Chapter 1
DEVELOPMENT AT RISK

1.1 Natural Disaster as a Cause and Product of Failed Development

Natural disaster is intimately connected to the processes of human development. Disasters triggered by natural hazards put development gains at risk. At the same time, the development choices made by individuals, communities and nations can pave the way for unequal distributions of disaster risk.

Meeting the Millennium Development Goals (MDGs) is extremely challenged in many communities and countries by losses from disasters triggered by natural hazards. The destruction of infrastructure, the erosion of livelihoods, damage to the integrity of ecosystems and architectural heritage, injury, illness and death are direct outcomes of disaster. But disaster losses interact with and can also aggravate other stresses and shocks such as a financial crisis, a political or social conflict, disease (especially HIV/AIDS), and environmental degradation. And such disaster losses may set back social investments aiming to ameliorate poverty and hunger, provide access to education, health services, safe housing, drinking water and sanitation, or to protect the environment as well as economic investments that provide employment and income.

At the same time, it has been clearly demonstrated how disaster risk accumulates historically through inappropriate development interventions. Every health centre or school that collapses in an earthquake and every road or bridge that is washed away in a flood began as development activities. Urbanisation and the concentration of people in hazard prone areas and unsafe buildings, increases in poverty that reduce the human capacity to absorb and recover from the impact of a hazard, and environmental degradation that magnifies hazards such as floods and droughts, are only a few examples of how development can lead to disaster risk.

The relationship of development and disaster risk can be seen by a quick review of data produced by this Report. About 75 percent of the world's

population live in areas affected at least once between 1980 and 2000 by earthquake, tropical cyclones, flood or drought. As a result of disasters triggered by these natural hazards, more than 184 deaths per day were recorded in different parts of the world. Deaths indicate only the tip of the iceberg in terms of losses in the quality of life, livelihoods and economic development, and are unevenly distributed around the world. While only 11 percent of the people exposed to natural hazards live in low human development countries, they account for more than 53 percent of total recorded deaths. Development status and disaster risk are clearly closely linked.

Appropriate development policies that reduce disaster risk can therefore make an important contribution toward the achievement of the MDGs by reducing losses and protecting existing development gains as well as avoiding the generation of new risks. The reduction of disaster risk and sustainable human development are therefore mutually supportive goals that also contribute to the reduction of poverty, the empowerment of marginalised social groups and gender equality. Disaster risk reduction can make a particularly critical difference for highly vulnerable populations, for example those living in small island developing states or societies weakened by armed conflict and HIV/AIDS.

Disasters are still usually perceived as exceptional natural events that interrupt normal human development and require humanitarian actions to mitigate loss. While this Report acknowledges the increasing impact of natural disasters on development, its focus is on how development itself shapes disaster risk. This Report demonstrates that countries with similar patterns of natural hazard have widely varying levels of disaster risk and that these risks have been shaped through development paths and processes. The key message of this Report is that disaster risk is not inevitable, but on the contrary, can be managed and reduced through appropriate development policy and actions.

Through publishing this Report, UNDP thus seeks to demonstrate through quantitative analysis and documented evidence that disaster risk is an *unresolved problem of development* and to identify and promote development policy alternatives that contribute to reducing disaster risk.

The Report addresses four key questions:

- How are disaster risks and human vulnerability to natural hazards distributed globally between countries?
- What are the development factors and underlying processes that configure disaster risks and what are the linkages between disaster risk and development?
- How can appropriate development policy and practice contribute to the reduction of disaster risks?
- How can disaster risk assessment be enhanced in order to inform development policy and practice?

The **Disaster Risk Index** (DRI), which is presented as the centrepiece of this Report, is a first step in addressing these questions. The DRI provides the first global assessment of disaster risk factors through a country-by-country comparison of human vulnerability and exposure to three critical natural hazards: earthquake, tropical cyclones and flooding, and the identification of development factors that contribute to risk. Volcanic eruption is important internationally, but lacks sufficient data for analysis at this time (see Technical Annex). Similarly, the development of a drought DRI revealed a series of unresolved methodological and conceptual challenges, which imply that its results do not yet have the required degree of confidence. Nevertheless, the exploration of these challenges in itself provides important insights into drought risk and vulnerability and is presented in the Report as a work in progress. Reliance on internationally available data and the use of human deaths as a proxy for disaster losses meant that certain types of disasters were excluded from the model. An example of this is fire, which can cause widespread damage with few deaths.

DRI builds on UNDP experience with the Human Development Index (HDI). Just as with the HDI, this first report on DRI should be seen as an initial step towards measuring global disaster risks. Its value is as much in flagging data needs to support decision making at the sub-national, national and international levels, as it is in contributing to the process of mapping international patterns of disaster risk.

1.2 Outline of the Report

Chapter 1 is divided into three sections. The first section presents the objective of the Report in advocating for the importance of disaster risk as a component in meeting the MDGs. The second section contextualises