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Santiago, Chile

Beyond Adaptive Capacity Checklists: Examining the Construction of Capacity in Mexico City and Santiago

Patricia Romero-Lankao, Sara Hughes, Angélica Rosas-Huerta, Roxana Borquéz and Melissa Haeffner

Cities are vulnerable to a range of environmental hazards that are likely to be exacerbated by climate change: floods, droughts, poor air quality, and heat islands are a few examples. Assessments of this vulnerability often include an evaluation of a city’s adaptive capacity, or its potential to respond to changes in the frequency or severity of environmental hazards as well as its ability to take advantage of or mitigate these changes. For example, at the city (e.g., institutional) level, a common metric of adaptive capacity is the availability and effective use of information. In many cases, a city would receive a yes/no rating, or perhaps a score between 1 and 10, to indicate an existing quantity of adaptive capacity embodied in the city’s decision-making processes and institutions. However, from both a research and practitioner perspective this method of assessment is not able to produce a useable understanding of the mechanisms and systems that underpin the availability and effective use of information in a city agency.

In an effort to address this challenge in urban vulnerability research we have undertaken a comparative study of the construction of adaptive capacity in two Latin American cities: Santiago de Chile and Mexico City, Mexico. This work is one outcome of the Inter-American Institute-funded ADAPTE project (ADaptation to the health impacts of Air Pollution and climaTE extremes in Latin American cities) that has supported an international team of researchers in Santiago, Mexico City, Buenos Aires and Bogotá¹.

Environmental planning, risk and vulnerability in Latin American cities

Cities in Latin America are simultaneously facing pressure to meet development aims (e.g., water service provision, housing needs) and respond to the potential effects of climate change. As a result, Latin American cities have a policy agenda that is both local and global. The region’s population is nearly 80% urban, and demands for housing and economic opportunities currently outpace development, thus challenging the achievement

¹ The results of the research will be published in: Romero Lankao, P., Hughes, S., Rosas Huerta, A., Borquéz, R., Qin, H., & Lampis, A. (2012). Toward an integrated assessment of urban vulnerability and risk: insights from Latin American cities. *Environment and Urbanization* (under review).

of sustainability goals. Neoliberal reforms are an additional globalizing force: open markets and decentralized decision-making have helped to change the role of Latin American cities in national and global economies. Climate change is but one example of this restructuring. Cities in Latin America are actively participating in transnational networks such as ICLEI - Local Governments for Sustainability and their representatives have been attending the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties sessions. Despite their economic and social importance to the region and the world, Latin American cities have been particularly understudied in terms of the complexity of factors that determine urban vulnerability and risk at the city level, and their capacity to respond and adapt to these hazards.

Mexico City and Santiago present useful case studies for evaluating the construction of adaptive capacity in Latin American cities. In both places, climate models predict that mean temperatures will increase and mean precipitation will decrease with climate change. Both cities are also expected to experience more intense droughts, heat waves and flood events. Economically, the two cities are the hubs of their country's economies, generating 34% (Mexico City) and 43% (Santiago) of national GDP. One difference between the two cities is the timing of their response to these predicted changes. Mexico City has been an early actor in taking steps to mitigate and adapt to climate change, while Santiago is in the process of releasing its first climate change action plan. Using these two cities, therefore, allows us to compare the challenges and opportunities that early and late actors experience in building or leveraging adaptive capacity.

Research methods

We used four metrics of institutional adaptive capacity to guide or investigate: (1) cooperation between different governmental sectors and levels, and between governmental authorities, NGOs, citizens, and experts; (2) a legal framework that shapes strategic regulation of emitting sectors, risk management, and flexibility; (3) mechanisms by which the public and stakeholders are able to participate and be represented in decision-making; and (4) the availability, exchange, and use of information for decision-making (Adger et al., 2007; Engle & Lemos, 2010; Moser & Satterthwaite, 2008; Pelling & High, 2005). While not necessarily comprehensive, they provide a basis with which to evaluate the construction of adaptive capacity in urban policy making.

We conducted interviews with decision-makers, managers, and representatives from academic and non-governmental

organizations to understand the processes through which adaptive capacity is created or eroded. The interviewees were asked about their role in climate planning; how they use, access, and share information; the mechanisms through which they engage with communities or encourage participation; and their perception of how, and how well, the legal framework in their city is suited to addressing the challenges of climate change.

Cities may face similar constraints despite an early actor advantage and this is due to the fact that adaptive capacity is the product of broader political and institutional features of urban governance.

Results

Actor networks

An important insight from this study is that climate change planning – and even environmental planning more broadly – is firmly embedded within the broader structures of each city's politics, funding priorities and constraints. While cooperation and coordination are key components of adaptive capacity, there are very few mechanisms in place to allow or encourage coordination across sectors or levels of government in political systems that have no legacy of this type of governance. In centralized systems like those in these Latin American cases, urban policy agendas can be dominated by federal funding priorities and local authorities are left without the means to take action to effectively manage vulnerability and risk. In both Santiago and Mexico City climate change is housed in the environmental sector, which is often already marginalized within city politics. Turnover is an additional barrier to longer-term relationship-building because administrators and politicians are often in office for a single three-year (Mexico) or four-year (Chile) period.



Mexico City

Leadership may be one effective tool for building broader networks for collaboration. In the case of Mexico City, former mayor Marcelo Ebrard took a very active role in building the climate policy agenda. His efforts generated programs and funding streams that are helping maintain momentum behind climate change planning.

Legal framework

Both Santiago and Mexico City have a longer-term tradition of disaster management that has helped to define the legal framework in which climate change planning is embedded. However, interviewees in both cities see disaster management as reactive rather than proactive. This may be due in part to the fact that climate change and preventative programs are secondary to other development concerns, such as estate development and housing. Furthermore, some of the departments and ministries that would like to (or need to) work on addressing climate change do not have the legal backing to do so.

One difference between the two cities is the degree to which the legal and regulatory tensions between development and conservation (particularly in land-use) are explicit. In Mexico City there is a distinction between zones for development controlled by the Urban Development Program and zones for conservation

controlled by the General Program for Ecological Planning. In Santiago, urban growth is prioritized through programs such as Priority Areas for Urbanization and Conditional Urbanization Areas; there is no explicit mechanism for managing land for environmental purposes (such as recharging aquifers or maintaining open space).

Participation

Participation mechanisms for climate change planning in both cities primarily consisted of workshops and consultation processes with other government agencies, academics, and NGOs. There was very little involvement of the public and community members, due largely to two factors: a perception in the government of public apathy and ignorance and a political culture that does not traditionally value or encourage direct public engagement in decision-making. One Mexican authority said, “We need to break the apathy of the population. They don’t respond. They don’t ask for accountability. They are apathetic. So there is a lot of inertia among many decision-makers and we need to address that and make sure that climate change is considered a priority.”

One opportunity for improving participation comes again from disaster management, which is rather unique in the two cities with its ability to engage communities, and the sector has a history of communicating directly with vulnerable households. Building on disaster management’s public engagement mechanisms for climate change planning could be a useful strategy for bringing communities and their views into the process.

Availability and use of information

Climate change is a relatively new policy area in both Santiago and Mexico City, though Mexico City has been engaged with climate change science and planning for a longer period of time. Because of this relative newness, the information needed or desired for climate change planning is not always available. In particular, both cities are lacking an understanding of local risks and vulnerabilities and climate scenarios on which to build adaptation strategies. New types of information are needed. In addition, the information that does exist is dominated by technocratic approaches to climate change planning and is largely in the hands of federal authorities. The transmission of information is top-down due to both a real and perceived lack of capacity at the local level.

One innovation in Mexico City is the Virtual Climate Change Center, a platform established by the city government and the National University of Mexico (UNAM) to facilitate information sharing between decision-makers and researchers.

Decision-makers are encouraged to share their information needs and researchers work to stay current and relevant in climate science. This is a new model for the city and could prove to be an effective tool for improving the availability and use of information in climate change planning.

First conclusions

The findings from this project have demonstrated two important features of urban adaptive capacity: cities may face similar constraints despite an early actor advantage and this is due to the fact that adaptive capacity is the product of broader political and institutional features of urban governance. While Mexico City is beginning its third stage of climate change planning, Santiago is set to release its first plan in September 2012. However, both cities face similar challenges to building and exercising their adaptive capacity in the form of networked actors, an effective legal framework, public participation, and the use of information in decision-making. This is due in large part to the ways in which the broader system of urban governance shapes these features of adaptive capacity. Urban governance in Santiago and Mexico City prioritizes growth and development and operates in a highly top-down political system. Increasing adaptive capacity in these cities would require broader shifts in the institutional landscape.

Our aim with this research and with the ADAPTE project more broadly is to generate a more nuanced understanding of urban vulnerability and risk. The pathways and mechanisms through which environmental hazards, communities, and governance systems interact are interdependent and nonlinear. Future work should continue to explore these dynamic relationships in Latin America with the aim of fostering resilient and sustainable cities.

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