I/ INTRODUCTION

Jakarta is the capital of the Republic of Indonesia and is the largest city in the country, with a population of over 15 million. Jakarta is an equatorial metropolis located in the southern hemisphere on the island of Java. The total area of the Jakarta metropolitan region is about 7,700 square kilometers, while the city has an area of approximately 660 square kilometers.

Jakarta has a special status in Indonesia and has its own provincial government, headed by the Governor. The city is divided into five administrative units, each with a local government headed by the mayor. The main responsibilities related to planning are vested with the provincial government, as is disaster management.

Jakarta has moderate risk of earthquakes due to the distance from the most active interplate boundaries. The city has a much higher risk of flood disasters because more than 40 percent of the city is situated below sea level. Another source of flood hazard is due to the 13 rivers that pass through the province, out of which three rivers are inter-provincial and are controlled by the central government. Different low-lying parts of the city experience flooding on an annual basis resulting in disruption of local economic and social activities. The flooding is due to the accumulation of rainwater as well as to incursion of seawater, since the seawall protecting the low-lying areas has been breached at some locations.

Jakarta is experiencing very rapid growth, and rapid development is taking place on the alluvial coastal plains. Several parts of the coastal plains are experiencing subsidence of around two to three centimeters every year.

II/ DISASTER MANAGEMENT STRATEGY

Indonesia is highly vulnerable to different natural disasters. The country is located along major subduction zones and frequently experiences devastating earthquakes and volcanic eruptions. The country also experiences several hydro-meteorological disasters at regular intervals. Due to the concentration of population in Jakarta, as well as its political and economic significance, disasters in Jakarta have very high impact on the affected people, as well as the country as a whole. Following the 2004 Indian Ocean tsunami, the...
disaster management system in the country was revised, and disaster prevention has been accorded high priority. The revised Disaster Management Law emphasizes the integration of disaster management planning with development policies to ensure that the resilience of the country is improved.

The revised Disaster Management Law emphasizes the integration of disaster management planning with development policies to ensure that the resilience of the country is improved.

The revised Disaster Management Law was enacted in 2007 (Law of the Republic of Indonesia Number 24 of the Year 2007). The revised law covers natural as well as non-natural or human factors that result in human casualties, environmental damage, loss of property, and psychological impact. The country’s objectives of disaster management, as per the revised law, comprise the following:

- Provide protection to the public from potential disaster.
- Conform with the current regulations having the force of law.
- Guarantee organization of planned, integrated, coordinated, and comprehensive disaster management.
- Show respect to the local culture.
- Set up participation and partnership of the public as well as the private parties.
- Encourage the spirit of mutual assistance, solidarity, and charity.
- Create peace in community life, nationhood, and statehood.

The Disaster Management Law has prescribed the responsibilities of the national, regional, and local governments. The national government responsibilities include:

- Prescribing disaster management policies in conformity with the national development policies.
- Designing development plans that incorporate the elements of disaster management policies.
- Deciding the status and level of a disaster, either national or local.
- Formulating policies on the use of technology, which may pose potential threats or hazards.
- Formulating policies on the prevention of depletion of natural resources for recovery, and
- Controlling national-scale mobilization and distribution of cash and materials.

The provincial or regional government that implements the revised law has the following responsibilities:

- Guaranteeing exercise of the rights of the disaster-affected and internally displaced persons in accordance with the minimum standards of service.
- Protecting the public from disaster impacts.
- Mitigating disaster risks and incorporating such risk mitigation in development programs.
- Earmarking sufficient funding for disaster management in the regional revenue and expenditure.

Regional governments are expected to take the lead in ensuring that a suitable response system for different disasters is created. The regional governments are also responsible for ensuring that all regional plans incorporate risk mitigation in the development plan. Since climate change is leading to environmental degradation, the revised Disaster Management Law also enables regional governments to respond to and plan various mitigation and adaptation strategies to climate change.

The Disaster Management Law recognizes that disaster management constitutes one of the elements of national development, taking the form of disaster management activities before, during, and after a disaster occurrence. In the past there was no special law concerning disaster management by which to adjudicate. The revised law provides a legal basis for the operation of disaster management and regulates activities in stages of disasters: (a) pre-disaster
period, (b) during disaster, and (c) post-disaster period so that they can be carried out in a planned and coordinated manner. Implementation of the Disaster Management Law requires systemic changes in various arms of the government, and is gradually being implemented.

The Government of Indonesia has prepared a National Action Plan for Disaster Reduction 2006–2009 since the National Middle-term Development Plan does not explicitly address the issue of disaster risk management. The Action Plan incorporates elements of disaster risk management in the area of social welfare, natural resources, and the environment. The disaster risk management activities are allocated through the following annual workplan of the Government:

- Enhancing natural disaster mitigation and climate forecasting.
- Spatial planning and natural resource protection zoning, including disaster-prone areas in coastal and sea areas.
- Developing natural disaster management system and early warning system.

An important element of the Plan is to strengthen the preparedness of institutions and the community in preventing and mitigating the risks of future natural disasters. The initiatives strive for sustainability and stakeholder participation. Strong commitment to selected priority actions characterizes these efforts. These priorities serve the purpose of laying a strong foundation for the implementation of an integrated sustainable disaster risk reduction program that is in line with similar efforts at the international level.

The National Action Plan for Disaster Reduction 2006–2009 mandates that five key priority areas for disaster risk reduction should be addressed:

- Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
- Identify, assess, and monitor disaster risks and enhance early warning.
- Use knowledge, innovation, and education to build a culture of safety and resilience at all levels.
- Reduce underlying risk factors.
- Strengthen disaster preparedness for effective response at all levels.

The Government of Indonesia is required to set up a National Disaster Management Agency (NDMA) as a nondepartmental body, which is equal to a ministry. The NDMA will consist of (a) a steering committee whose members include government officials and members from the professional community, and (b) an executive body whose members consist of professionals and experts. The NDMA has not yet been constituted, and the executive body, after its constitution, is expected to provide leadership to and facilitate implementation of the National Action Plan for Disaster Reduction.

The details of the various activities mandated through the National Action Plan for Disaster Reduction 2006–2009 are given below. These are under implementation by the government of Indonesia and are not fully functional.

Ensure that Disaster Risk Reduction is a National and a Local Priority with a Strong Institutional Basis for Implementation

National Institution and Legal Framework

- Support the creation and strengthening of national integrated disaster risk reduction mechanisms.
- Integrate risk reduction into development policies and planning, including poverty reduction strategies.
- Adopt or modify, where necessary, legislation to support disaster risk reduction, including regulations and mechanisms that encourage compliance and that promote incentives for undertaking risk reduction and mitigation activities.
- Recognize the importance and specificity of local risk patterns and trends, decentralizing responsibilities and resources for disaster risk reduction to relevant subnational or local authorities.

Resources

- Assess existing human resource capacities for disaster risk reduction and develop capacity-build-
Since climate change is leading to environmental degradation, the Government has taken steps to revise the Disaster Management Law, which enables regional governments to plan various mitigation and adaptation strategies to respond to climate change.

- Allocate resources for development and implementation of disaster risk management policies, programs, laws, and regulations on disaster risk reduction.
- Demonstrate the strong political determination required to promote and integrate disaster risk reduction into development programs.

Community Participation

- Systematically involve communities in disaster risk reduction, including in the process of decision-making for issues mapping, planning, implementation, monitoring, and evaluation. This would occur through the creation of networks.

Identify, Assess, and Monitor Disaster Risks and Enhance Early Warning

Risk Assessment at National and Local Scale

- Develop, update, and widely disseminate risk maps and related information to decisionmakers and the general public.
- Develop systems of indicators of disaster risk and vulnerability at the national and subnational scales to enable decisionmakers to assess the impact of disasters.

- Record, analyze, summarize, and disseminate statistical information on disaster occurrence, impacts, and losses.

Early Warning

- Develop early warning systems that are people centered, in particular, systems whose warnings are timely and understandable to those at risk.
- Establish and periodically review and maintain information systems as part of early warning systems.
- Establish institutional capacities to ensure that early warning systems are well integrated into governmental policy and decisionmaking processes.
- Strengthen coordination and cooperation among all relevant sectors and actors in the early warning chain in order to achieve fully effective early warning systems.
- Create and strengthen effective early warning systems in smaller islands.

Capacity

- Support the development and sustainability of the infrastructure and scientific, technological, technical, and institutional capacities needed to research, observe, analyze, map, and forecast natural and related hazards, vulnerabilities, and disaster impacts.
- Support the development and improvement of relevant databases and the promotion of full and open exchange and dissemination of data for assessment, monitoring, and early warning purposes.
- Support the improvement of scientific and technical methods and capacities for risk assessment, monitoring, and early warning, through research, partnerships, training, and technical capacity building.
- Establish and strengthen the capacity to record, analyze, summarize, disseminate, and exchange statistical information and data.

Regional Risks

- Compile and standardize statistical information and data on regional disaster risks, impacts, and losses.
- Cooperate regionally and internationally to assess and monitor regional and trans-boundary hazards.
- Research, analyze, and report long-term changes and emerging issues that might increase vulner-
abilities and risks or the capacity of authorities and communities to respond to disasters.

Use Knowledge, Innovation, and Education to Build a Culture of Safety and Resilience

Information Management and Information Exchange

- Provide easily understandable information on disaster risks and protection options, especially to citizens in high-risk areas.
- Strengthen networks among disaster experts, managers, and planners across sectors and between regions, and create or strengthen procedures for using available expertise in developing local risk reduction plans.
- Promote and improve dialogue and cooperation among scientific communities and practitioners working on disaster risk reduction.
- Strengthen the use and implementation of updated information, and technology for disaster risk reduction purposes.
- In the medium term, develop directories, inventories, and information exchange systems at the local, national, regional, and international levels.
- Institutions dealing with urban development should provide information to the public on disaster risk reduction options prior to construction, land purchases, or land sales.
- Update and widely disseminate international standard terminology related to disaster risk reduction.

Education, Public Awareness, and Training

- Promote the inclusion of disaster risk reduction knowledge in relevant sections of school curricula.
- Promote the implementation of local risk assessment and disaster preparedness programs in schools and institutions of higher education.
- Promote the implementation of programs and activities in schools for learning how to minimize the effects of hazards.
- Develop training and learning programs in disaster risk reduction targeted at specific sectors (development planners, emergency managers, local government officials, etc.).
- Promote community-based training initiatives to enhance local capacities to mitigate and cope with disasters.
- Ensure equal access to appropriate training and educational opportunities for vulnerable constituencies.
- Promote the engagement of the media to stimulate a culture of disaster resilience and strong community involvement.

Research

- Strengthen the technical and scientific capacity to develop and apply methodologies, studies, and models to assess vulnerabilities to and the impact of geological, weather, water, and climate-related hazards.

Reduce Underlying Risk Factors

Natural Resources and Environmental Management

- Encourage the sustainable use and management of ecosystems, including through better land-use planning and development activities to reduce risk and vulnerabilities.
- Implement integrated environmental and natural resource management approaches that incorporate disaster risk reduction.
- Promote the integration of risk reduction associated with existing climate variability and future climate change.
Social and Economic Development

- Integrate disaster risk reduction planning into the health sector to safeguard hospitals from disaster impacts.
- Protect and strengthen critical public facilities (schools, hospitals, power plants, etc.) to safeguard against disaster impacts.
- Strengthen the implementation of social safety net mechanisms.
- Incorporate disaster risk reduction into post-disaster recovery and rehabilitation processes.
- Minimize disaster risks and vulnerabilities caused by the movement of people.
- Promote diversified income options for populations in high-risk areas to reduce their vulnerability to hazards.
- Promote the development of financial risk-sharing mechanisms such as disaster insurance.
- Promote the establishment of public-private partnerships to better engage the private sector in disaster risk reduction activities.
- Develop and promote alternative and innovative financial instruments for addressing disaster risk.

Land-Use Planning and Other Technical Regulations

- Incorporate disaster risk assessments into the urban planning and management of disaster-prone human settlements.
- Mainstream disaster risks into planning procedures for key infrastructure projects, including design criteria, approval, and implementation.
- Develop guidelines and monitoring tools for the reduction of disaster risk in the context of land-use policy and planning.
- Incorporate disaster risk assessment into urban development planning.
- Encourage the revision of existing building codes or the development of new building codes, standards, rehabilitation, and reconstruction practices.

III/ JAKARTA CLIMATE CHANGE MITIGATION AND ADAPTATION PROGRAMS

Indonesia is the world’s third largest emitter of greenhouse gases, mainly due to land-use change and deforestation. Under the Kyoto Protocol, Indonesia is not required to make any firm commitments for reduction of greenhouse gases. Most programs and projects that focus on climate change mitigation or adaptation have their origin in other considerations such as flooding, traffic congestion, and pollution.

Bus Rapid Transportation System

To reduce Jakarta’s intense traffic congestion, the Indonesian Government started TransJakarta, a bus rapid transportation (BRT) system, in January 2004. The provision of dedicated bus lanes has enabled the service to be operated at intervals of only two to three minutes during rush hour. Most of the buses using the dedicated corridors are low-emission vehicles, running mainly running on compressed natural gas. (Some run on diesel, but all comply with the Euro-II emissions standards.)
TransJakarta was begun in order to encourage people to use public transport rather than their own vehicles. The system was based on a similar community climate change program in Bogota, Colombia, South America. The implementation of the rapid bus transportation system in Jakarta has led to substantial reductions in Indonesia’s overall GHG emissions. In 2008, led to a reduction in carbon dioxide of 32,310 tons and in nitrous oxide by 386 tons.

TransJakarta served 15 million passengers in its first year and is now one of the largest BRT networks in the world. Yet the system has not delivered on its potential, as it has less ridership than systems one-fourth its size. In order to improve its operations, TransJakarta is now focusing on public awareness and marketing; expansion and integration with other transport modes, such as rail; and land use planning.

**Three-in-One Traffic System**

In order to reduce traffic jams in Jakarta by discouraging the use of vehicles with very few passengers, the Government has operated the three-in-one traffic system on some arterial roads of Jakarta since 2003. As per this road-use system, private cars in restricted zones must carry at least three passengers. The rule has had some positive impact on the reduction of traffic congestion during rush hours and the consequent benefit in terms of reduction in carbon emissions. Strict implementation of this system has also led to positive behavioral change among commuters, who now tend to consider timing in their commuting choices.

**Notes**

This “City Profile” is part of *Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters*, published by the World Bank. The analysis presented here is based on data available at the time of writing. For the latest information related to the Primer and associated materials, including the City Profiles, please visit [www.worldbank.org/cap/](http://www.worldbank.org/cap/).

---

In 2004, the Government started a rapid bus transportation system using dedicated bus lanes.