



► **“Disaster risk reduction is an investment, not a cost. It increases business returns. Albay has seen a surge in investments, even after typhoons and volcanic eruptions. Climate change adaptation and risk reduction allow development to proceed amid disasters, since they don’t disrupt people’s lives when the local government takes charge of the disaster.”**

Joey Salceda, Governor of the Province of Albay, Philippines. First Champion, Making Cities Resilient Campaign.

Introduction

Purpose of this Handbook

This Handbook is designed primarily for local government leaders and policy makers to support public policy, decision making and organization as they implement disaster risk reduction and resilience activities. It offers practical guidance to understand and take action on the “Ten Essentials for Making Cities Resilient,” as set out in the global campaign “Making Cities Resilient: My City is Getting Ready!”

The Handbook is built on a foundation of knowledge and expertise of Campaign partners, participating cities and local governments. It responds to the call for better access to information, knowledge, capacities and tools to effectively deal with disaster risk and extreme climate events. It provides an overview of key strategies and actions needed to build resilience to disasters, as part of an overall strategy to achieve sustainable development, without going into great detail. Each city and local government will determine how these actions apply to their own context and capacities. There is no one-size-fits-all solution.

The annexes to this Handbook contain more detailed information, including links to electronic tools, resources and examples from partner cities. A web-based information platform, where cities and local governments can share their own tools, plans, regulations and practices, complements the Handbook and will be available through the Campaign website at www.unisdr.org/campaign.

Throughout the Handbook we refer to “cities” and “local governments.” The approach to resilience, as described, also applies to sub-national administrations of different sizes and levels, including at regional, provincial, metropolitan, city, municipal, township, and village level.

Photo: UNISDR



The City of Kobe, Japan, with 1.5 million inhabitants, suffered great losses during the Great Hanshin-Awaji Earthquake in January 1985 (7.2 Richter scale), disrupting the activities of one of the busiest ports in the region. The recovery focused on creating a safer city, where complex infrastructure and service systems are balanced with human interaction, education and community cooperation.

Context

Mayors, local government officials and decision makers frequently must deal with the impact of small- and medium-scale disasters—and less frequently with large-scale events—that arise from natural or man-made hazards. Climate change and extreme weather events are likely to increase the city's exposure to hazards and risk. Less obvious is the fact that regular development practices may also generate complex environmental change and contribute to increased risk, if they are not taken into account and acted upon.

In disasters, local governments are the first line of response, sometimes with wide-ranging responsibilities but insufficient capacities to deal with them. They are equally on the front line when it comes to anticipating, managing and reducing disaster risk, setting up or acting on early warning systems and establishing specific disaster/crisis management structures. In many cases, a review of mandates, responsibilities and resource allocations is needed to increase the capacity of local governments to respond to these challenges.

To understand that disasters are “not natural”, it is important to consider the elements of risk. Risk is a function of the hazard (a cyclone, an earthquake, a flood, or a fire, for example), the exposure of people and assets to the hazard, and the conditions of vulnerability of the exposed population or assets. These factors are not static and can be improved, depending on the institutional and individual capacity to cope and/or act to reduce risk. Societal and environmental development patterns can increase exposure and vulnerability and therefore increase risk.

$$\frac{\text{Hazard x Vulnerability x Exposure}}{\text{Resilience or coping capacities}} = \text{Disaster Risk}$$

Why are Cities at Risk?

Drivers of Risk in the City Environment

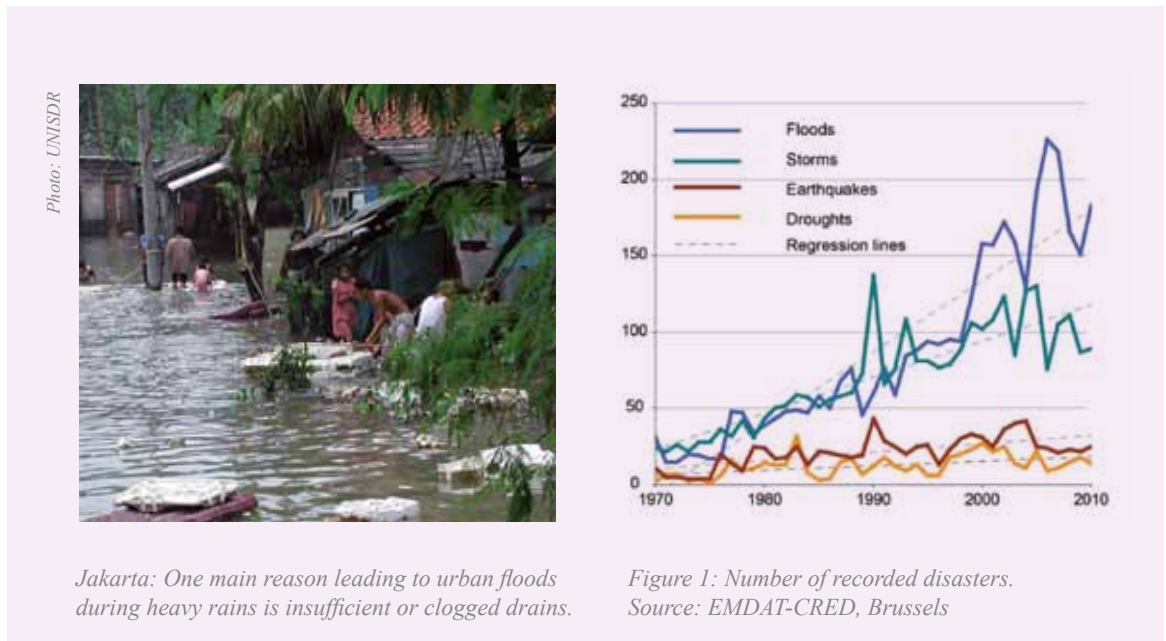
Cities and urban areas represent dense and complex systems of interconnected services. As such, they face a growing number of issues that drive disaster risk. Strategies and policies can be developed to address each of these issues, as part of an overall vision to make cities of all sizes and profiles more resilient and livable.

Among the most significant risk drivers are:

- Growing urban populations and increased density, which put pressure on land and services, increasing settlements in coastal lowlands, along unstable slopes and in hazard-prone areas.
- Concentration of resources and capacities at national level, with a lack of fiscal and human resources and capacities in local government, including unclear mandates for disaster risk reduction and response.
- Weak local governance and insufficient participation by local stakeholders in planning and urban management.
- Inadequate water resource management, drainage systems and solid waste management, causing health emergencies, floods and landslides.
- The decline of ecosystems, due to human activities such as road construction, pollution, wetland reclamation and unsustainable resource extraction, that threatens the ability to provide essential services such as flood regulation and protection.
- Decaying infrastructure and unsafe building stocks, which may lead to collapsed structures.
- Uncoordinated emergency services, which decreases the capacity for swift response and preparedness.
- Adverse effects of climate change that will likely increase or decrease extreme temperatures and precipitation, depending on localized conditions, with an impact on the frequency, intensity and location of floods and other climate-related disasters.

Globally, the recorded number of hazard events that adversely affect human populations is on the rise (see trends in Figure 1). Each local and urban context is affected differently, depending on the prevailing hazards in each location and the exposure and vulnerabilities as stated above (see more in Chapter 2, Essential 3).

Figure 1 shows recorded disaster events worldwide and indicates an increasing trend as well as number of actual occurrences. The figure indicates that the number of recorded seismic events (deadliest in terms of loss of life) is relatively constant, but points to an increase in the reported number of storms and floods. In many parts of the world, the risks associated with weather-related hazards are on the rise (the risk of economic losses is also on the rise, although fewer deaths have been recorded). The number and intensity of floods, droughts, landslides, and heat waves can have a major impact on urban systems and resilience strategies. Depending on the location, climate change is likely to increase the frequency of precipitation in many regions. This will imply changes in flood patterns and contribute to upward trends in coastal high water levels.



These extremes need to be factored into future land-use plans and other measures, according to the IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. The increase in impact will remain largely dependent on human activity in terms of exposure and vulnerability (see Annex 3).

What is a Disaster Resilient City?

Photo: UNISDR



San Francisco, Cebu, the Philippines, bringing the Hyogo Framework to local level planning.

A disaster resilient city:

- Is one where disasters are minimised because the population lives in homes and neighbourhoods with organized services and infrastructure that adhere to sensible building codes; without informal settlements built on flood plains or steep slopes because no other land is available.
- Has an inclusive, competent and accountable local government that is concerned about sustainable urbanization and that commits the necessary resources to develop capacities to manage and organize itself before, during and after a natural hazard event.
- Is one where the local authorities and the population understand their risks and develop a shared, local information base on disaster losses, hazards and risks, including who is exposed and who is vulnerable.
- Is one where people are empowered to participate, decide and plan their city together with local authorities and value local and indigenous knowledge, capacities and resources.
- Has taken steps to anticipate and mitigate the impact of disasters, incorporating monitoring and early warning technologies to protect infrastructure, community assets and individuals, including their homes and possessions, cultural heritage, environmental and economic capital, and is able to minimize physical and social losses arising from extreme weather events, earthquakes or other natural or human-induced hazards.
- Is able to respond, implement immediate recovery strategies and quickly restore basic services to resume social, institutional and economic activity after such an event.
- Understands that most of the above is also central to building resilience to adverse environmental changes, including climate change, in addition to reducing greenhouse gas emissions.

A Global Agenda and Campaign to Build Resilient Nations and Communities

The Hyogo Framework for Action

The Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA), was endorsed by the member states of the United Nations in 2005, and has since guided national policy and international organisations in their efforts to substantially reduce losses stemming from natural hazards. This Framework is comprehensive and addresses the roles of states, regional and international organisations, calling on civil society, academia, volunteer organisations and the private sector to join efforts. It promotes the decentralization of authority and resources to promote local-level disaster risk reduction.

The expected outcome of the Hyogo Framework is to substantively reduce disaster losses in terms of lives and the social, economic and environmental assets of communities and countries. The five HFA priorities for action are:



1. Build institutional capacity: Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.
2. Know your risks: Identify, assess and monitor disaster risks and enhance early warning.
3. Build understanding and awareness: Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
4. Reduce risk: Reduce the underlying risk factors through land-use planning, environmental, social and economic measures.
5. Be prepared and ready to act: Strengthen disaster preparedness for effective response at all levels.

Read more: www.unisdr.org/hfa

