

SECTION

06



Conclusions

This Primer initiates a learning process for local governments. It looks at the issues of climate change, the potential consequences of climate change that can affect cities, and the critical relationship between current urban development and local government financial trends with climate change, disaster risk management, and sustainable development. The Primer recommends a thorough city self-assessment and a comprehensive information base as starting points; it provides sound practices, case studies, and resources that a city can use as follow-up to building its programs for resilience.

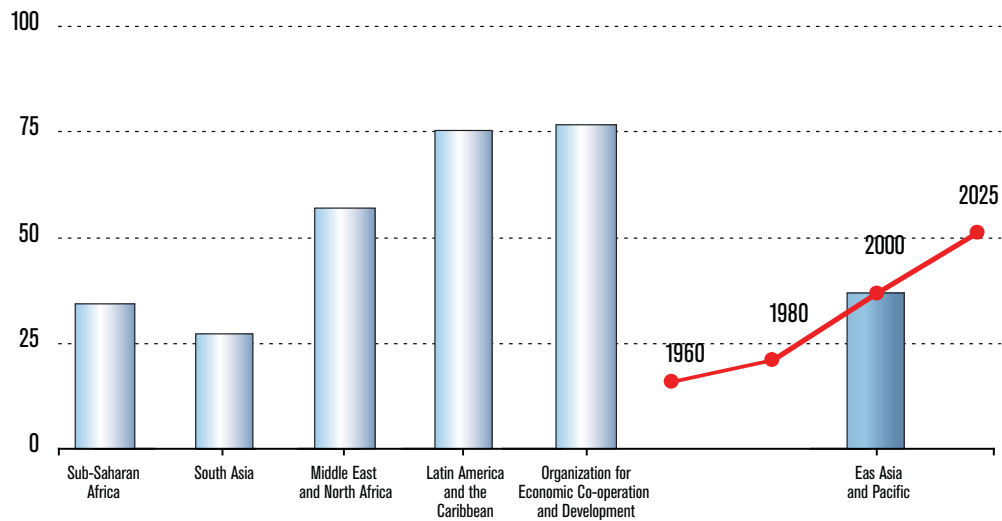
BUILDING A RESILIENT CITY

East Asia is experiencing urbanization at an unprecedented rate (Figure 6.1). The growth is far beyond the capacity of city governments to provide infrastructure and basic civic amenities. As a result, East Asian cities are becoming more vulnerable to the impacts of natural hazards, including those due to potential impacts of climate change. The governance of urban areas is concurrently becoming increasingly decentralized, with greater responsibilities assigned to local governments, many faced with managing immense population growth, often without correspondingly increasing financial resources. And in this mix are the almost-certain risks from unpredicted disasters.

East Asia is highly vulnerable to climate change impacts. It is clear and undeniable that something can and must be done to lower GHG emissions and to attend to the consequences climate change may bring about through sea-level rise, temperature rise, increased precipitation, and extreme events. The most obvious impact on cities, especially those in East Asia, will be more frequent and more severe disasters.

The degree of impact from which cities suffer from climate change will depend on the actions and initiatives local governments take now to build a resilient city. East Asian local governments understand this responsibility and are engaging with authorities to act. Addressing climate change is part of good urban management. City officials need to understand the urban characteristics that make

FIGURE 6.1/ Urban population (% of total) is rapidly increasing in East Asia

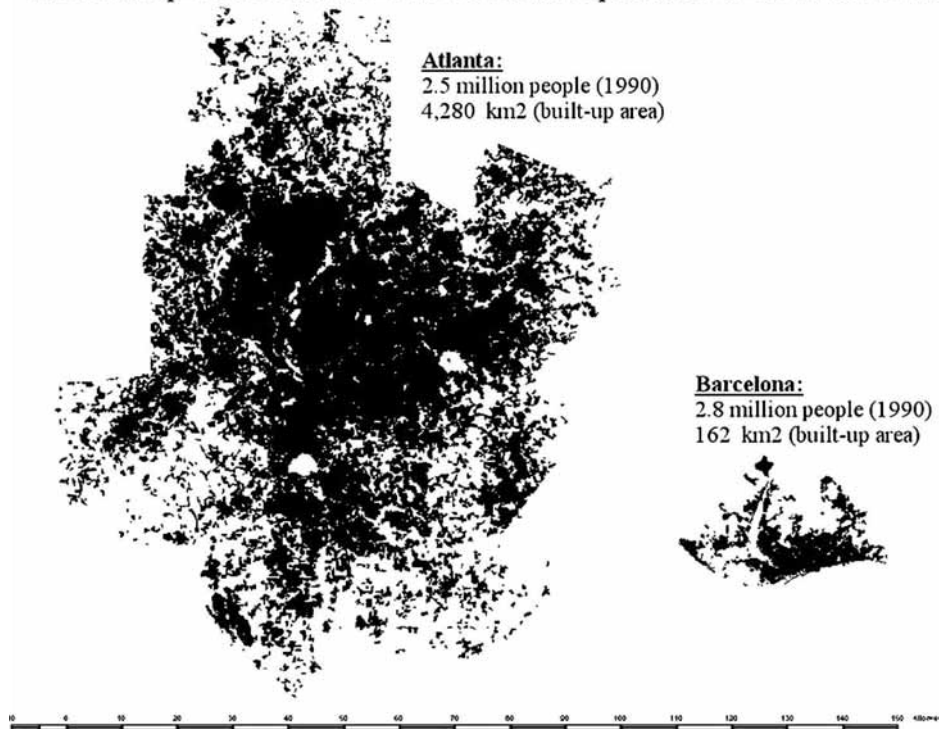


Having compact, efficient, and walkable cities is an important mitigation measure. Equally important is safety in building siting, design, and codes as a key adaptation measure, especially for the poor, to avoid settlements on marginal lands most susceptible to climate change impacts and other natural hazards.

the city susceptible to disaster risk and climate change, such as determining if the city is a Hot Spot. The city needs to establish and manage a consolidated information base that can play a huge part in devising the most appropriate urban management strategies.

The experiences of many cities around the world affirm that a “no-regrets” approach to mitigation and adaptation initiatives can be highly effective and sustainable. This approach promotes the necessary changes in behavior, technology, and policies as simply sound urban management—necessary under any circumstances. When this no-regrets approach is supplemented with specific measures on climate change impact mitigation and adaptation and on disaster risk management, the probability of enhancing a city’s resilience capacity becomes very high. Urban growth should become synonymous with “walkable cities” and energy conservation. Urban development models centered around the automobile, suburban living, and cheap fuel will need to be based on other more efficient conditions. Figure 6.2 shows two cities, Barcelona and Atlanta, with the same population but with Atlanta having 26 times the footprint of Barcelona. Having compact, efficient, and walkable cities is an important mitigation measure. Equally important is safety in building siting, design, and codes as a key adaptation measure, especially for the poor, to avoid settlements on marginal lands most susceptible to climate change impacts and other natural hazards.

However, the high density of people in cities increases vulnerabilities. Eight out of the 10 most populous cities in the world, including 5 in East Asia, have moderate to high earthquake hazard. Similarly, 8 out of 10 of the most populous cities are located on the coast and are vulnerable to storm surges and tsunami waves. Climate-related vulnerability increases not only from flooding due to more precipitation and storm surges, landslides, drought, saltwater intrusion, and typhoons, but also earthquakes and other hazards, particularly where poor quality and ill-maintained infrastructure, low-quality building stock, and lower resilience of high-density urban development come into play. Identifying those vulnerabilities and developing programs to address them is the challenge facing East Asian cities.

FIGURE 6.2/ Urban footprints—the choice facing cities**The Built-up Area of Atlanta and Barcelona Represented at the Same Scale**

Source: Bertaud, A., and T. Pöde, Jr., *Density in Atlanta: Implications for Traffic and Transit* (Los Angeles: Reason Foundation, 2007).

There is a strong relationship between climate change impacts management, disaster risk management, and sustainable development. To not take action in all three areas puts at risk any progress in building resilient cities and thriving local economies. To not become better informed about climate change and its consequences diminishes the establishment of practical policies and programs to address impacts and disaster events.

LEARNING FROM OTHER SUCCESSES

There is no single “magic” recipe for successful planning to respond to climate change impacts and disaster risks. There is no single sequence of measures, tools, application, and procedures. The Primer aims to motivate city officials to take actions based on existing sound practices.

The Primer provides sound practices to address the major vulnerabilities and risks. It covers many aspects of successful planning, from defining organizational structures and institutional mechanisms, to generating public awareness and engaging stakeholders. Each illustrative example offers a potential option. Milan has set up an atmospheric emissions inventory. London is defining appropriate risk-financing methods for land-use planning and flood defense. Makati City reduces electricity consumption by replacing street lights with more energy-efficient systems. Albuquerque aims to reduce greenhouse gases by requiring new buildings and renovated existing buildings to be more energy efficient.

The bottom line is to have a strategy that best prepares your city to act and react effectively to climate change impacts and disaster risks.

Nevertheless, any example should be adapted to the specific context of a city as part of its unique management strategy. The Primer narrows its measure of success for a resilient city into four salient points:

- Understand the threats that impact your city;
- Assess the unique characteristics and vulnerabilities of your city;
- Learn from the experience of other cities; and
- Devise a plan “your own way.”

The bottom line is to have a strategy that best prepares your city to act and react effectively to climate change impacts and disaster risks.

TAKING ACTION

The Primer’s approach for a resilient community to deal with climate change impacts and disaster risk management issues utilizes a dual track:

- Engage the local officials with the need to lower GHG emissions and present sound practices of cities that are doing so through mitigation programs of energy efficiency, greater use of nonfossil fuels, control urban sprawl, public transport, recycling of wastes and improvement of water reclamation; and
- Address the consequences of climate change and the increased frequency and intensity of extreme and episodic events, including storm surges and typhoons. Adaptive measures will prepare for and control the conditions and disasters that will be made worse due to climate change.

With the tools the Primer is proposing and the resources it is providing, the city should be better prepared to accomplish the following:

- **Create a Climate Change Impacts and Hazards Workbook** to establish a City Information Base that records and consolidates information describing the city context and particulars of the city’s vulnerabilities and future growth.
- **Set priorities to reduce climate change impacts and address disaster risk.** With the background gathered from the City Typology and Risk Characterization Matrix and the City Information Base, the city should be able to recognize and find ways to address its priorities.
- **Establish a city mandate** through executive orders and city council legislation that articulates commitment and establishes a transparent record to guide, monitor, and evaluate a city’s progress.
- **Identify ways and means of dealing with hazard management** to mitigate and adapt to changing conditions and events.
- **Seek external partners to assist in the process,** either with financial assistance or technical assistance, for defining vulnerabilities and risks and for selecting the most appropriate measures to enhance city resilience and sustainable urban planning.



- **Develop, finance, and implement plans and programs** to accomplish goals. The city needs to set up an action plan that not only defines priorities, but also introduces specific programs, budget, targets, and timelines.
- **Engage citizens and other cities**, partnering to develop a broader and more effective resilient community.
- **Monitor, evaluate, and modify the initiatives** as needed and as the city accomplishments allow.

▲ *Early action today will help to build a more resilient society for future generations.*

Each city must define its own strategy to become a more resilient community. The Primer advocates planning now. The strategy must address climate change impacts according to each city's own vulnerability, risks, and needs. The Primer is a tool to engage the city in training, capacity building, and self-assessment. How to move forward, on the basis of awareness, wisdom, resources, and expectations, comes from the leadership that aspires to see its city and its citizens living in a more resilient environment.