

MITIGATING THE IMPACTS OF DISASTERS: POLICY DIRECTIONS

ENHANCING URBAN SAFETY AND SECURITY GLOBAL REPORT ON HUMAN SETTLEMENTS 2007

ABRIDGED EDITION

VOLUME 3

ENHANCING URBAN SAFETY AND SECURITY

GLOBAL REPORT ON HUMAN SETTLEMENTS 2007

> Abridged Edition Volume 3

Mitigating the Impacts of Disasters: Policy Directions

United Nations Human Settlements Programme



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This publication is the third of three volumes of the Abridged Edition of *Enhancing Urban Safety and Security: Global Report on Human Settlements 2007*, viz:

- 1 Reducing Urban Crime and Violence: Policy Directions
- 2 Enhancing Security of Tenure: Policy Directions
- 3 Mitigating the Impacts of Disasters: Policy Directions

An electronic version of this publication and of the full *Enhancing Urban Safety and Security: Global Report on Human Settlements 2007* is available from http://www.unhabitat.org/grhs/2007

The list of selected references at the end of this volume contains only a few important publications on the sub-theme of disasters, as well as sources of quotations, boxes, tables and figures included in this volume. A complete list of references may be found in the full *Enhancing Urban Safety and Security: Global Report on Human Settlements 2007*.

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INTRODUCTION

Enhancing Urban Safety and Security: Global Report on Human Settlements 2007 (Global Report 2007) addresses three threats to the safety and security of towns and cities, viz: crime and violence; security of tenure and forced evictions; and natural and human-made disasters. This publication, which focuses on natural and human-made disasters, is the third of three volumes of the Abridged Edition of the Global Report 2007. The main purpose of this volume is to present, in summary form, the main findings of the Global Report 2007 on natural and human-made disasters and, on the basis of this, to suggest policy directions for mitigating the impacts of natural and human-made disasters on urban settlements.

Over the last three decades, natural and human-made disasters have claimed millions of lives and caused huge economic losses globally. Cities, where half of humanity currently resides and much of the world's assets are concentrated, are fast becoming the locus for much of this destruction and loss from disasters. Rapid urbanization, coupled with global environmental change, is turning an increasing number of human settlements into potential hotspots for disaster risk. The 2005 South Asian earthquake, in which 18,000 children died when their schools collapsed, and the Indian Ocean Tsunami in 2004 that wiped out many coastal settlements in Sri Lanka, India and Indonesia, illustrate the risk that has accumulated in towns and cities and that is released when disaster strikes.

This report examines the consequences of natural and human-made disasters for safety and security in cities, and the policy options for preventing and reducing damage caused by these events. Disasters are defined as those events where human capacity to withstand and cope with a natural or human-made hazard is overwhelmed. Most of the report focuses on large disasters that register direct impacts at the community level and above. However, the impacts of smallscale hazards, where direct impacts are limited to the individual or household levels, are illustrated through an examination of traffic accidents that result in over 1 million deaths worldwide each year, more than any large natural or human-made disaster type.

Cities are particularly vulnerable to the effects of natural and human-made disasters due to a complex set of interrelated processes, including a concentration of assets, wealth and people; the location and rapid growth of major urban centres in coastal areas; the often unwise modification of the urban built and natural environment through human actions; the expansion of residential areas for the poor into hazard-prone locations; and the failure of urban authorities to regulate building standards and implement effective land-use planning strategies. As cities grow, disaster risk often increases through the rising complexity and interdependence of urban infrastructure and services, greater population density and concentration of resources.

Yet, urban growth need not necessarily result in increased disaster risk. Indeed, disasters are not pure natural events or 'acts of God', but, rather, products of inappropriate and failed development. Thus, this report takes a risk reduction approach that calls for both small and large-scale disasters to be seen as problems of development, requiring not only investments in response and reconstruction, but also changes in development paths to reduce or minimize the occurrence and impacts of disasters *ex-ante*.

The multiple aspects of risk in urban areas associated with natural and human-made disasters are examined in the report. Accordingly, Chapter 1 presents a conceptual framework for understanding urban safety and security in general. Subsequently, Chapter 2 provides an overview of global trends in the incidence and impacts of natural and human-made disasters as well as those urban processes that contribute to the generation of risk. Building on this, Chapter 3 reviews existing policy approaches for reducing disaster risk and incorporating risk reduction within urban planning and management as well as within disaster response and reconstruction. Chapter 4 examines the trends — including policy trends — and impacts of road traffic accidents as an example of hazards threatening the safety and security of urban dwellers

on a day-to-day basis. Finally, Chapter 5 identifies future policy directions in disaster risk reduction at the city, national, regional and international levels. These include: improved risk mapping, disaster risk reduction legislation, strengthening of early warning systems, effective land-use planning, design of disaster resistant buildings and infrastructure, effective communication and emergency response systems, as well as strengthening of reconstruction capacity.

It is my hope that policy makers at central and local government levels, civil society organizations and all those involved in the formulation of policies and strategies for mitigating the impacts of natural and human-made disasters will find this publication useful.

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Anna Kajumulo Tibaijuka Under-Secretary-General and Executive Director United Nations Human Settlements Programme (UN-Habitat)

KEY FINDINGS AND MESSAGES

KEY FINDINGS

Between 1974 and 2003, 6367 natural disasters occurred globally, causing the death of 2 million people and affecting 5.1 billion people. A total of 182 million people were made homeless, while reported economic damage amounted to US\$1.38 trillion. Since 1975, the number of natural disasters recorded globally has increased dramatically (fourfold), especially in Africa. An even higher tenfold increase in the incidence of human-made disasters has been observed between 1976 and 2000. Between 2000 and 2005, average mortality from human-made disasters was lower (30 per event) than deaths caused by natural disasters (225 per event). A total of 98 per cent of the 211 million people affected by natural disasters annually from 1991 to 2000 were in developing countries.

The catastrophic impact of disasters on individuals has been illustrated in recent years by the toll of death (220,000 people) and homelessness (1.5 million) from the Indian Ocean Tsunami of December 2004 and the Pakistan earthquake of October 2005, which killed 86,000 people and left millions homeless. Moreover, losses during disaster and reconstruction deepen existing socio-economic inequalities, thus creating vicious cycles of loss and vulnerability. Especially in poorer countries, women and children tend to be the most affected by disasters, as observed in the aftermath of the 2004 Indian Ocean Tsunami. The elderly and those with disabilities are often among the most vulnerable to natural and human-made hazards.

Economic losses associated with disasters have increased 14-fold since the 1950s and, during the last decade alone, disasters caused damage worth US\$67 billion per year, on average. Wealthier countries incur higher economic costs due to disasters, while poorer countries face greater loss of human life. By destroying critical urban infrastructure, disasters can set back development gains and undermine progress in meeting the Millennium Development Goals (MDGs). Cities connected to regional or global financial systems have the potential to spread the negative consequences of disaster across the global economy, with huge systemic loss effects.

Large and megacities magnify risk since they concentrate human, physical and financial capital and are frequently also cultural and political centres. The potential for feedback between natural and human-made hazards in large cities presents a scenario for disaster on an unprecedented scale. Large urban economies that have sizeable foreign currency reserves, high proportions of insured assets, comprehensive social services and diversified production are more likely to absorb and spread the economic burden of disaster impacts. Smaller cities (less than 500,000 residents) that are home to over half of the world's urban population are also exposed to multiple risks, but often have less resilience to the economic consequences of disasters.

There has been a 50 per cent rise in extreme weather events associated with climate change from the 1950s to the 1990s, and the location of major urban centres in coastal areas exposed to hydro-meteorological hazards is a significant risk factor: 21 of the 33 cities which are projected to have a population of 8 million or more by 2015 are located in vulnerable coastal zones and are increasingly vulnerable to sea-level rise. Around 40 per cent of the world's population lives less than 100 kilometres from the coast within reach of severe coastal storms. In effect, close to 100 million people around the world live less than 1 metre above sea level. Thus, if sea levels rise by just 1 metre, many coastal megacities with populations of more than 10 million, such as Rio de Janeiro, New York, Mumbai, Dhaka, Tokyo, Lagos and Cairo, will be under threat.

Additional factors rendering cities particularly vulnerable include rapid and chaotic urbanization; the concentration of economic wealth in cities; environmental modifications through human actions; the expansion of slums (often into hazardous locations); and the failure of urban authorities to enforce building codes and land-use planning. The urban landscape, which is characterized by close proximity of residential, commercial and industrial land uses, generates new cocktails of hazard that require multirisk management. The rapid supply of housing to meet rising demand without compliance with safe building codes is a principal cause of disaster loss in urban areas. Lack of resources and human skills — compounded by institutional cultures that allow corruption — distort regulation and enforcement of building codes.

Small-scale hazards, while less dramatic than major hazards, have serious aggregate impacts. This is illustrated by the incidence and impacts of road traffic accidents, which result in more deaths worldwide each year than any large natural or human-made disaster type. Traffic accidents cause extensive loss of human lives and livelihoods in urban areas, killing over 1 million people globally every year. At least 90 per cent of the deaths from traffic accidents occur in low and middle-income countries. Young males and unprotected road users are particularly vulnerable to injury or death from traffic accidents. Traffic accidents cause substantial economic costs, amounting to an estimated US\$518 billion worldwide every year. If no action is taken, traffic injuries are expected to become the third major cause of disease and injury in the world by 2020.

KEY MESSAGES

Land-use planning is a particularly effective instrument that city authorities can employ to reduce disaster risk by regulating the expansion of human settlements and infrastructure. Evidence-based land-use planning at the city level requires accurate and up-to-date data. Technological innovation can help to fill part of this gap; but the global proliferation of slums also calls for more innovative and participatory land use planning procedures decentralized leadership are more effective, especially in the context of rapid and uncontrolled urbanization where capacities for oversight and enforcement are limited.

Governments need to improve risk, hazard and vulnerability assessment and monitoring capacity through increased investment, with support from the international community, where necessary. In addition to informing policy formulation, assessment data should feed into national initiatives that aim to build a culture of awareness and safety through public education and information programmes. Furthermore, risk knowledge should be communicated to relevant actors through effective early warning systems in order to enable timely and adequate responses to disasters.

It is especially important that disaster risk reduction is mainstreamed within national development and poverty reduction policies and planning. Examples of disaster risk reduction strategies that have been designed purposely to contribute to meeting individual MDG targets are available. National initiatives should move from managing risk through emergency relief and response towards a more proactive pre-disaster orientation.

Greater partnership between humanitarian and development actors is required during reconstruction in order to reconcile demands for rapid provision of basic services against the more time-consuming aim of 'building back better'. Clear legislative and budgetary frameworks should also be in place to avoid uncoordinated and fragmented reconstruction activities by city governments, local actors, donors and humanitarian agencies.

Drawing on existing international frameworks for disaster risk reduction (e.g. the Hyogo Framework for Action, 2005–2015), national governments should continue putting in place disaster risk reduction legislation and policy: strengthening early warning systems:

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