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# Inclusion in urban environmental governance of small and intermediary cities of the global South

Charrlotte Adelina

Stockholm Environment Institute, Asia  
Corresponding author: [charrlotte.adelina@sei.org](mailto:charrlotte.adelina@sei.org)

Diane Archer

Stockholm Environment Institute, Asia

Oliver Johnson

Stockholm Environment Institute, Sweden

Romanus Otieno Opiyo

Stockholm Environment Institute, Africa

Urban sustainability is governed beyond the urban scale through trans-local networks and assemblages of actors and institutions. There is an emerging field of interest that aims to understand the outcomes of urban sustainability interventions, both from the environmental and social equity perspectives. This paper contributes to the literature on governing urban environmental sustainability transitions, with a distinct focus on small and intermediary cities of the global South. Actors in cities of the global South are adopting a variety of ways towards achieving urban sustainability transitions in the realm of disaster risk reduction, adaptation building, greenhouse gas emission reduction, and natural resource management. Our paper employs an analytical framework derived from Bai et. al. (2010) to chart the actors, drivers, finances, barriers, and the inclusivity and sustainability outcomes in seven interventions led by different actors. Five of the cases are drawn extensively from literature, while two case studies reflect on our primary engagement in the cities of Nakuru in Kenya and Udon Thani in Thailand. We find that the actors leading and financing the projects and the drivers of the intervention can explain differential outcomes in the inclusion processes and the framing of environmental solutions. We then delineate the opportunities and barriers to achieve multi-level governance approaches that are relevant to planning transformations in the South.

**Keywords:** Multi-level governance, urban sustainability, inclusion, participation, urban governance

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### Introduction

Research on multi-level governance has largely focused on sustainability transitions in primary cities (Bulkeley and Betsill, 2005, 2013; Castán Broto and Bulkeley, 2013; Gouldson et al., 2016; Lee, 2014; Ong, 2011). In addition to the primacy of 'cities' in dealing with the planetary crisis (Goh, 2019; Long and Rice, 2018), policy networks assume that increasing the adaptive capacities of primary cities will trickle down to the responses of smaller or poorer cities (Fitzgibbons and Mitchell, 2019; Geldin, 2019). Global cities, which are largely primary cities, feature repeatedly in different interventions and sectors as leaders and educators, and other cities are pressured to emulate their governance models and best practices (McCann and Ward, 2012).

The importance of small and intermediary cities, in terms of their population shares within urban settlements or the functions they serve for the regional economy and state administration, is well understood (Hardoy et al., 2019). There is an emerging stream of literature on environmental governance in small and intermediary cities of the global South. These case studies highlight the potentials and challenges in realizing urban sustainability interventions including community-based adaptation measures, disaster risk responses, and multi-level environmental governance initiatives. However, systematic attempts to make sense of how the environment is governed in small and intermediary cities across the global South using comparative techniques are largely missing with a few notable exceptions (Angelovski et al., 2014; Bai et al., 2010; McEvoy et al., 2014).

In secondary cities with limited financial and human resources, investing in the environment can be seen by municipalities as both an opportunity and impediment to growth (Véron, 2010), leading to greater trade-offs for taking climate action. For instance, Tuhkanen et. al. (2018) documented the different trade-offs faced by the Tacloban municipality in their disaster risk response following Typhoon Haiyan in Philippines, such as contradictions between economic goals of the city versus disaster risk responses in land allocation and cost-effective versus meaningful participation of communities. Véron (2010) argued that the growth trajectories of intermediary cities are shaped by regional and local politics within the existing neoliberal governance system in the case of India. Land availability and lax land regulations may make intermediary cities ideal for unchecked project expansions (Watson, 2014). In Hessequa in South Africa, the 'smallness' of the city helped to spread new environmental norms, knowledge sharing, and institutional coordination (Pasquini et al., 2015)

There is an emerging focus amongst scholars in understanding and identifying elements of urban greening or sustainability projects, in order to explain their planning design and outcomes. For instance, Long and Rice (2018) trace the characteristics of a recent paradigm shift in urban environmentalism terming it as 'climate urbanism', pointing to how these projects are framed around addressing climate action as an economic opportunity, leading to the formulation of narrow goals for both climate securitization and social equity. They also identify how these climate infrastructures are funded by certain assemblages of actors such as global banks, policy institutions, and development agencies (Long and Rice, 2018). It is, therefore, important to assess the drivers, actors, finances, and outcomes of urban sustainability transitions in relation to each another to identify their interlinkages and interactions.

In this paper, we attempt to systematically analyze approaches to urban sustainability transitions across seven case studies of small and intermediary cities in the global South. In each case, we examine some of the key features and challenges of these actions for urban sustainability transition. We seek to answer the following research questions:

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- i. What is the relationship between actors, finances, drivers of interventions and their environmental and inclusion outcomes?
- ii. What are the barriers and potentials for advancing 'multi-level governance' in small and intermediary cities in the global South?

This paper is structured as follows: in Section 2, we briefly outline the literature on urban environmental governance and set out a framework for assessing multi-level urban governance. Section 3 outlines our methodology and the rationale for case study selection. Section 4 presents the case studies in detail and Section 5 draws out our findings based on case study analysis. We argue that the actors leading and financing the projects and the drivers of the intervention can explain some of the differential outcomes in participatory processes and involvement of actors in interventions and the framing of environmental solutions. Finally, in Section 6 we return to our framework to offer additional insights and considerations regarding barriers and potentials in achieving multi-level governance.

### **Literature Review**

In this section, we begin by introducing the key terms that we use for framing our research questions, followed by a literature review on the role of actors in shaping urban sustainability interventions and multi-level governance. Finally, we present a framework for analyzing inclusion in the realm of urban sustainability transitions.

### ***Environmental governance in intermediary cities***

Small and intermediary cities (intermediary cities are also mentioned as secondary cities in the literature) can be sub-national centres of 'administration, manufacturing, agriculture, trade or social and cultural services' (United Cities and Local Governments, 2016, p. 134), connecting urban areas with their hinterlands. They can also be industrial districts, corridor cities, or greenfield developments in the peripheries of large metropolises. Although they typically carry a population between the range of 50,000 to 1 million, this range can vary, given the country-specific characteristics of size, form, and function.

Governance can be defined as the pathways and mechanisms through which diverse forms of state and non-state action are coordinated (Rosenau, 2000). Specifically, environmental governance is the 'regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes' (Lemos and Agrawal, 2006, p. 298). Multi-level governance signifies the involvement of actors and networks across different geographic scales, extending beyond the scale of the urban (Bulkeley and Betsill, 2005).

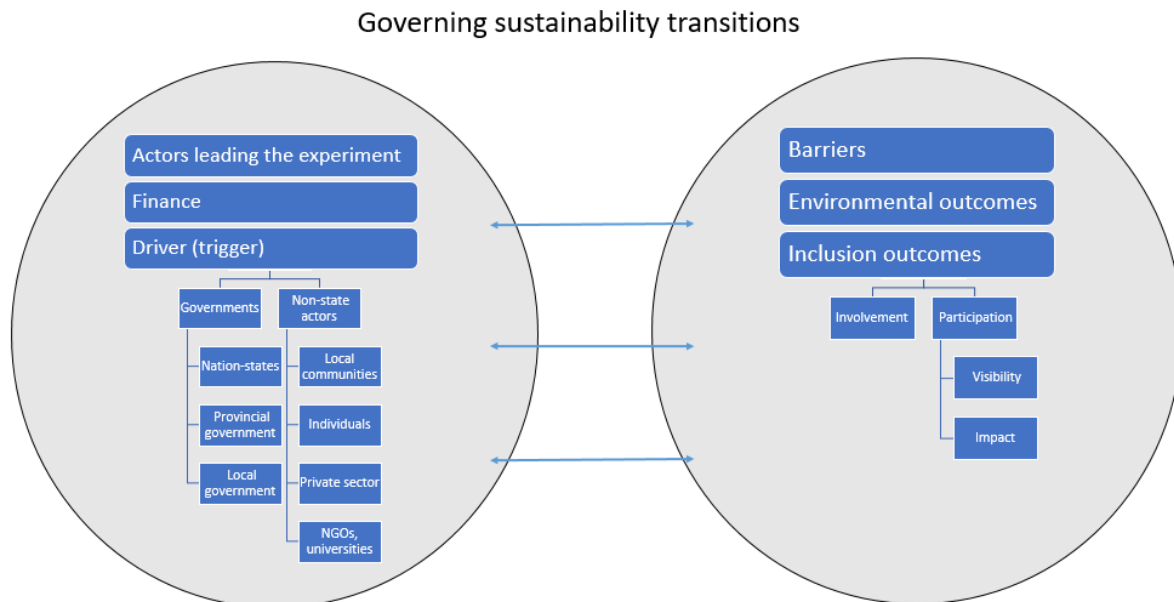
When studying urban sustainability transitions, we recognize the need to bridge the discourses on adaptation and disaster risk reduction, despite the relationships between climate risks and the adaptive capacity of urban communities (Parnell et al., 2007). In addition, natural resource flows and their metabolism are a crucial element of achieving urban sustainability (Alberti, 1996) and is especially a concern for small cities in the global South, where there may be persistent issues in managing flows and equitable access to natural resources by the local government. In this vein, Zhang and Li (2018) locate an empirical gap in the application of the concepts of urban resilience and sustainability, leading to unfavorable development outcomes in implementations that do not take into account both these elements. For these reasons, the paper uses a broad definition of 'urban sustainability transitions' including interventions on

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disaster risk responses, adaptation measures, and natural resource management in small and intermediary cities.

**The role of actor-networks in shaping sustainability interventions and multi-level governance**

We seek to find how the outcomes of urban sustainability interventions can be shaped by the actor-networks and drivers. A study by Bai et. al. (2010) used a conceptual framework that included triggers, actors, linkages, barriers, and pathways in 30 experiments to identify successful elements of sustainability interventions in cities. This is a helpful exercise as ‘a different combination of external and internal factors can result in cities following different pathways’ (Bai et al., 2010, p. 3) and therefore, it is worth analyzing the pathways and outcomes in relation to these factors. We modify this framework to identify linkages identified in Figure 1. We use the term ‘driver’ instead of ‘triggers’, and replace ‘linkages’ and ‘pathways’ with ‘finance’ and ‘outcomes’ in the environmental and inclusion spheres.



**Figure 1.** A framework for analyzing the governance of sustainability transitions. (Adapted from Bai et al., 2010)

In line with the recent literature on environmental governance, we recognize the role played by a multiplicity of actors and networks that contribute to governing a sustainable urban future (Castán Broto, 2017; Joubert and Martindale, 2013; Leck and Roberts, 2015; Matin et al., 2018; Munene et al., 2018; Okereke et al., 2009; McCann and Ward, 2012; Grandin et al., 2018). Shadow systems and informal spaces of knowledge-sharing in formal systems can play a crucial role for governing climate change (Leck and Roberts, 2015; Munene et al., 2018).

Interventions led by international development banks such as the ADB have been the foci of criticisms by civil society organizations for due lack of consultations and adverse impacts of their infrastructure projects on local communities and environments, despite their move

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towards sustainability and poverty alleviation projects (Hirsch, 2001). Transnational municipal networks (hereafter TMNs) mostly frame urban interventions around the delivery of climate mitigation and increasingly, adaptation projects (Bulkeley and Betsill, 2013). TMNs give cities access to resources, policy learning, profile-building, and political leadership (Bulkeley and Betsill, 2013; Castán Broto, 2017; Fuhr et al., 2018). Despite the appeal of this mode of operationalizing sustainable urban governance, their sustainability impacts and their inclusion approaches are not clear. Fitzgibbons and Mitchell (2019) point to the piecemeal approaches and threats to social equity based on their analysis of the 100 Resilient Cities program. However, global actors can also correct power imbalances between actors in cities of the global South. For instance, Shand (2018) explains how globally funded initiatives can help change institutionalized power relationships between the state and low income communities in Harare.

In this paper, we identify three levels of government: national, provincial, and local. While these can be referred to in different ways (e.g. provincial can also be referred to as regional, state, or county governments in different countries, and local governments are interchangeably used with the terms municipalities or municipal or city governments), for clarity we will use the terms national, provincial, and local governments. Involvement of communities in participatory deliberations and consensus building are increasingly the norm in environmental and urban planning (Collier et al., 2013). Initiatives by local governments are operated and managed in partnerships with community-based organizations or private for-profit actors (Bai et al., 2010; Castán Broto and Bulkeley, 2013).

The role of regional and national governments is key in sustaining coordinated climate action and building partnerships in urban areas (Corfee-Morlot et al., 2011; Fuhr et al., 2018). For example, Anguelovski et al. (2014, p. 156) find that, for climate adaptation, 'sustained political leadership from the top, departmental engagement and continued involvement from a variety of stakeholders are integral to effective decision-making and institutionalization of programmes in the long run.' Local governments are well-positioned to create livable communities, by promoting carbon-neutral transport, introducing advanced waste or water management systems, and pushing for energy-efficiency in building standards and city planning (Fuhr et al., 2018). However, not all local governments possess a similar capacity or will and face a great deal of barriers to action, including a lack of knowledge, resources, political will, or autonomy (Pasquini et al., 2015; Sami, 2016; Tuhkanen et al., 2018). Cities lack control over industrial policy or large-scale infrastructure (Wachsmuth et al., 2016). Political interests may hamper adaptation actions at the local level (Brockhaus et al., 2012).

Private sector actors have a prominent role in several local partnerships on urban sustainability interventions and are taking on roles that are typically regarded as public dominion (Castán Broto and Bulkeley, 2013), as governments outsource the planning process to private consultants (Sami, 2016). Many critical urban infrastructure projects are handled and financed by private sector players – especially in the sectors of waste management, public transport, road, and water (Harman et al., 2015). However, the increasing privatized nature of urban service provisions has been questioned in terms of its social equity and inclusion implications (Datta, 2015; Halpern et al., 2013). Under a supportive policy environment, boundary organizations such as research organizations, universities, and civil society groups can build and maintain local partnerships (Corfee-Morlot et al., 2011).

In terms of local communities, Archer et al. (2019) note that there are constraints to community action related to levels of asset ownership, differential priorities, social networks, and policy support, such as service provision. However, civil society actors, including grassroots

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networks like Slum/Shack Dwellers International (SDI) and Asian Coalition for Housing Rights (ACHR), have demonstrated the potential of community-led development to address infrastructure and housing needs – with technical support from NGOs and professionals where necessary – increasingly through co-production with the state, fostering new partnerships at the urban scale (Mitlin, 2018, 2008; Mitlin and Bartlett, 2018).

A joined-up approach can help to ensure that measures taken by one actor do not have negative impacts on others through displacement effects. Fuhr et. al (2018) identify key sets of drivers and enablers for local climate action, including high capacities and accountability that requires local governments to showcase performance, local democracy, an enabling policy framework, a conducive socio-economic environment and local leadership. However, it is important to note that multi-level frameworks are mostly framed in a normative manner, based on cases from the North. City governments from Asia, Africa, and Latin America may lack the financial resources to activate mechanisms for co-operation (Castán Broto, 2017). Power asymmetries between different actors across and within the formal-informal spectrum might impede action. Conflicts across different levels and departments of the government are common when resources are scarce and goals are conflicting. Competition for resources across cities pit them against each other for capital investments and infrastructure (Wachsmuth et al., 2016).

### **Inclusion in urban sustainability transitions**

We identify two forms of inclusion – first, participation of actors in a consultative process for designing the intervention, and second, the involvement of actors in planning or implementation of the intervention. In this section, we define the framework used for assessing participation outcomes.

In a multi-level governance context, where the main objective may rather be the legitimization and institutionalization of climate action, multi-actor, deliberative, and collaborative planning approaches are more effective (Castán Broto, 2017, p. 5). Where an effort is made to integrate participatory approaches in governance, the challenge remains to ensure that participation moves towards 'deliberative approaches that recognize both the multiple capacities of urban actors and their right to participate in the making of sustainable urban futures' (Castán Broto, 2017, p. 7), rather than being mere exercises in consultation or education (Shi et al., 2016). This may require, for example, more qualitative data and stories which allow multiple interpretations and plurality of experiences to co-exist, and institutional processes which are not overly technocratic or reliant on technical knowledge (Borie et al., 2019).

Urban poor communities adopt a range of strategies from individual and collective self-help to organizing social movements through a mix of strategies such as contention, subversion, and collaboration to secure well-being outcomes (Mitlin, 2018). Households and individuals in urban communities may be regarded as the most important players in environmental governance, because people 'self-govern' (Joubert and Martindale, 2013) and cope with disasters individually or at the household level (Corfee-Morlot et al., 2011). Households also engage at the community level, for instance by building shared resilient infrastructure or by negotiating and political bargaining with the support of local leaders and area councilors (Bulkeley et al., 2018; Joubert and Martindale, 2013). These deliberated strategies to deal with climate risks and disasters or developing low cost and low carbon infrastructure can by no means be regarded as a lack of participation in the realm of politics and governance.



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We therefore build on the framework for analyzing participation developed by Chandrasekhar et al. (2014), which accounts for ‘non-traditional’ modes of participation such as ‘active opposition’, where people act outside of formal planning processes to influence outcomes (see Table 1). They also distinguish between the mere presence of stakeholders in a consultative process termed as ‘nominal participation’ (Arnstein, 1969) from more meaningful participatory processes such as ‘transformative participation’ (White, 1996), in which stakeholders are enabled to become decision-makers. Transformative participation also implies that the unequal power relationships between the state and communities are effectively addressed (Shand, 2018). We add ‘self-governance’ (Joubert and Martindale, 2013) to the framework to signify a type of participation that has high visibility but less transformative outcomes. For example, while households in informal settlements develop coping mechanisms as a direct response to crises, long-term adaptation strategies may be adopted to a lesser extent (Archer et al., 2019).

**Table 1.** Framework for conceptualizing participation (Chandrasekhar et al., 2014)

<b>Forms of Participation</b>		<b>Visibility</b>	
		<b>High</b>	<b>Low</b>
<b>Impact</b>	<b>High</b>	Transformative participation	Active opposition
	<b>Low</b>	Nominal participation or Self-governance	Non-participation

Even though the participatory strategies or involvement of actors might change or shift, we simplify the outcomes of participation and inclusion for the purpose of analysis.

### Methodology

Our seven case studies are purposively chosen to highlight differences in terms of the actors leading the urban sustainability transitions, based on a scoping of existing literature. Our motivation behind the varied choice of interventions is that ‘it is usually impossible to manipulate particular aspects of political or urban systems in an experimental fashion and observe the differences that these changes make, social scientists instead use variation across systems to explain similarities and differences’ (Denters and Mossberger, 2006, p.553).

We focus on the actors leading the seven interventions, and how they shape the drivers and the financing mechanism of the intervention, and assess the barriers, and the inclusivity and sustainability outcomes. The interventions considered are in the fields of natural resource management, climate change adaptation, disaster risk reduction or mitigation, or a combination of the above. The interventions analyzed may resonate with the challenges of many small and intermediary cities in the region, however generalization of results may not be tenable due to the impacts of specific socio-economic trajectories, environmental flows, local histories, and political conditions in how interventions are designed and implemented.

**Table 2.** Case study selection criteria and sources

<b>City</b>	<b>Leading actor</b>	<b>Sources</b>
Surat	Transnational municipal network	Secondary (Chu, 2016; Chu and Michael, 2019; Sharma et al., 2013)

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Đông Hà	International development bank	Secondary (ADB, 2016, 2015)
Nakuru	National government and county government	Primary data
Udon Thani	National government and local government	Primary data
Manizales	National government and local government	Secondary (Hardoy and Velásquez Barrero, 2014)
St. Bernard	Non-governmental organization	Secondary (Co, 2010)
Khulna	Households	Secondary (Haque et al., 2014; Roy et al., 2012)

We choose seven case studies, two from South Asia, three from Southeast Asia, one from East Africa and one from Latin America. Additionally, in two of our case study cities, Udon Thani and Nakuru, the research team conducted primary research. In Nakuru, five participatory workshops were conducted to discuss environmental issues in the city with the municipal staff, civil society, and community leaders and members from four neighborhoods. In Udon Thani, these included a series of three community-level workshops in two different communities to understand environmental concerns that residents considered to be priority issues, which were then explored further through a collaborative citizen science process, followed by participation by the research team in a monthly meeting of all the city's community leaders at the municipality to share findings and identify further priority issues, as well as meetings with municipal staff. Our five other case studies were drawn from secondary sources, selected based on the kind of actors leading the intervention, while ensuring the reliability of available information. The seven cases are made comparable by culling out the same information from each case study to employ the identified framework of analysis.

### Case studies

In this section we provide an overview of the seven case study locations and initiatives, in relation to the elements of Bai's framework as outlined earlier and in Figure 1. We organize the case study section based on the type of actor leading the interventions - starting with the interventions led by global actors, followed by the ones led by national, regional, and local governments, and subsequently, we describe civil society interventions and community-based adaptation measures (Table 2).

#### ***Resilience building in Surat, India***

*Introduction:* Surat is vulnerable to floods, storms, increasing sea level, and precipitation. Karanth and Archer (2014) estimate that a 1-metre sea level rise could submerge nearly 40% of the city land. Despite these risks, an official integrated assessment of losses and damages is yet to be conducted in the city (Bahinipati et al., 2017). Although India launched the National Action Plan on Climate Change in 2008, political authority is decentralized and climate and urban planning rests with individual state governments.

Surat city joined the Asian Cities Climate Change Resilience Network (ACCCRN), a transnational municipal network (TMN) to improve disaster preparedness and resilience to floods. The cities were selected by ACCCRN on pre-defined criteria based on an assessment of climate-related hazards, capacity and resources of local government, and the geographical



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profile of cities. With an objective of preparing a City Resilience Strategy (CRS), ACCCRN supported processes such as stakeholder workshops, vulnerability assessments and detailed sectoral studies (Sharma et al., 2013). In addition, an Urban Health and Climate Resilience Centre (UHCRC) was established to address public health issues related to climate change and disaster impacts.

*Actors:* The Surat Municipal Corporation (SMC), the regional business association Southern Gujarat Chamber of Commerce and Industries (SGCCI), academics, and experts drafted the CRS. TARU, a private advisory group provided risk assessments. The Surat Climate Change Trust (SCCT) was set up as a result of key government and private stakeholders desiring more institutionalized and sustained action (Chu, 2016). The SCCT consists of various inter-sectoral organizations such as provincial disaster management authority, water departments, SGCCI, and academic institutions (Sharma et al., 2013).

*Finance:* The ACCCRN project was funded by the Rockefeller Foundation. Both the SCCT and the UHCRC was established with seed funding from the Foundation and also received support from the SMC. The SCCT can receive funding for projects from external sources.

*Drivers:* The plague epidemic of 1994 (Chu, 2016) and the 2006 flood (Bahinipati et al., 2017) increased the awareness of the city on environmental and public health issues and led to active participation. The SGCCI had an important say in city planning and an interest to prevent future capital losses. They hosted consultation meetings and lead pilot projects after the end of the project.

*Barriers:* Lack of institutional co-ordination at the municipal level was identified as a major challenge. The SCCT aims to act as an independent funnel for funding (Karanth and Archer, 2014) but it is still reported to be battling constraints regarding institutional co-operation (Chu, 2016).

*Outcomes:* The CRS was only adopted partially. An early warning system for disasters and a cool roof and passive ventilation program was set up (Sharma et al., 2013). SCCT's objectives included building long-term capacity to address climate change adaptation and GHG stabilization (Karanth and Archer, 2014).

*Inclusivity:* The visioning process lacked the involvement of communities (Sharma et al., 2013). Traditional divisions on the lines of religion and caste have not been overcome in this case of adaptation planning (Chu, 2016; Chu and Michael, 2019). The role of civil society has been neglected (Karanth and Archer, 2014).

### **Adaptation Planning in Đông Hà, Vietnam**

*Introduction:* Đông Hà is located along an economic corridor at an intersection of National Road 1 A and the Trans-Asian Road, important for its international trade location in the Mekong Region. The riverside city is also susceptible to flooding. Increasing severity of flood and drought events are expected in the region along with climate change. The local Master plan does not take into account climate considerations and lacks safeguards. Areas which were highly susceptible to flood risks were allowed to be developed for real estate development. The Quang Tri province emphasizes the role of Đông Hà in the overall settlement system and its socio-economic development plan (ADB, 2015).

The Asian Development Bank (ADB) identified Đông Hà as one of their Greater Mekong Sub-

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region towns (GMS) for a technical assistance project that aims to develop integrated plans for strengthening flood resilience of the city through green infrastructure and nature-based solutions (ADB, 2015). The city's major drainage channel constituting a box canal was found to be inadequate for flood events and was to be redesigned. The plan suggested improving the resilience of the market-to-port commercial zone, which is the economic centre of the city. Le Duan Park, which could act as natural drainage, is also envisaged as a green space with footpaths and recreational facilities, with functionalities ranging from improving permeable surfaces, use of public space for recreation and tourism, and to facilitate stormwater drainage and waste management.

*Actors:* A core group including the technical experts from the International Centre for Environmental Management (ICEM), provincial and local government, and local construction companies identified flood risks in the city and two areas for building resilience. The technical expertise was provided by ICEM. Key players from the local government, technical experts, and civil society actors formed the core group constituted by ADB.

*Finance:* The project is funded by the ADB with a 4 million euros grant from the Nordic Development Fund. The redevelopment of a modern, green urban zone is expected to increase the development value of the basin that could be utilized to fund further green infrastructure.

*Drivers:* The green infrastructure plan of ADB was to redevelop the basin and the economic centre areas into resilient zones that could also thrive financially for trade, tourism, and commercial activity. They accordingly revised the city vision and chose a 'highly visible demonstration site' (ADB, 2016, p. 148). The project is a part of GMS Corridor Towns Development Project (ADB, 2016).

*Barriers:* Poorly planned or unplanned developments has exerted pressure on the city's natural ecosystems and resources. There are also inconsistent goals within the organization, with the core group stating that one of the issues in the region was that national governments and ADB preferred 'hard engineering solutions because they are standardized and relatively easy to deliver' (ADB, 2016, p. 149).

*Outcomes:* The project is expected to increase the micro-climates of the two sites and the flood resilience of the city. The project also aimed to raise awareness about simpler bio-engineered and nature-based solutions. The focus of the project was narrow and focused on water management (ADB, 2016).

*Inclusivity:* Although a participatory mapping exercise was conducted, the core committee did not consist of any local community members or associations. The connectivity plan hinged on displacing the small shop holders in the region, without delineating plans for inclusive relocation or compensation of those affected by the plan (ADB, 2016).

### **Regional water and sanitation improvement in Nakuru, Kenya**

*Introduction:* Nakuru is Kenya's fourth largest town and the headquarters to the Nakuru County Government. The town is facing severe water, sanitation and solid waste management challenges, as blocking of drainages by solid wastes leads to flooding and health hazards. The national government has several important legislations in place for environmental and waste management. The national government enables devolved governance through the County Integrated Development Plan.

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Nakuru county leads Kenya in prioritizing improved sanitation. County-level policies addressing water and sanitation management include: the Water Bill that makes provision for water services and sanitation, the Solid Waste Management Bill that established the County Solid Waste Management Fund, the Nakuru Countywide Inclusive Sanitation Strategy provides a framework for improving sanitation infrastructure and faecal sludge management regulations, and the Nakuru County Sanitation Programme, an EU-funded public-private partnership, which applies a behavioural change and market-based model of accelerating sanitation improvements. The programme is implemented by the Nakuru Water and Sanitation Company (NAWASCO) with Vitens Evides International, and receives technical support from SNV Netherlands Development Organisation and Umande Trust. In addition, the Annual Development Plan (ADP) is a one-year extract from the County Integrated Development Plan (Nakuru County Government, 2018, 2013), allowing for reviews responding to the emerging issues in the economy. It sets out strategic initiatives that address the County Government's priorities and plans for each financial year.

*Actors:* The county government is working with the national government and other key stakeholders such as UN Habitat and private sector in implementing water and sanitation programs. Private providers such as NAWASCO are a part of service provider associations that contribute to delivering the county mandate.

*Finance:* Most funds are provided by the state, unless implemented in partnership mode. As per mandate, no funds should be appropriated in the budget unless planned for and the ADP is prepared accordingly.

*Drivers:* The anticipated upgrading of the town to city status in 2020 is pushing county-level action in Nakuru city. The need to deal with the poor water supply quality and sanitation conditions as the population of the city increases is also a major driver.

*Barriers:* The major challenge is lack of political goodwill and inadequate budgetary allocations. Although there is a working group bringing water, sanitation, solid waste and drainage management sectors, there is no policy guiding their operations and integration purely relies on trust and goodwill.

*Outcomes:* Nakuru county is planning to incorporate an integrated solid waste management system that will involve collection, sorting, treatment, recovery recycling, and composting to protect the environment and human health through public education. The county has partnered with local organizations and private individual to handle solid waste in Nakuru.

*Inclusivity:* Public participation is required during the review of the budget and projects listed in the ADP. The constitution of Kenya, County government Act, and Urban Areas and Cities Act has well-defined conditions on public participation for any development project which is funded by public finances.

### ***Udon Thani - A Greener City in Thailand***

*Introduction:* Udon Thani in Thailand is a small city of 130,000 residents facing rapid development due to its strategic location near the Lao border. Udon Thani is exposed to both flooding and drought. It is heavily reliant on one reservoir for its water supply.

Through the Udon Charter for 2029, a multi-stakeholder vision for the city, the city is committed

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to achieving six policy points, driven by the objective of becoming a green city focused on MICE (Meetings, Incentives, Conferences, Exhibitions). It seeks to increase Gross Provincial Product, become an employment hub for MICE and green jobs, narrow the inequality gap, have a walkable urban core, and minimize the impact on global climate change. These policy objectives include action points for investing in green transport, green energy, green industry, and green infrastructure, as well as parks and public spaces, affordable housing, safe food, health, and becoming a MICE city with a green economy. The city is also invested in becoming a sport city. Clear, measurable targets have been set for these objectives according to baseline data, such as ensuring all residents have green space within a 5-minute walk. The Udon 2029 process is home-grown through a collaboration of city stakeholders, ranging from the local government, academia, local businesses, and local communities.

*Actors:* The local government has played a key role in driving city-wide initiatives. It has regular monthly meetings with community leaders of all 105 communities in the city to update leaders on municipal activities. The Udon Thani 2029 team consisted of volunteers from academia, local businesses, communities, and a local co-ordinator, who have driven the Charter process. The Udon City Development Company (CDC) also plays an important role.

*Finance:* The city receives a centrally allocated budget, as well as locally raised funds (e.g. taxes on advertising billboards) to fund infrastructure and services. There is also investment through private-public partnership (PPP), such as for the Smart Bus (which was cancelled during COVID). There have been externally funded research projects focusing on urban climate resilience.

*Drivers:* The Thai government, through the Digital Economy Promotion Agency, is urging cities to collaborate with the private sector to form a City Development Corporation (CDC) to secure funding for development projects. There is also a national drive for a National Charter for Urban and Local Economic Improvement, which promotes the development of charters for provinces and urban areas. Experience of flooding and water shortages is driving the city's investment in green infrastructure.

*Barriers:* The city faces a shrinking and ageing population within the municipality, but rapid urbanization on the outskirts of the city, which are areas with important wetlands. Community leaders feel that there could be better arrangements for water and waste management and need for improving citizen awareness on these issues.

*Outcomes:* The city is carrying out the important step of collecting data to use as a baseline for monitoring progress, such as mapping all the trees on public land. With regards achieving green transportation, the city piloted a multiway pedestrian crossing to improve walkability (contributing to the healthy, sporty city objective) and launched the Udon Smart Bus. There has been a public discussion on haze and air quality from crop burning, to increase access to public spaces and green spaces and led to arborist training and tree-planting activities.

*Inclusivity:* In the monthly community meeting held by the municipality, there are opportunities for information sharing and dialogue between the city representatives and community representatives. The municipality shares budget plans and asks for the approval of the community leaders. The process of developing the Charter was volunteer-led with representatives of different stakeholder groups taking a lead on different sections according to their interest.

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### ***Local integrated climate planning in Manizales, Colombia***

*Introduction:* Manizales in Colombia is a case of an early adapter and leader of climate action in intermediary cities of the global South, starting as early as 1990s. The city expanded from a plateau region into steep slopes that were not zoned for development covering ecological zones mostly in hilly, tropical rainforest regions. Intense precipitation causing landslides, erosion, and sometimes flooding add to the risks of volcanic eruptions, earthquakes, and man-made pressures on the ecosystem. Colombia has a strong awareness on climate risks and has integrated a National Adaptation Plan and an environmental legislation that support disaster risk reduction systems and adaptation actions (Hardoy and Velásquez Barrero, 2014). The Ministry of Environment and Sustainable Development, the National Environmental System and the Disaster Risk Management Unit at the federal level, and the Corpocaldas at the regional level are the government authorities responsible for natural resource management and managing climate change priorities.

Disaster risk management and governance is led by the local government in Manizales. The Municipal Office for Disaster Prevention and Response (OMPAD) oversees local DRR initiatives and the formation of emergency committees. Manizales municipality's independent control entities along with the civil society nominated Territorial Planning Council constitute the local body responsible for planning and monitoring. Their local plans focused on reducing risk and building resilience, namely the Biomanizales of 1993, the Bioplan of 1995, and the local disaster risk plan are integrated with the Municipal Development plans. The creation of an Environmental Secretariat with an allocated budget shows the importance given to the integration of environmental initiatives at the local level.

*Actors:* Strong institutions at the national and local level are driving the action. Civil societies and local universities are designing and monitoring a city-level risk management index and river behavior data. The Chamber of Commerce supported an environmental education program and the growth of eco-friendly business. 'Slope guardians' program has trained women in high risk slopes to mitigate risks at the slopes through management of vegetation, drainage channels, stabilization projects, registration of households, and land-use.

*Finance:* The central transfer of funds to municipalities are earmarked to be spent on sectors such as health and education. The capacity of the local bodies to raise funds for other services such as environmental planning is varying. The 1.2% tax revenue from urban properties went to finance environmental conservation projects of Manizales.

*Drivers:* The willingness of local actors to work on risk management has enabled the integrated approach. The municipality's autonomy as envisaged by the national constitution has been instrumental, and the co-ordination required with other levels of the government for financial and policy support have been smooth (Hardoy and Velásquez Barrero, 2014).

*Barriers:* Persisting issues of sewage treatment services and wavering local participation in meetings indicate lessening interest on disaster risk reduction are key issues. Many initiatives such as the slope guardian project were not expanded due to lack of funding. There is lesser autonomy of municipalities for revenue spending on climate risks adaptation and DRR initiatives. The National Disaster Fund is also shrinking.

*Outcomes:* Some of the outcomes of the integrated planning approach include eco-park networks, reforestation of river basin, environmental observatory, indicators for environmental management, the Environmental Plan for the Biocomuna Olivares, the Integrated Risk



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Management Programme for Manizales, and the integration of environmental studies into school curricula.

*Inclusivity:* Nearly hundred women participated in the slope guardians initiative. The process of planning had strong participative mechanisms in place, both embedded in the constitution and in institutional practice (Hardoy and Velásquez Barrero, 2014). A portion of insurance premium that is paid along with the property tax is shared with poor groups voluntarily by upper income segments. Whereas displaced or migrant population living in steep slopes have been re-settled, licenses are issued for middle income housing projects on risk zones.

### **Post landslide recovery in St. Bernard, the Philippines**

*Introduction:* St. Bernard is located in the eastern rural region of the Visayas in Philippines. Due to the frequency of disasters in the region the government had signaled its shifting priorities from disaster response to reduction through the Medium-Term Development Plan (2004-2010) and the Strategic National Action Plan for Disaster Risk Reduction (2009- 2019). The National Disaster Coordinating Committee (NDCC) with an emphasis on local disaster mitigation, preparedness, rehabilitation and response, both pre- and post- disaster, showcases the presence of a strong leadership and increasingly proactive policy responses. A landslide hit the St. Bernard city on 2006, following an earthquake. At the time of the disaster, a comprehensive national framework for managing disaster risks was largely absent. Local governments had constrained capacity and resources to provide comprehensive relief. The landslide collapsed settlement and led to leaking of mud, water and volcanic rocks from the slope, where about 18,862 residents were affected. The case study focuses on the Guinsaungon settlement, which was one of the most hit communities by the disaster (Co, 2010).

The municipality provided evacuation centers housed in schools. The Homeless People's Federation Philippines, Inc. (HPFPI) is a community-based organization that stepped in to mobilize communities to build temporary housing after a landslide destroyed houses of a community in St. Bernard. They located land in a school premises and offered the requisite technical support to build row-house type of housing units. Overcrowding at the centers led to deteriorating health conditions and shortage of drinking water, electricity, sanitation, and drainage facilities in the schools. The change to more spacious housing units resulted in better health conditions.

*Actors:* The HPFPI was the main actor in post-disaster governance. Municipal health office, local NGOs, religious groups and faith-based organizations such as the Parish Social Action Centre (PSAC) and the Vincentian Missionaries Social Development Foundation also provided basic necessities, medical support and relief assistance. The HPFPI also garnered support from the local and national level agencies from the Department of Social Welfare and Development and the Department of Education (Co, 2010).

*Finance:* The project used community funding and relied on the community's regular savings to invest in development. The Federation provides an institutionalized network at the local, regional and national level to organize these efforts. The Federation is funded by international donors, NGOs and faith-based groups such as the ADB, IIED, CordAid.

*Drivers:* Disaster played a key role in the organization and coming together of multiple stakeholders. Established participative and negotiation mechanisms and the well-defined objective of the NGO streamlined the process.



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*Barriers:* Due to lack of data, targeting relief to the families in need was difficult. The federation overcame most of the barriers through continued persuasion towards long-term strategic solutions. Involvement of the community helped in identification of worst-affected families.

*Outcomes:* The building of temporary homes used available, low-cost materials, and reused landfill materials to raise the height of the housing.

*Inclusivity:* The participation of communities in data collection, selection of beneficiaries, design, construction, and maintenance of housing resulted in community ownership. The federation also prioritized providing support to elderly couples and families with children (Co, 2010). By building trust and partnerships amongst local groups, the community associations that worked with HPFPI have organized as home-owners associations at the municipal level and transformed to a mode of self-governance, with the HPFPI only providing a supportive role. The NGO is scaling up their initiatives, advocating for policy changes that are suitable for low-income dwellers.

### **Community-based adaptation to flooding in Khulna, Bangladesh**

*Introduction:* Khulna is located on the southwestern coastal region of Bangladesh, and is prone to floods, storms, fresh-water shortages, salinity intrusion, riverbank erosion, and heat waves. Industrial expansion, water pollution and lack of drainage facilities compound to the climate-related risks on the city. Waterlogging as a result of inadequate drainage is a regular occurrence in the study site. There is a lack of national policy response to respond to the needs of the increasing urban population in Bangladesh. The 1999 National Housing Policy, the National Adaptation Programme of Action, and the Bangladesh Climate Change Strategy and Action Plan do not take into account the concerns of the urban poor (Roy et al., 2012). The municipality largely focuses on providing post-disaster relief.

Residents engage in a wide range of in-situ adaptation strategies such as changes to the built environment and livelihood strategies (Haque et al., 2014). The roofs of homes are lined with polythene bags or cement bags to prevent leakage during heavy rainfall. The floor heights are raised by using elevated plinths or constructing on stilts. Other coping strategies include use of ash or wood on slippery floors, raising furniture, and using top shelves for storage. The role of social networks plays an important role in communally responding to reduce risks.

*Actors:* CBA measures are used in low-income settlements to cope with climate risks, specifically high rainfall and flood. The urban poor have limited capacity and resources for adaptation, but individuals, households, and communities come up with low-cost measures to reduce their exposure to risks. Local NGOs work on concerns of the community and together with the Khulnaa City Corporation (KCC) mediate to reducing vulnerability of the households (Haque et al., 2014).

*Finance:* The actors finance these low-cost initiatives through incremental communal efforts and re-using existing infrastructural elements. While older members in the community dedicate their time in mobilizing funds and people, the younger members volunteer with physical effort.

*Drivers:* Disasters and their adverse impacts on livelihoods and health forces vulnerable communities to develop coping mechanisms and resilience.

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**Barriers:** Most of the residents do not hold tenure security and have fewer incentives to invest in future-proofing their houses. The KCC does not provide them with drinking water, roads, drains, and sanitary facilities. The existing efforts of the individuals and communities do not address the structural issues and policy gaps that exacerbates the vulnerabilities of these populations (Haque et al., 2014; Roy et al., 2012).

**Outcomes:** Residents use low-cost, soft-engineering measures. Households increase their food access by growing food on their roofs. Available containers are used to store water. Bamboo sticks are used to clear blocked drainage systems and they use bricks and stones to build lanes. Communities reduce risk together by fishing for food, taking shelter together, and setting up community kitchens. They also built common infrastructure such as elevated pathways, toilets, and drains.

**Inclusivity:** Informal settlements' vulnerability to disasters are worsened by poverty, low assets, loss of livelihoods, precarious living conditions in hazardous areas, risk of evictions, food, and water insecurity, and associated health problems. The community receives risk information late due to lack of communication devices. Most members of community in question live in extreme poverty and possess very limited physical assets. The senior members in the community negotiate with ward commission for better support (Haque et al., 2014).

## Discussion

We organize the discussions in three sub-sections: in the first section we delineate how actors leading and financing interventions can impact participation outcomes. The second sub-section looks at how drivers of intervention shape the framing of the interventions. The third set of analyses deals with the inclusion of different actors, pointing to potentials and challenges in achieving multi-level governance in small and intermediary cities of the global South. Table 3 uses the modified Bai et. al. (2010) typology to present a snapshot of environmental transitions in small and intermediary cities.

**Table 3.** Summary of case studies

City	Leading Actor	Finance	Drivers	Barriers	Environmental outcome	Participation	
						Visibility	Impact
Surat	TMN, Business association	International Donor	Disasters and capital loss	Institutional co-operation (local level)	Resilience strategy (city level), health center	Low	Low
Dong Ha	International development bank	International Donor	Disaster, Economic agenda	Institutional co-operation (international level)	Blue-green infrastructure in core zones	Low	Low
Nakuru	County Government, National Government	National Government	Infrastructure deficit, Local vision	Institutional Co-Operation	Service provision	High	Low
Udon Thani	Local government, National government	National, Local	Local and National vision	Rapid Urbanization, Infrastructure deficit, Local will	Green spaces and green infrastructure development	High	High
Manizales	Local government, National	National, Local	Local will	Infrastructure deficit, Decreasing	Integrated planning and risk management	High	High

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	government			local will, Lack of Funding			
St. Bernard	NGO	Community Savings	Disaster	Lack of data	Disaster risk response	High	High
Khulna	Households (Self-governance)	Community mobilization	Disaster	Tenure insecurity, Infrastructure deficit	Disaster risk response	High	Low

### ***Linkages between leading actor-networks and participatory processes***

Even though we set to analyze the actors leading the interventions and those that finance the interventions as two distinct explanatory factors, we find that these two factors often overlap (Table 3). In this section, we analyze the links between the actors leading and financing the interventions and its links with participation.

In Surat and Dong Ha, global actors and funders lead the urban sustainability transitions in the intervention studied. In line with the literature, the social equity aspects of globally funded projects need greater scrutiny, as we find that both the cases have low level of participation, both in terms of stakeholder visibility and impact (Table 3). The selection of the local partner should be considered with greater consideration to social equity outcomes and the participatory process could be embedded in criteria for financing interventions by global donors. In a context where local communities suspect international organizations to be interfering in national policy agendas (Ruszczuk, 2019) or having piecemeal approaches to social equity considerations (Fitzgibbons and Mitchell, 2019), these solutions may be of utmost priority for international actors for the success of their interventions.

We find that there are strong procedural mechanisms in place for participation when governments lead and finance interventions, resulting in a high degree of visible participation as seen in Udon Thani, Nakuru, and Manizales. However, their impacts on transforming power relationships between state and non-state actors is mixed (Table 3). Manizales has a highly favorable participatory outcome, where sustained prioritization of and investments in building adaptation of communities have built strong, transformative partnerships. The high degree of municipal autonomy may have also strengthened institutions at the local level, even if sustaining the interests is noted to be a challenge. In Udon Thani, the monthly meetings of community leaders at the municipality have fostered an openness between community representatives and municipal leaders and there is a clear drive towards transparency from the local authorities. In contrast, although residents of Nakuru are aware of their role in shaping development of their community, the opportunity to participate in such forums is rather limited and is merely done as a 'formality' as part of the approval process of the ADP. Participation is largely cosmetic in this case, since the outcomes of the consultative processes are not always binding.

When we look at the 'bottom-up' interventions in St Bernard and Khulna, we find a high degree of 'non-traditional' modes of participation (Chandrasekhar et al., 2014) through active opposition or self-governance in driving low-cost adaptation or disaster risk responses in the absence of state action. However, their political outcomes are mixed. Interventions led by strong civil society actors such as the HPFPI have built local partnerships, mobilized communities to collect data, plan and finance projects, and negotiate for better infrastructure and policies from the government. This has led to transformative outcomes in terms of improved power relationships between the communities and the state and the formation of

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community groups that can mobilize and organize independently. In Khulna, the largely unorganized activities of households, operating without the support of governments or coordinated social movements, have individualized disaster risk responses.

### ***Linkages between drivers of interventions and the formulation of environmental goals***

In the interventions led by global actors, the sites of intervention were chosen based on experience of disasters and existing political leverage and will, so that the interventions can be demonstrated in visible demonstration sites, both in Surat and Dong Ha. A strong economic motivation for investing in climate adaptation infrastructure in Dong Ha for boosting the growth of the GMS region for attracting large-scale foreign investment has led to the framing of site-specific or sector-specific solutions such as investments in blue-green infrastructure in the central zone of the city. Surat played an important role as a business district of manufacturing and the previous experience of capital losses led to the business organization's key involvement in shaping outcomes, such as the setting up on early warning systems for flooding. However, the institutionalization of climate change responses through the SCCT and UHCRC in the case of Surat marks a positive departure from site- or sector-specific climate protection solutions when economic incentives drive urban sustainability transitions.

We find linkages between local visions of improving city level adaptation measures and the framing of integrated and holistic city-level solutions. Udon Thani's drive to become a green city, Manizales community's interests and volunteering in finding integrated risk management solutions, and Nakuru's aspirations to receiving city status are all examples of local visions for urban development. While we recognize that there may be contesting interests even within local-led development agendas, a considerable level of political will in the community can strengthen participatory processes and a demand for accountability from the local government as seen in these three cases. Some form of a unified 'local vision' have also brought together stakeholders with different expertise in these two cases, such as universities or business sectors to fill knowledge or infrastructure gaps, in a move to find integrate solutions to urban sustainability transitions. Therefore, an important priority for policymakers is embed participatory processes to draft local aspirations and capacities in the design of interventions.

Previous disasters can act as a strong reason to increase participation (Chandrasekhar et al., 2014) and often are the main drivers for local community action. In the case of Khulna and St Bernard, disasters have driven low-cost innovations that have shown promising ground-up sustainability innovations by re-using available materials and manpower and modelling CBA measures for financing long-term projects. However, without systemic, institutionalized responses in greenhouse gas stabilization, risk reduction, or service provisions from the government, the burden on low income communities will be disproportionate to respond to the impacts of unsustainable urban development trajectories.

### ***Barriers and considerations for advancing multi-level governance***

In this section, we synthesize the involvement of different actors from the seven cases to draw implications for potentials and challenges in multi-level governance. Co-operative networks in governing sustainability transitions overcome traditional institutional barriers that actors might face individually, by tapping into the common interests and capacities of the state, the market, and the civil society. Achieving multi-level governance in small and intermediary cities of the global South can help overcoming many of the barriers noted by the sources. For instance, when governments are leading the intervention, they often point to a lack of local will in the take up of interventions. In the bottom up projects of self-governance, there is a clear indication

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of the need from support of governments in providing infrastructure and protections. In small cities where funding and infrastructural deficits are high, advancing long-term, trust-worthy partnerships are key in advancing environmental transitions.

The signs presented in Table 4 indicate the involvement of different stakeholder groups in each case: with – meaning not represented; +/-, weakly represented; +, actively represented and ++, very actively represented. We define ‘very actively represented’ actors as those that are leading the action but also financing or driving the political will for the intervention. Any other level of involvement is marked as ‘actively represented’. We only use ‘weakly represented’ if the literature specifically points to their weak capacities. If there were literature gaps in relation to the role of a given actor, the cell is left empty to signify missing information.

**Table 4.** Involvement of actors in city-level initiatives

Case	Actors								
	Global actors and networks	National government	Provincial government	Municipal government	Business actors	Social and cultural institutions	Political leaders, Volunteers	Academic community	Local communities, households
Surat	++	+	+	++	++	-		+	-
Dong Ha	++		+	+	+	-		+	-
Nakuru	+	++	++		+	+		-	+
Udon Thani		++		++	++	+	+	+	
Manizales		++	+	++	+	+	+	+	+
St Bernard	+	+		+		++	++		++
Khulna		-				+			++

However, the involvement of different actors may not always imply successful outcomes. Political and institutional inertia were found to be significant barriers to climate experiments in the Bai et. al. study (2010). Similarly, we find that enabling institutional co-ordination and political will of local governments are one of the main barriers in four of our cases (Surat, Dong Ha, Nakuru and Khulna). Lack of an integrated policy framework and funds for addressing climate risks and urban adaptation in many developing country regions hinder local action. Scaling up of pilots require influx of resources which can be hard to locate. For Manizales, even where the national policy support exists, funds are decreasing due to shifting national priorities.

The lack of financial autonomy and resources barriers also play a key role in hindering action. Some of the cities under consideration such as Nakuru and Khulna have persistent challenges in improving and universalizing service provision, and weak capacities to plan for urban expansion compound these barriers. Conflicts or tensions over land, like in the cases of Dong Ha, St Bernard or Khulna, can weaken trust between parties. Little or dwindling interest in community participation and lack of people’s awareness is also an issue, pointing to the relatively slower momentum in community mobilization in smaller cities compared to primary cities. In Nakuru, citizen participation in decision-making and service delivery is hindered due to the lack of integration between multiple government actors. The participants in our

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stakeholder workshops indicated that they were unaware of the issues allocated to different departments, coupled with the fact the response level of the duty bearers is minimal.

While the key thrust areas of TMNs are shaped by global discourses on sustainability, emission reduction or resilience (Bulkeley and Betsill, 2005; Long and Rice, 2018), in our example of Surat, the local partners have influenced the design and outcomes of the project based on their motivations and expertise (Chu, 2016). There can be contesting notions for development even within an organization, as seen in the case of the ADB resilience building project which notes ADB's push for technocratic solutions as a barrier in realizing urban adaptation. However, reflecting on these contradictions and pitfalls by the core group can itself be seen as a conceivable way forward for advancing sustainability transitions. CBA measures have an impact on activating political capacities and transforming and challenging governance mechanisms in intermediary cities with limited resources and capacity. However, we find that there are fewer partnerships with more powerful actors and governments involved to support CBA (Table 4).

Governments are achieving their environmental goals in partnership with social or business institutions to tap on external resources or technical expertise, as elaborated in the previous section. Provincial governments are playing a key role in stirring policy directions for cities as seen in the cases of Dong Ha and Manizales and are also involved in building partnerships in Nakuru. Local governments lead collaborative governance processes by steering public awareness and motivating volunteer efforts in environmental management processes like in Udon Thani or Manizales, showcasing high potential for becoming leaders in multi-level environmental governance amongst small and intermediary cities (Table 4). There is a need to critically reflect upon the inclusion element in urban transitions, as new forms of governance are created while actualizing these partnerships. For example, CDCs are appearing in a number of Thai cities, largely in response to a national strategy to achieve smart cities and to catalyze the involvement of the private sector. This raises the question of whether a new monetary mechanism will emerge in these types of urban development, where the city dwellers will have to pay these business partnerships in return for a number of services rather than expecting service delivery from the local government.

### Conclusion

Small and intermediary cities mainly play a limited role in global or national politics of sustainable urban development, but their unique pathways in achieving urban sustainability transitions merit attention. Urban sustainability transitions in small and intermediary cities of the global South are analyzed in our paper, in order to explain variations in the framing of the outcomes and their inclusion outcomes. One of the limitations of our study is that most of the analysis is based on secondary sources, and therefore, the parameters could have been inconsistently assessed by different sources. Secondly, the study design does not allow us to distinguish features of urban sustainability transitions in 'intermediary', 'small' versus 'primary' city contexts. More comparisons across city sizes within a similar policy context can help understand these differences (Marais et al., 2016). While the results from a comparative case study analysis are not likely generalizable to predict outcomes in other small or intermediary cities with different political or socio-economic settings, they can stimulate reflections on similar challenges and opportunities and facilitate South-South learning.

It is found that the inclusion outcomes of urban sustainability interventions can hinge on different factors such as the actors leading or financing interventions and that the drivers shape the way interventions are formulated. In resource-scarce contexts where there are



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trade-offs to investing in sustainability interventions, participation and involvement of poor communities, civil society groups, and other institutions are essential in order to gather momentum to build a unified, local vision and ensure that the poor are not made worse off.

Some of the limitations in applying multi-level governance framework in small and intermediary cities of the global South are also noted. Smaller cities with lesser resources or autonomy have difficulty in mobilizing taxes and utilizing funds for designated sustainable projects. This calls for coordinated multi-level policy frameworks to earmark funds for environmental management, in addition to providing a flexible institutional governance that enables city governments to decide independently on the allocation of resources based on local risks and priorities. There is a burden on the urban poor to finance and organize their adaptation interventions, in lieu of support from governments or other powerful actors. Sustainability interventions will have to prioritize needs for better service provision or natural resource management, as self-governance cannot substitute service provision and lagging action in these areas will have adverse impacts on the adaptive capacities of the urban poor.

The involvement of multiple actors and mechanisms are transforming the nature of governing sustainability transitions in small and intermediary cities of the global South. Greater inspection is required to balance the sustainability and inclusivity outcomes of these interventions, and to overcome the barriers that emerge as a result. More in-depth study is necessary for an understanding of the contextualized needs, policy gaps and potential challenges of small and intermediary cities in achieving an inclusive and sustainable future. Through these entry-points and considerations, we hope that planners, donors, governmental, and non-governmental actors leading, driving, and financing interventions can reflect on instituting long-term collaborative partnerships and trust with different stakeholders, towards achieving holistic solutions for urban sustainability.

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