and managed on a daily basis at the local scale.

The main data were gathered through qualitative interviews with various informants: residents, local and regional authorities, and civil society representatives. In Khon Kaen, the first author interviewed 26 residents of two low-income communities; the questions dealt with their socioeconomic background, their access to water, and effects of the drought. 9 key informants from local and provincial governments, civil society and among slum community leaders completed this research. In Lao Cai, the second author first conducted a set of 23 interviews focused on officials from province, city, and local people's committees and local community leaders, dealing with environmental issues, urban planning and risk management. With two research assistants, she then conducted a second set consists of 45 interviews with residents of two wards, covering their daily experience of the changes in their environment. The findings for the Bago and Koh Kong case studies are derived from a book chapter written by Graham Reeder (2019) and Jason Horling's PhD thesis (2017). All these studies were conducted within the same research project, Urban Climate Resilience in Southeast Asia (UCRSEA).

These interviews were conducted using a variety of research perspectives and frameworks. Nonetheless, all the fieldworks directly engaged with environmental governance and the political dimension of climate resilience building, as well as its social and spatial outcomes: this is why all the data is derived from interviews with both officials, planners and other key informants and with local residents from different parts of each city (see Table 1). The current paper draws on this interview data to propose an original synthesis on this political dimension of climate resilience: we reconsider the data through the specific focus of governance and discuss it in the wider context of the Greater Mekong Subregion as a whole.

**Table 1.** Summary of methods used for the case studies.

	Bago, Myanmar	Khon Kaen, Thailand	Koh Kong, Cambodia	Lao Cai, Vietnam
Interviews with residents	10	26	35	45
Interviews with key informants: local authorities, community leaders, and NGOs	22	9	14	23
Date of field research	Feb 2017	March-April 2017	Sept-Dec 2016	July-Aug 2017
Main topics of interviews	Flood management, disaster response policy, coping strategies	Drought, access to water, urban governance	Perception of environmental changes, livelihoods, environmental risks management	Perception of climate-related risks, daily management of risks, implementation of Climate Adaptation Action Plan

**Table 2.** Summary of four case studies.

	Bago, Myanmar	Khon Kaen, Thailand	Koh Kong, Cambodia	Lao Cai, Vietnam
Population (city)	300,000	150,000	29,000	112,000
Population (province)	5,000,000	1,800,000	126,000	730,000
Main environmental hazards	Flood, drought	Drought, floods	Flood, coastal erosion	Flood and flash flood, landslide, heat wave

### 3. An investigation of climate-related hazards in GMS secondary cities and the urban governance of these hazards

How are hazards and climate-related events managed at the local scale? How does it impact resilience building in the four countries? In this section, we present the results from investigations in four secondary cities, one in each country of the GMS (see Table 2).

#### 3.1. Drought in Khon Kaen, Thailand

Khon Kaen, home to 150,000 persons, is one of the four main cities in Northeast Thailand (known as Isaan). The region is well-known for the drought that hits the area periodically (Naivinit et al. 2008). A consequence is the hardship in accessing tap water for some communities. It is specifically the case for low-income communities. In the outskirts of the city, located at the urban fringe, several communities have been settled by day workers, construction workers and other people engaged in low-wage jobs. Rop Muang 1 and Lao Na Dee 12 are two of these communities. Both are located along the railway tracks. However, in Rop Muang 1, the residents have yet to negotiate a lease, and therefore currently do not have a legal right to live there, while in Lao Na Dee 12 the community has obtained a legal lease from the State Railway of Thailand (SRT), who owns the land. It results in a differentiated access to water: in the first case, most residents lack access to tap water, while in the second case, a main water pipe was set up in 2016. Nonetheless, as of May 2017, 80% residents still lacked access to tap water because they could not afford the one-time fee that is required by the Provincial Water Authority (PWA) to instal the water metre and therefore provide tap water. The PWA reminds that residents must carry a temporary housing registration to obtain access to utilities from state agencies – as such, most residents in the studied areas did not have access to tap water (Marks 2019b).

Hence, most residents rely on jugs of drinking water that they buy, and use pumped groundwater for their non-drinking water needs. However, the droughts of 2015 and 2016 (Wright 2016) dried up groundwaters and consequently dramatically affected the communities' access to water. The interviewees mentioned several coping strategies, from reducing consumption to buying water from other places. Overall, it badly affected their living conditions and livelihoods. For instance, a household mentioned that they had to spend more than 25% of their income on water during the drought.

This event has highlighted how droughts have disproportionately affected poor communities, depriving them from access to basic utilities. It has shed light on social inequalities that derive from climate hazards, which are expected to increase in the future. However, the municipalities have yet to address this issue. A municipal officer explained the lack of water provisioning to these communities by the lack of budget at the municipal scale dedicated to the installation of water pipes to run through these

communities and the mayor's prioritization of the interests of big businesses over those of poor. Moreover, several respondents from municipalities have highlighted the absence of a climate action plan that would help prepare for future droughts and other climate hazards, hindering the residents' capacity to cope with these shocks. Incomplete decentralization has affected these communities' vulnerability to drought because of the limited budget and capacity the municipalities have to help these communities.

### **3.2. Water shortages in Koh Kong, Cambodia**

In 2016, the same drought which struck Thailand also affected Cambodia. Residents of Koh Kong, a small city of 29,000 people in a larger province home to 126,000 in Cambodia, experienced water cuts between April-June. These cuts occurred between four to five times, mostly lasting one to two days but at times lasting a whole week. Sometimes authorities informed residents of the cuts, but other times there was no warning. People responded to the water cuts by buying water from local businesses but this costs significantly more: piped water is \$US 0.40 per cubic metre whereas buying water from a business costs \$US 1 for 10 litres (Horlings 2017).

While the drought was the short-term factor for the cuts, long-term factors increase tensions between demand and supply of water: the demographic growth, due to rural-to-urban migrations, as well as the economic changes increase the demand. The expansion of the tourism sector comes with a rising water demand, but the most noticeable change comes from the special economic zone (SEZ) that was designated a SEZ in 2006 but only in 2012 did large factories start operating (ibid.).

However, during the 2016 drought, the SEZ never experienced any shortage. The distribution of water during this period therefore seems uneven across the city and actors. A hypothesis as to why such a distribution occurred lies in the fact that the owner of the SEZ and the operator of the provincial water supply is the same company, LYP Group. This company also owns a fisheries port, and operates a toll-bridge connecting the SEZ to the city. Therefore, it can use its situation to favour the SEZ in the water distribution, and its owner's power limits the ability of local authorities to intervene against these choices. The company hence used its power to unevenly distribute water and create unnatural shortages.

This case shows how the local power structures can undermine the ability of local authority to manage and cope with the consequences of natural hazards, especially in terms of fair social and spatial distribution of such consequences.

### **3.3. Flooding in Bago, Myanmar**

From July to September 2015, Myanmar experienced heavy flooding that led to deaths and an estimated 1 million displaced persons. The secondary city of Bago, a regional capital of 300,000 people located in the country's main southern coast, was hit hard. While government officials expect the city to flood annual, the magnitude of the 2015 floods were perceived to be extraordinary (Moon 2018).

While state officials all concurred that state agencies should seek to manage floods, they disagreed about which level of government (national, regional, or local) should take leadership on this and to what degree agencies the government should work to reduce risk and initiate land-use reforms. A regional official stated:

*"The responsibility is with the regional government but it shouldn't be. It should be with the union government – they are the ones with the most money to prepare, or they should just give us the money and we can do it but they don't. They tell us we must prepare but we don't have enough money to do it"* (quoted in Reeder 2019, p. 115)

Bago municipal officials asserted that land-use change was as a major cause behind the severe flooding. However, although these same officials are seeking to restore wetlands and reforest surrounding areas, thus have they either ignored or lack the power to curb land-use change and mitigate climate change impacts such as sea-level rise. Another factor behind the floods, according to them, was the poor quality of dykes which were deemed to be "old" and "leaky" and their inadequate maintenance. These officials blamed the central government for allocating insufficient funding to upgrade and maintain these dykes. Officials at all levels stated that there were no major initiatives in the Bago Region or in Myanmar overall to reduce the effects of deforestation on flooding (Reeder 2019). Hence, the governance of the 2015 floods illustrated the lack of financial and administrative capacity at the local level to better prepare for major events, and the lack of coordination to address future climate risks.

### **3.4. Climate adaptation in Lao Cai, Vietnam**

Lao Cai city, a secondary city with a population of 112,000 inhabitants (as of 2017) located in the northwestern part of Vietnam, benefits from an Action Plan to Respond to Climate Change since 2014. The city suffers various hazards, the most frequent ones being floods from the Red River and landslides. These hazards are expected to increase in frequency and intensity as a result of climate change. This is why the Lao Cai Province authorities acknowledge the need to address climate change and enhance the region's adaptive capacities.

However, the implementation of such policies remains partial. A reason for that is the deficiencies of environmental governance. For instance, the Action Plan was adopted at the city level; meanwhile, most respondents from the authorities of two investigated wards had never heard about it. Moreover, at the provincial and city scales, a specific office is in charge of environment-related questions (the Department of Natural Resources and the Environment and its lower-scale office). But at the ward level, no civil servant is specifically in charge of environmental issues, which are therefore managed by the Bureau for Land Use, the Disaster Management Authority, or the Bureau for Agriculture. Environmental issues thus may be less important in their daily activities when compared to their core duties. Additionally, constrained by limited budgets and competing priorities, environmental monitoring and climate policy advocacy at the local scale remain scarce.

Another factor limits the resilience building at the local scale: the under-enforcement of existing regulations. For instance, an environmental impact assessment is mandatory for large development projects, but an official involved in the assessment process declared that it has a very limited impact on the shape of these projects and that none of them would be rejected if its environmental impacts were high. The question of political ties and the need for economic growth at the local and city scales tend to undermine the climate adaptation and environmental goals. An interviewee attributed the lack of regulation enforcement to the high levels of "political interests behind" large-scale projects. He explained: "The big private companies have lots of influence, and money, and relationships with leaders, whether at the city level or the province level".

Therefore, the relationships between the local economic and political elites as well as their prioritization of economic development are an obstacle to enhance the enforcement of existing environmental regulations.

Hence, in a context where the central government intends to foster a large, modern city, the current environmental governance and the local power structures undermine the effective implementation of the climate adaptation plan.

#### **4. Local governance: what local authorities can do?**

The commonality of the four case studies lies on the difficulty for local authorities to efficiently plan their future climate resilience. A main factor that emerges from these studies is the lack of local ability to do so. While they are at the forefront of climate response, they lack financial and technical resources to do so. National authorities rely on the local scale to adequately respond to climate-related challenges, but the transfer of finances and competencies from upper level to lower level remains incomplete.

##### **4.1. Decentralization and urban climate resilience: literature review**

The linkages between decentralization and climate resilience has been discussed in the literature. A number of scholars argue that decentralized governance can improve urban climate resilience (Skidmore and Toya 2013; Faguet 2014; Homsy 2018)(Skidmore and Toya 2013; Faguet 2014; Homsy 2018). By decentralized governance, we mean “the restructuring or reorganization of authority so that there is a system of co-responsibility between institutions of governance at the central, regional and local levels” (UNDP 1999, p. 2). One reason for this argument is that decentralized governance is supposed to improve transparency, accountability, and participation level of citizens, particularly in vulnerable communities, and thus, better match services with needs of residents (Mehiriz and Gosselin 2016). Further, local governments are better-placed to respond to local climate risks, both geographically and politically, than national governments are because of their close proximity to those affected. Local governments have greater access to local information about climate risks, but also about local preferences and priorities (Tselios and Tompkins 2017), as well as local knowledge and resources to cope with and overcome climate events. Other authors argue that decentralization enables local governments to be more flexible and inclusive, both of which can help improve resilience (Bahadur and Thornton 2015).

At the same time, scholars have cautioned that decentralization is not a silver bullet. A study found that decentralization in many countries had not reduced the risk of disasters because of low level of local capacity, limited funding, poor accountability structures, and problems with coordination and communication (Scott and Tarazona 2011). One reason for a low level of local capacity is, compared to national governments, that local governments may not be able to attract as skilled and capable officials and leaders due to the smaller talent pool and lower salaries (Tselios and Tompkins 2017). Others found that decentralization can lead to problems such as regional inequities, spillovers, and negative externalities (Homsy 2018). Further, centralized governance structures can at times provide space for local priorities to be sufficiently addressed by higher levels of government (Bahadur and Thornton 2015)). Another problem is that local traps can occur due to an excessive focus on local perceptions. Knowledge and interests

can become barriers to utilizing solutions either from other locations or those which are available at higher levels of governance (Brown and Purcell 2005).

Nonetheless, a number of scholars have argued that the most effective and equitable form of governance is polycentric or “decentralization with coordination” (Pahl-Wostl et al. 2012). Additionally, the level of governing authority should match the scale of the problem (Berbés-Blázquez et al. 2017). Polycentrism also denotes many decision-making centres independent of each other but able to make mutual adjustments.

Following this thinking, a wave of decentralization began in the 1990s and spread globally, with almost every sizable county devolving some level of responsibility to lower levels of government. In developing countries, donors and multilateral banks pushed forward these programmes. There was “strong faith that decentralization was an elixir that would heal many of the ills of existing political structures” (Malesky and Hutchinson 2016, p. 126). Southeast Asian countries followed suit and decentralized, to varying degrees. The next subsections, however, show that decentralization has been incomplete in this region.

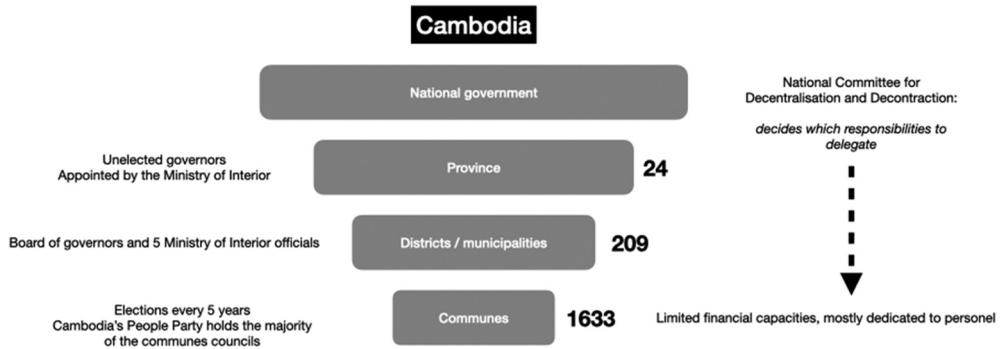
#### **4.2. Cambodia**

A unitary state, Cambodia is structured into three levels of sub-national administrations (see Figure 2): province (24), districts (209) which include 26 municipalities in urban areas, and communes (1,633). Each Province is headed by an unelected governor who is appointed by the Ministry of Interior (MOI). A board of governors as well as three to five MOI officials govern each district. Due to their limited fiscal capacity, districts do the bidding of the provincial and central governments (Eng and Ear 2016). At the commune level, starting in 1992, elections occur every five years to choose commune councilors. The Cambodian’s People Party (CPP) holds a majority in all of these councils (Eng 2016). Positively, these elections have improved relations between the public and the ruling party because it has enabled the CCP to better identify local needs and to distribute small-scale infrastructure projects. However, the lack of elections at the higher levels (province and district) means at these levels there is limited accountability to the population (Eng and Ear 2016).

Laws passed in 2001 and 2008 dictate that a number of administrative responsibilities should be delegated to the local level. However, which responsibilities are delegated is under the discretion of the National Committee for Decentralization and Deconcentration, which is headed by the MOI. National-level ministries have been reluctant to transfer most functions to the sub-national levels. Thus, municipalities and communes have had no administrative authority to create their own policies in areas such as health, land management, and water. Only a few functions have been transferred to municipalities, such as waste management (Eng and Ear 2016). While the country has granted fiscal responsibility to the local level, it has created a system where each commune and district receives a small budget – between US \$46,000 to \$132,000 annually – and 80% of this budget is devoted to personnel costs. Consequently, little money is left for local officials to use for local development. Compared to others who have initiated similar reforms, Cambodia has transferred the lowest percentage of the overall budget to local governments (ibid.).

Overall, international donors have pushed the national government to decentralize with the idea that this would lead to greater accountability and promote democracy. However, the Cambodian People’s Party (CPP), headed by long-serving Prime Minister Hung Sen, has devised and implemented the country’s decentralization in a way that has consolidated the party’s

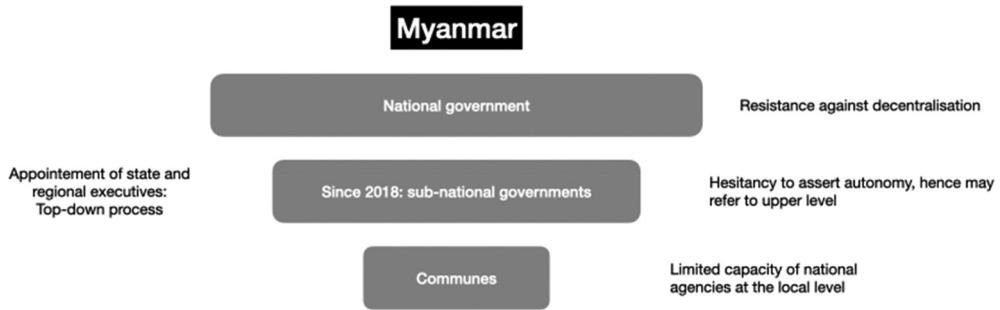
power and its informal patronage network (Eng 2016). Under this system, “power is highly unequal and personalized with authority firmly concentrated in the hands of a few powerful patrons who control decisions on appointments, discipline and resources for public offices” (Eng and Ear 2016, p. 213). The CPP sustains this network by exchanging benefits, such as jobs, rents, access to natural resources, and state budgets, in return for their loyalty to the party.



**Figure 2.** Decentralization governance structure in Cambodia.

### 4.3. Myanmar

While the recently-established seven state and seven regional governments have been given more autonomy to set their own policies, the state remains highly centralized (Figure 3). The 2008 Constitution mandated the creation of sub-national governments; however, their political powers and autonomy remain limited. The appointment of state and regional executives, including the Chief Minister, is conducted in a top-down process. Moreover, the vast majority of civil servants working at the state or regional level are those from Union ministries (Ninh and Arnold 2016). Many of these central-level bureaucrats have been resistant to decentralization. They are concerned that new sub-national policies will bring changes, do not trust their subordinates, and do not want to give up control of the policy process (Dahm 2016). At the same time, regional bureaucrats may be hesitant to assert their autonomy. As an example, an international donor set up a small grant project for the Mandalay Environmental Conservation Department (ECD) regional office, but the regional officials did not want to make decisions about the project and instead, asked for guidance from the central-level office (donor agency officer, personal communication, 26 June 2017). A final limitation is that many national-level agencies have a limited capacity at the sub-national level. For example, in Tanintharyi Region, the ECD Department has only a handful of staff, limited equipment, and a small budget. Similarly, the financial dimension of decentralization remains incomplete. The President and the Union Financial Commission annually review regional and state budgets: consequently, sub-national governments have limited freedom in the ways in which they can spend money (Ninh and Arnold 2016). A final limitation is that many national-level agencies have a limited capacity at the sub-national level. For example, in Tanintharyi Region, the ECD Department has only a handful of staff, limited equipment, and a small budget. The limited capacity of local government units means that it will be more difficult for them to monitor whether or not safeguards have been adequately put in place in Dawei and other secondary cities (ECD official, personal communication, 27 June 2017).



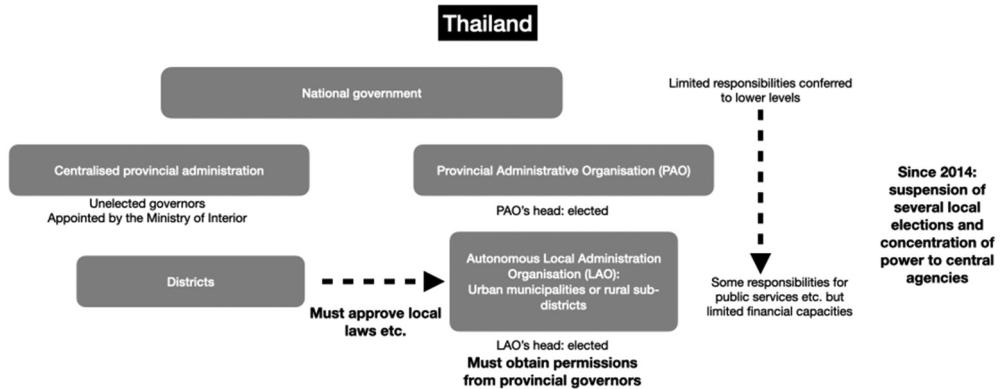
**Figure 3.** Decentralization governance structure in Myanmar.

#### 4.4. Thailand

In Thailand, two parallel structures exist: on the one hand, a centralized provincial administration headed by unelected provincial governors, and, on the other hand, an autonomous provincial administrative organization (PAO). The PAO's head is elected, while the centralized provincial administration is headed by a governor who is appointed by the Ministry of Interior. The PAO is then divided into autonomous local administrations (LAOs), which are either urban municipalities or rural sub-district administrative organizations (SAOs). Here again, their heads are elected. Nonetheless, LAOs lack autonomy. Appointed governors from the centralized provincial administration and district chief officers must still approve LAOs local laws, budgets and development plans (Unger and Mahakanjana 2016).

However, while the number of LAOs have rapidly expanded, decentralization remains incomplete because the national government has refused to grant much independence and administrative responsibilities. Before LAOs can pass local regulations and budgets, they must obtain permission from the provincial governors. Although the country passed the Decentralization Act in 1999, the national government have refused to concede many responsibilities and LAOs are unable to provide public services unless the national government gives them the mandate to do so (Marks and Lebel 2016). Further, the national government has provided insufficient funding to LAOs, has not allowed them raise significant revenues, and often requires local governments to seek its approval before disbursing funds (Nagai et al. 2008). Consequently, many LAOs have complained that although they have been given the task to provide additional service, they do not have the financial resources to adequately provide them (Marks and Lebel 2016).

Overall, scholars who have researched decentralization in Thailand have concluded that thus far power has not significantly devolved to LAOs and that there have not been major changes to central-local power relations (Figure 4). Instead, the national government has recentralized power after the initial decentralization reforms in the 1990s and 2000s. In particular, the military junta, which seized power in 2014, further concentrated power by suspending local elections and disbanding a number of local-level agencies (Mansrisuk 2012; Marks and Lebel 2016; Unger and Mahakanjana 2016).



**Figure 4.** Decentralization governance structure in Thailand.

#### 4.5. Vietnam

In Vietnam, there are levels of sub-national local government: (1) 58 provinces and 5 major cities, such as Ha Noi and Da Nang; (2) 710 district-level cities, towns (in large urban areas), and districts (in rural areas); (3) 11,145 wards and townships (in urban areas) and communes (in rural areas) (Morgan and Trinh 2017). In 2000, the Vietnamese Assembly transferred a number of administrative responsibilities from the central to local government (Gilfillan et al. 2017). However, as Garschagen argues (2016), while the central government has sought to devolve responsibilities, such as education and healthcare, it has strictly controlled provincial governments in terms of their policies. Similarly, while the government has decentralized fiscally, national-level officials can substantially influence sub-national government activities by doling out targeted block grants for development programs or infrastructure development which shape the budgetary measures available to provincial leaders (Anh and Thanh 2016). Moreover, Vietnam's single-party system means that limited space exists for extensive political decentralization. Seeking to retain complete control and management of government officials, the Communist Party of Vietnam (CPV) directly manages all provincial officials and vets the candidates who can run for local People's Councils (ibid.).

After more than a decade of decentralization (Figure 5), the government is disappointed with the results (Anh and Thanh 2016). The central government believes that decentralization has fragmented national policies and spurred excessive competition between local governments (ibid.). In contrast, local governments have lamented that they have been given more administrative responsibilities but not a sufficient level of human and financial resources which are needed for effective implementation of these responsibilities. Further, central ministries have not effectively coordinated with each other about which responsibilities should be delegated to which ministry and to which level of government, thereby creating policy incoherence. A final issue is that despite the country's decentralization, Vietnamese still have limited means to affect the policy-making process (ibid.). Consequently, policy making remains top-down and state-centred (Gilfillan et al. 2017).

Overall, in the four case-studies, local authorities have limited power over the policies they can foster and develop; despite a global push towards decentralization, the process remains incomplete in the GMS and therefore contributes to hinder the capacity of local governments to plan for environmental risk reduction, even when this domain falls within their attributions.

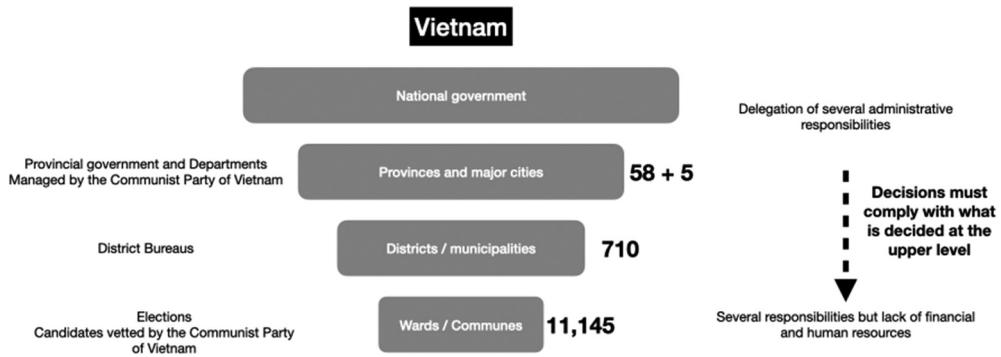


Figure 5. Decentralization governance structure in Vietnam.

## 5. Governing climate action in a context of incomplete decentralization

Local governance plays a major role in shaping environmental and climate-related risk management. When a hazard occurs, municipal authorities are the first in charge of helping residents cope with its impact. Moreover, they play a key role in long-term risk management because they are a main actor in urban planning and disaster risk reduction – two areas that contribute to climate resilience (Lee and Painter 2015). Meanwhile, climate actions are a global issue and often developed, if not crafted, at the national scale. Therefore, we investigate how climate actions are transferred from the upper levels to the local ones.

### 5.1. The Challenges to Mainstream Climate Change Actions into Urban planning

Effective urban planning is needed to reduce vulnerability to climate risks. If done well, planning can preserve green space and natural buffers, both of which can serve as defences for cities, and make sure that urban development proceeds in less-risky areas (Mitchell et al. 2015). However, our case studies show that there are obstacles in mainstreaming these medium and long-term climate goals into local urban planning. In all the four cases, the municipalities have mentioned their difficulty to cope with hazards of above-average intensity, which are expected to increase. In Lao Cai, an interviewee from the Department of Construction clarified that while they are building infrastructures to face the main hazards (in particular floods and landslides), these infrastructures, such as dykes, are not designed to withstand major events with a high intensity, such as a 100-year flood, because of the lack of funding.

The lack of funding for such investment and changes in planning practices is related to the size of the city. In Vietnam, cities are spread within five categories (from level 4 for the smallest urban centres to level 1 for large cities plus a “special category” for the country’s five largest cities), and the funding they receive from the central government depends on each level. Therefore, larger cities benefit from more funding to implement their development policies, including their climate policies. Beyond the economic question, small and medium size cities also lack urban planners at the local level. In Myanmar, Local Development Affairs Offices (DAOs) oversee second-tier cities without any guidance from the national level. However, they have limited background and training in urban planning. Roberts (2018), for example, estimates that, as of 2018, there were only 30 planners in the

entire country. Consequently, the Myanmar government has created generalized plans without considering specific climate and other environmental risks for each city. Moreover, cross-sectors consultations remain limited: in Lao Cai, an interviewee from the Department of Natural Resources and the Environment who was in charge of promoting climate adaptation actions told that it was difficult to influence the economic development pattern or even the way constructions were occurring, because of the lack of consultation between the different departments. Climate change response was still often seen as a separate question, rather than a transversal one.

Additionally, a number of cities lack land use plans or the current incentive structures are too weak for municipalities to curb land use change. Consequently, even in cities where these plans have been developed, the actual uses of land can significantly differ from the plan on paper due to limited enforcement of these plans. This can result in weakened environmental protection. For example, in Thailand, municipalities are given insufficient incentives to enforce land use plans, such as preserving green zones for flood protection (Friend et al. 2014; Marks and Elinoff 2020). Khon Kaen officials disclosed that the city's absence of regulations shrunk green spaces and led to significant land use change (also see Beringer and Kaewsuk 2018). Similarly, throughout all of Cambodia, very few urban plans or regulations exist. When they do exist, such as the Phnom Penh Master Plan, they are inadequately enforced and regularly fail to keep up with on-the-ground development (Baker et al. 2017).

Hence, while they are in charge of main components of climate resilience building over their territory (in particular urban planning and disaster management), secondary cities do not yet have adequate human and financial capacities to efficiently build climate resilience and mainstream it into urban planning. While they gained such competences through the decentralization process, they are yet to benefit from adequate material support to prepare and foster a long-term response to climate risks.

## **5.2. Disaster governance**

Disasters and extreme events are an important stimuli to adopt climate change adaptation actions (Berrang-Ford et al. 2011). This is observed at the local level, where local authorities are direct witness of the damages, often contribute to compensate for these damages, and plan for disaster risk reduction.

However, a number of shortcomings enfeeble disaster governance in these secondary cities. First, disaster governance has been fragmented along both vertical and horizontal scales. For example, in Vietnam and Thailand, agencies whose practices impact disaster outcomes, such as the Department of Highways or Department of Industrial Works, often operate independently, often not collaborating with other agencies or sharing pertinent data (Phuong et al. 2018; Marks 2019a). In Vietnam's Can Tho City, one major reason why the municipal government has yet to implement a comprehensive flooding policy is because flooding "falls in between the compartmentalized responsibilities of the sectoral departments" (Garschagen 2015, p. 613). At the national-level in Myanmar, the roles and responsibilities of agencies to reduce climate risks have not adequately been delineated. Overall, the country lacks climate adaptation plans. Further, the country's legal framework fails to specify the mandates of local-level agencies to reduce disaster risk. As a result, local

agencies often respond impromptu to disasters without preparatory plans (Shirai et al. 2018).

A related challenge is the lack of data which is necessary to mitigate climate risks. For example, in Lao Cai, local agencies have gathered their own meteorological data and other pertinent types of data but they rarely pool this data together, thereby causing information gaps to arise (also see Friend et al. 2014; Marks 2019). Second, due to incomplete decentralization, local authorities, such as Cambodian and Myanmar ones, lack sufficient skills, legal authority, and financial resources to sufficiently reduce climate-related risks (Va 2015). Third, agencies in these countries tend to prioritize emergency response and recovery instead of preparedness, even though action to boost preparedness have proved to be more effective (Larsen et al. 2011).

Finally, our case studies show that the structure of local power may influence the way damages are spread over space and populations. As found in Thailand wastewater sector (e.g. Marks and Breen 2021), corruption tied to local patronage structures unequally distributes climate risks. Our example of Koh Kong illustrates how political power unevenly distributes both water and vulnerability to drought.

## 6. Discussion

This paper draws upon four case studies to provide a synthetic perspective on local management of climate-related events and discuss how the decentralization process that spreads across Southeast Asia influences this management and therefore climate resilience building. The confrontation of the four case-studies reveals common challenges. A first challenge that is found in all investigated cities arises from the tensions between the local economic goals on the one hand and the duty of climate and environmental risk management on the second hand. Indeed, the Greater Mekong Delta experiences a rapid demographic growth, and due to rural-urban migrations this growth is mostly concentrated in cities. Therefore, at the local scale, economic growth to provide residents and incoming migrants with jobs is a main priority for planning authorities. National authorities also support the development of secondary cities to become more attractive for rural-urban migrants and thus mitigate the expansion of their megacities. The priority given to economic growth is even strengthened by the larger-scale trend of increasing integration of ASEAN, which intensifies socioeconomic pressures to make the countries more economically competitive (Juan 2018).

Meanwhile, the decentralization has made the very same local planning authorities a major actor who can build climate through strengthened urban and development planning competences. But, as our case studies suggest, these environmental goals, especially climate change focused-actions, appear less urgent. In this context, the economic imperative tends to reduce the incentive to curb land use change and to mainstream climate action into urban planning. Consequently, while decentralization is expected to bring about a better response to disasters and climate related events as local actors have better knowledge of local needs and constraints, it does not help address the usual discrepancy between short-term economic goals and long-term environmental needs. Moreover, as particularly seen in Bago, local authorities consider that it is national authorities' duty to provide financial and technical capacity to foster climate action: the incomplete state of decentralization, with insufficient funding associated to

these transferred competences, undermines the ability of local authorities to adequately foster climate action into their planning practices.

This challenge is found in other urban centres in GMS and beyond, regardless of their size. Does the small and medium size of a city favour or weaken the climate resilience building? An advantage these cities have is that they still can learn from mistakes made by larger cities because the amount of land urbanized is less in secondary cities than in mega-cities. Further, due to their smaller sizes, these cities can make changes to become more climate resilient because they are less “locked into” governance, large-scale infrastructure, and transport systems (cf. Unruh 2000) Finally, compared to those in larger cities, municipal officials in these cities (e.g. Bangkok versus Khon Kaen) receive less political interference from national governments due to their lower level of political importance, smaller populations and economies, and physical distance away from their countries’ centres of power. Such interference can undermine governance, especially if the ruling power is from a different political parties than those of local officials (Marks and Lebel 2016). This lack of interference also means that municipal officials have greater autonomy to run experiments, which can lead to reduced climate risks (Evans 2011).

Finally, the economic and political context plays a role in how policies, and thus climate policies, are enforced at the local scale. All the countries of the GMR are ruled by authoritarian or semi-authoritarian regimes with little space for political contestation and weakened civil society organizations (Rodan 2018; Morgenbesser 2020). As a result, the linkage between decentralization and local authorities’ accountability is weakened. This is observed in the four cities. This factor likely exacerbates the risks of conflicts of interests between political authorities and economic elites, which undermines the implementation of local climate actions.

Given recent trends for central government agencies to resist decentralization, we anticipate that local government agencies in these cities will remain weak in terms of their capacity to build climate resilience within their cities. We do not foresee them being able to access bigger budgets, have greater legal and fiscal authority, and become more accountable to their constituents. This trend together with the projection that these cities will grow rapidly over the next few decades (Birkmann et al. 2016) means that residents of these cities will continue to be vulnerable to climate risks, particularly floods and droughts. Moreover, given neoliberalizing trends or at least the lack of a strong alternative model (Bello 2019), uneven vulnerabilities will persist and the poor will be the most adversely affected by these current and future risks.

## 7. Conclusion

Our case studies describe the ways in which at the local level climate policies have unfolded and climate risks are managed. They show that despite a rising awareness regarding climate urgency in the Greater Mekong Region, the planning of an adequate climate response remains impeded, particularly in secondary cities. While local authorities are key actors in building climate resilience on their territories, the incomplete decentralization limits their capacity to fully integrate climate response into urban and development planning. Additionally, the political structures and the context of emerging economies tend to exacerbate the priority given to short-term economic growth over the response to climate change. In Southeast Asian secondary cities, this incentive

structures leads to a lack of accountability to address climate risk. However, as disasters become more frequent and severe in the future, this change could push urban populations to pressure their political leaders to pay more attention and do more to respond to these risks.

Since limited research has been conducted thus far on how decentralization has affected urban climate resilience in Southeast Asian secondary cities, our paper sought to address this gap. It has shown that a number of barriers resulting from the widespread fragmentation of the ways in which these states govern climate risks, insufficient decentralization, and limited capacities of these cities' local governments have undermined urban climate resilience. It has also suggested, however, that secondary cities can still improve their resilience if certain pathways are adopted. Comparing these findings from research conducted in secondary cities elsewhere would be useful to ascertain whether similar challenges and responses arise in these places.

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## Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to restrictions, e.g. their containing information that could compromise the privacy of research participants.

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