Climate Change Adaptation and Resiliency Framework

INSTITUTE FOR INTERNATIONAL URBAN DEVELOPMENT
Background

Throughout the world, developing countries are experiencing high rates of internal migration and urbanization. These rapidly growing urban areas are characterized by the growth of informal settlements in the urban core and peripheral areas. Lower-income urban populations tend to live on exposed sites, such as slopes, areas prone to flooding, sea surges, or other environmental and weather-related risks. The residents of these precarious settlements are particularly vulnerable to climate change events that have consequences for human health, livelihoods, family assets, and social inclusion. Although climate change has a far-reaching affect on many human settlements, it disproportionately impacts low-income and other disadvantaged groups, as recently evidenced by Hurricane Katrina, Hurricane Mitch, and Super Typhoon Haiyan.

The incidence and severity of climate change related events are escalating and building resilience to climate change is becoming a high priority in the global development agenda. Even with this renewed focus on adaptation, cities tend to take a reactive approach to addressing climate change that does not take into consideration the underlying causes of risk. Their interventions tend to be remedial when emergencies arise rather than part of a strategic approach to resist, accommodate and recover from shocks.

Urban policies that attempt to address climate change have largely been focused on mitigation, but there has recently been a shift toward the development of resilient cities that can respond and adapt to climate related disruptions. Resilience assumes that climate change is occurring, and instead of aiming to sustain the status quo, tries to improve the ability of individuals, communities, or systems to recognize and adapt to climate related disturbances.

Our Approach

This idea of resilience provides the overarching concept that frames our approach to climate change adaptation with a focus on the urban poor and other vulnerable populations. We understand adaptation as a continuous and dynamic process that takes many forms. It is intensely local, and resists easy definition and measurement. Therefore we have developed a framework for adapting to climate change that is flexible and includes the participation of residents, business, civil society and local officials to elaborate and manage interventions.

Climate change policies are usually developed on a national scale, but what differentiates our framework from others is our focus on the local level, where climate change-related events are experienced and adaption strategies are implemented. Within this framework, our approach provides a way for local authorities to conceptualize climate change adaptation that recognizes their particular circumstances, organize policies around this issue, and affect change. The participation of local authorities and community organizations is critical to ensure the sustainability of interventions.

This approach was initially developed through a climate adaptation and resiliency planning process for informal settlements in Cartagena (Colombia) and Condega (Nicaragua) that we undertook in 2013 with financial support from the Lincoln Institute of Land Policy.
Our Framework

Through our focus on action research we have developed an approach that provides a framework to develop strategies that can be implemented within a wide range of situations and cultures. At the core of this framework is the notion of taking global climate change and providing an attainable way to contextually think through the issues and provide a course action for addressing the inevitable local impacts.

Based on the documentation of climate change effects and adaptation approaches developed by the International Panel on Climate Change (IPCC), this integrated framework focuses on the specific risks faced by informal and lower-income settlements. It conceptualizes climate change adaptation as a multidimensional issue and offers a way to both understand and address the underlying causes of risk.

We view risk as a combination of three components:

- *Exposure* to natural hazards due to geographic location;
- *Vulnerability* to small- and large-scale weather events due to socioeconomic conditions;
- Lack of institutional *capacity to adapt* due to inadequate of infrastructure systems, inefficient land management, and a lack of inclusive development policies.

These three components provide the basis of our climate change adaptation framework, which is depicted in the diagram below.
Our approach puts people and communities at the center of the analysis. We believe that the starting point in managing risks and building long-term community resilience is an understanding of exposure and sensitivity to a given set of local impacts. Cities are dynamic systems that face unique climate impacts; their adaptation must be tailored to local circumstances. This involves assessing past and potential climate change impacts, natural systems, and processes and how human settlements interact with them; understanding infrastructure and services; and addressing public health issues within a community.

Climate change adaptation policies have been framed primarily in relation to disaster risk management and view vulnerability in terms of site characteristics, infrastructure and housing patterns. Our approach to resilience building goes beyond those physical indicators to integrate factors relating to livelihoods and income-generating opportunities, access to health and education, and social inclusion. By understanding who is most likely to suffer from climate change hazards, and the processes through which vulnerability is produced and reinforced, communities can design more effective mitigation and adaptation measures using a wider range of planning tools and policies. An approach that emphasizes an understanding of vulnerability also helps guide the allocation of resources towards measures that will have the greatest positive impact on reducing the risk of low-income communities.

Institutional development, community empowerment, and use of technology are critical to enable change in awareness and resilience-building activities. Participatory governance, effective communication and coordination among local governments, community organizations and citizens fosters social cohesion and facilitates the complex operations needed as part of effective disaster management, at a time when different actors must communicate and cooperate quickly and effectively in order to minimize a disaster’s effects. Improvements in technology can enhance system performance and enable coordination between agencies and people. Increasing the capacity and accountability of local governments and social networks can enable vulnerable populations to better cope with risk. Effective management and committed participation form the building blocks of strong social networks and participatory governance.

Our approach also examines the interaction of policies and adaptation measures, with a focus on low-income communities to highlight the social dimension of risk exposure. In order to stem the proliferation of informal settlements and foster spatial socioeconomic integration, urban development strategies should also address the land requirements of the urban poor and incorporate transportation and connectivity. Providing accessible land in safe areas for both formal and informal settlements is critical to steering development away from risky areas. Overwhelming growth, poor planning and the lack of affordable serviced land are major drivers of settlements in hazardous areas. Inclusive development concepts must permeate urban planning and land management policies and contribute to shaping urban growth.

Our framework addresses the individual risks and challenges associated with climate change adaptation for at-risk communities, and provides a holistic way to conceptualize this pervasive problem. Combining issues of physical exposure, socioeconomic conditions, and institutional capacity allows the definition of strategies and policies that address the needs of those most vulnerable to the impacts of climate change.

The staff of I2UD is continuously exploring opportunities to leverage their experience in urban planning and management to meet the challenges of climate resilience. Please visit our website or contact us for more information about our work and potential partnerships.