

**DISASTERS AND DEVELOPMENT:  
A STUDY IN INSTITUTION-BUILDING**

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**VOLUME I. OVERVIEW AND RECOMMENDATIONS**

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Responsibility for the study and the interpretation of the case reports of course lies with the authors.

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## ACRONYMS

CEDEGE	Commission of Studies for the Development of the Guayas River Basin and the Peninsula of Santa Elena
EPPG	Emergency Preparedness and Prevention Group
EWS	Early Warning System
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
GNP	Gross National Product
IDNDR	International Decade for Natural Disaster Reduction
ILO	International Labour Organisation
INERHI	Ecuadoran Institute of Water Resources
IPF	Indicative Planning Figure
NDPPS	National Disaster Prevention and Preparedness Strategy
NGO	Non-governmental organisation
OAS	Organisation of American States
OFDA	Office of U.S. Foreign Disaster Assistance, Agency for International Development
ONCCP	Office of the National Committee for Central Planning
PREDESUR	Programme for the Development of the Southern Region of Ecuador
ResRep	Resident Representative
RRC	Relief and Rehabilitation Commission
SPR	Special Programme Resources
sq.km.	Square kilometre
UN	United Nations

UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WHO	World Health Organisation

## EXECUTIVE SUMMARY

Due to increasing awareness of natural disasters and their consequences on development, the governments of many countries are initiating long-term prevention and mitigation efforts. In some disaster-prone nations, the United Nations Development Programme (UNDP) is a leading promoter of endeavours aimed at preparing for and preventing disasters and mitigating their effects. The purpose of this study was to examine the present situation with regard to disaster mitigation in a few representative countries, and from these to derive recommendations for UNDP on how it can better assist governments in this field.

National efforts have been examined through three case studies:

- Bangladesh, where UNDP provided assistance in promoting the concept of disaster mitigation, carried out studies to foster flood control efforts, and supported the establishment of an office of disaster preparedness;
- Ethiopia, where UNDP supported an international conference on developing a prevention and preparedness strategy, provided technical assistance to formulate the strategy, and helped to establish an office of disaster preparedness within the environmental section of the national planning body;
- Ecuador, where UNDP, through its role as representative of the Office of the United Nations Disaster Relief Coordinator (UNDRO), has worked to channel funds for hazard mapping and has assisted government efforts in reconstruction with safer housing, and where the government planning office has begun to integrate disaster concerns into development planning.

Examples were also drawn from countries which have embarked on efforts designed to link disaster concerns with development, such as Sudan.

Considering these endeavours, the lessons learned were as follows:

- Governments are willing and able to develop strategies linking development to disaster vulnerability, but because governments develop other priorities as recent disasters fade from memory, long-term orientation and assistance from outside sources for this work are often required.
- The inability to enforce mitigation measures, because of perceived economic constraints or other factors such as civil war, means that strategies cannot always be implemented as planned.
- Many government and other officials still find it difficult to focus on "prevention and mitigation" as separate from "relief and reconstruction".



- Many governments fail to recognise that mitigation can be carried out at minimal cost by simply adjusting on-going development programmes.
- Existing national relief agencies do not want to yield dominance in disaster mitigation, even where their institutional framework and resources may not be appropriate for the broader role of integrating development with disaster vulnerability.
- Imposition by donors of external solutions which are politically or bureaucratically unacceptable is unlikely to yield good results in the short term.
- Planners at all levels in key organisations lack essential technical information to take disaster vulnerability into account, and to integrate disaster concerns with development planning.
- Governments are sometimes reluctant to use the expertise and interest available from non-governmental organisations (NGOs) and the private sector.
- Few governments recognise the long-term economic implications of disasters, especially on their national debt structure, and the role that hazard mitigation could play in easing economic problems.

UNDP is recognised as having the mandate and being well-positioned to assist governments to resolve existing problems in implementing mitigation measures. Because of the nature of the institution, UNDP's efforts should emphasise:

- using its influence to create awareness of the linkages between development and disaster vulnerability at the highest level of national governments and to create an environment in which there is a greater likelihood of mitigation measures being enforced;
- guiding countries to find their own solutions, without imposing a standard package on them, including not necessarily promoting the establishment of new institutions;
- developing a two-pronged approach whereby national governments are encouraged to develop overall policy at the central planning level and ensure resources are available for mitigation, while at the same time assisting local governments in individual initiatives where more involvement of local organisations is possible;
- taking such assistance out of the "disaster" context -- otherwise "relief" will remain the principal focus.
- promoting a long-term programmatic approach to mitigation, while recognising that projects may serve useful purposes in the short term.

Therefore, UNDP should help governments to develop national strategies encompassing the following elements:

- quantification of the extent of the disaster vulnerability of the nations;
- identification of existing key government institutions to strengthen;
- identification of needs that should be met by specialised agencies;
- establishment of a competent review process for development projects with the host government, taking mitigation into account;
- identification and mapping of natural hazards and other disaster threats;
- designing of information systems that will give planners easy access to data on hazards;
- identification of on-going development projects that could be adjusted before completion, to take mitigation concerns more completely into account, and could serve as examples for broader efforts;
- stimulation of private sector interest and inputs in mitigation;
- support of coordination mechanisms, including with NGOs;
- development of "off-the-shelf" disaster containment projects for disaster-prone areas.

Realistically, UNDP can achieve the above within its mandate by:

- providing technical assistance for developing national strategies, information bases on vulnerability and projects in disaster-prone areas, and systems for collecting and distributing relevant information to concerned institutions;
- implementing as soon as possible the procedures outlined in the UNDP/UNDRO manual on disasters for programme and project preparation and review;
- providing resources for carrying out inventories of existing institutions (including local agencies and major NGOs) that presently have some disaster-related functions, to identify gaps and overlaps, which agencies to strengthen, and the specific needs of those which could play a greater role in the broader field of mitigation;
- funding studies designed to fill gaps in the information base, emphasising aspects of traditional mitigation strategies and local initiatives;

- supporting the incorporation of risk assessment and hazard and vulnerability analysis into long-term training of future planners in international agencies, NGOs, national universities and training institutes;
- developing reserve funding mechanisms for assisting governments in implementing "off-the-shelf" early disaster-containment measures when long-term mitigation strategies fail;
- demonstrating the economic benefits of mitigation to governments;
- helping governments design new projects or modify existing ones to demonstrate mitigation techniques;
- designating a deputy resident representative to oversee mitigation issues in those countries with special needs.

# **DISASTERS AND DEVELOPMENT: A STUDY IN INSTITUTION-BUILDING**

## **I. BACKGROUND TO THE PRESENT STUDY**

In recent years, the world public has become increasingly alarmed by natural disasters such as prolonged droughts, hurricanes, floods, earthquakes and volcanic eruptions. This increased attention is partly a result of more rapid and visual media coverage, but also because rising numbers of people are being affected. The response of both donors and affected countries continues to focus primarily on relief actions to meet immediate human needs. However, the fact that some countries are experiencing repetitive disasters at relatively short intervals, and that some could have been foreseen and perhaps prevented or their impact reduced, has created an interest in including disaster-related considerations in development planning and implementation.

The United Nations Development Programme (UNDP) has long been involved in relief activities. Under the provisions of 1983 United Nations (UN) guidelines for disaster relief, rehabilitation, prevention and mitigation, UNDP has assisted governments in addressing the effects of disaster. The organisation has generally done so by helping after emergencies, providing its experience and resources, as well as that of the UN system at large, to alleviate human suffering.

A joint UNDP/UNDRO (Office of the UN Disaster Relief Coordinator) 1988 Task Force report urged UNDP to include disaster management and disaster mitigation activities more systematically within its programme and project cycle, in keeping with the concept that preparedness for many types of disasters is better undertaken as part of the general development process. The Task Force noted that only when disaster preparedness and prevention projects are built into a wider developmental programme or strategy, or when the mitigation effort goes beyond the individual desire of a single department, can there be any lasting effect (UN General Assembly, 1988).

Until recently, disaster preparedness and mitigation were viewed from a rather narrow perspective. Most governments focused on the provision of emergency relief supplies, medical attention and repairs to critical infrastructure. It was assumed that most assistance should and could be provided from the outside. Today, experts take a much broader and more developmental perspective. Emphasis has shifted to the implementation of measures aimed at making countries less vulnerable to disasters. One aspect of this shift has been the recognition that, as well as incorporating such measures into national level institutions, a more community-based self-help approach is also needed.

The UNDP Country Programming process, with its explicit structure and governmental commitment, offers a special opportunity for mitigation initiatives. To date, however, UNDP's experience in how to use this process to integrate disaster concerns into development planning is somewhat limited. The beginning of the International Decade for Natural Disaster Reduction (IDNDR) is thus an appropriate time for UNDP to study how it

can assist governments conceptually and institutionally in this regard, since one of the objectives of the IDNDR is "to improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively" (UN General Assembly, 1987). Other organisations, such as the World Bank, the Organisation of American States (OAS) and the AID Office of US Foreign Disaster Assistance (OFDA) are also now turning their attention in this direction.

The present report on institution-building for the integration of disaster concerns with development planning is one aspect of a three-pronged UNDP initiative to improve its performance and that of the governments which it assists in this field. Parallel to this study, UNDP and UNDRO are about to launch a co-operative effort for the training of the staff of the two organisations in disaster reduction matters, with particular emphasis on the links between disaster reduction and the on-going development process. Priority will be given to forming and training country disaster teams comprised of UN personnel, non-governmental organisations (NGOs), bilateral donor representatives and representatives of government central planning organisations. A total of approximately 3,300 persons, including personnel in 50 disaster-prone developing countries, should receive training of varying duration and content over the next three to four years.

A valuable tool both in this training process and in the field will be a manual on disasters for UNDP and UNDRO staff being developed concurrently with this study, which outlines UNDP policy and includes a section on how to incorporate disaster concerns into the country programming process.

## A. STUDY OBJECTIVES

The overall objective of the present study is to present a set of lessons on the manner in which governments are addressing the effects of slow-onset or recurrent natural disasters, and from these lessons to derive recommendations for UNDP on how it can best cooperate with governments through the programming process to mitigate the effects of disasters. The study emphasises how to strengthen the institutional capacity of governments to carry out initiatives in this field. The results should raise the consciousness of policy-makers to the issues in the field, and make programme implementers aware of the practical steps they can take to turn the ideas into action.

This study is directed at assisting UNDP to find a role to play in slow-onset disasters. Therefore, the emphasis in this report will be on drought, flood, famines (usually produced by a combination of factors) and environmental degradation. Many of the recommendations would also apply to recurrent natural disasters, especially hurricanes and other tropical storms, and in some cases to sudden onset disasters for which long-term mitigation measures may be effective, such as earthquakes.

This study does not specifically cover issues concerned with crisis-induced migration, that is, displacement due to a range of causes, especially civil strife. An overlap between the issue of slow-onset natural disasters and the problems of crisis-induced migration exists, since this type of disaster may precipitate migration. However, a separate UNDP study deals

with problems of assistance to refugees, returnees and displaced persons (Denes, 1990), and this subject will only be touched on where displacement is a result of long-term natural disasters.

## **B. METHODOLOGY**

The present study was carried out in three phases, following the terms of reference drafted by UNDP (Annex 1). The first was a preliminary report setting out the issues in the field and presenting the framework for the conduct of the study. This initial report included the design and terms of reference for field studies in Bangladesh, Ecuador and Ethiopia in the second phase. The objective of these field studies was to document in detail attitudes and practical lessons learned from a cross-section of national government policies on disaster mitigation as they relate to the development planning process. This final report encompasses the experience, findings and recommendations derived from the first two phases of the study.

The first phase of the study involved reviewing the existing body of knowledge and experience relevant to the integration of prevention and mitigation with development programme planning and implementation to provide an initial direction for this work. The review of written materials was complemented by interviews with UNDP headquarters staff and officials of other organisations including UNDRO, the United Nations Children's Fund (UNICEF), the World Bank, Organisation of American States (OAS) and OFDA.

The terms of reference drawn up during the first phase for the country studies (Annex 2) were distributed to UNDP offices, who selected local researchers to produce the field reports. The study team leader visited each of the selected countries for approximately one week at the beginning of the work, to clarify the terms of reference with the researchers, and to ensure a degree of standardisation. The country information was gathered through interviews with national and local government officials, community leaders, university researchers and UNDP staff. The officials contacted included representatives of both government planning agencies and organisations involved in disaster mitigation and relief. Representatives of major donors to disaster-related projects, NGOs, other international organisations such as the World Bank or the OAS, and the private sector were also interviewed. Documents related to relevant disaster projects were reviewed.

## **C. DEFINITIONS**

The definition of some terms used in this report is problematic. In the late 1970s, UNDRO defined prevention, preparedness and mitigation primarily to delimit territories in keeping with the roles of UN agencies at that time. Since then, the mandates of these agencies have evolved, for example, as UNDP has become more involved in disaster mitigation. As a result of this situation, some disagreement currently exists on the exact meaning of these terms. With this situation in mind, the following definitions will be used throughout this report.

A natural disaster may be defined as a serious disruption of the functioning of a community caused by a natural phenomenon provoking widespread human and material losses. The essence of a natural disaster is not the hazard responsible, that is, the physical event that gives rise to such losses, but the human, economic and social impact of that particular physical event (UN General Assembly/Economic and Social Council, 1989).

Development is aggregate economic growth with at least some reduction in general poverty, inequality between classes and unemployment (Olson, 1984).

Disaster prevention is action taken to eliminate or avoid harmful natural phenomena and their effects. Examples of prevention include restriction of development in high risk areas, pest control to prevent locust swarms and erection of dams or levees to prevent flooding (Disaster Management Center, 1986).

Disaster preparedness encompasses those actions taken to limit the impact of natural phenomena by structuring response and establishing a mechanism for effecting a quick and orderly reaction. Preparedness activities could include pre-positioning supplies and equipment; developing emergency action plans, manuals and procedures; developing warning, evacuation and sheltering plans; strengthening or otherwise protecting critical facilities; and so on (Disaster Management Center, 1986).

Disaster mitigation is the taking of actions before a disaster that reduce its harmful effects. Mitigation accepts that extreme natural phenomena will occur, but attempts to limit both human and property losses (Cuny, 1983).

Vulnerability refers to the long-term factors which affect the ability of a community to respond to events or which make it susceptible to calamities. Communities and individuals may possess vulnerabilities in three areas: physical or material resources, social and organisational attitudes, and motivations (International Relief/Development Project, 1990).

Vulnerability analysis is the technique in which damages are quantified in function of intensity and magnitude of the event, and of the physical and socio-economic characteristics of the system (Vermeiren, 1989a).

Structural mitigation measures are physical measures introduced to reduce the vulnerability of what is at risk. These measures can consist of the erection of structures such as dams or retaining walls, agricultural practices such as planting windbreaks or terracing slopes, or construction of more hazard-resistant buildings (Vermeiren, 1989a).

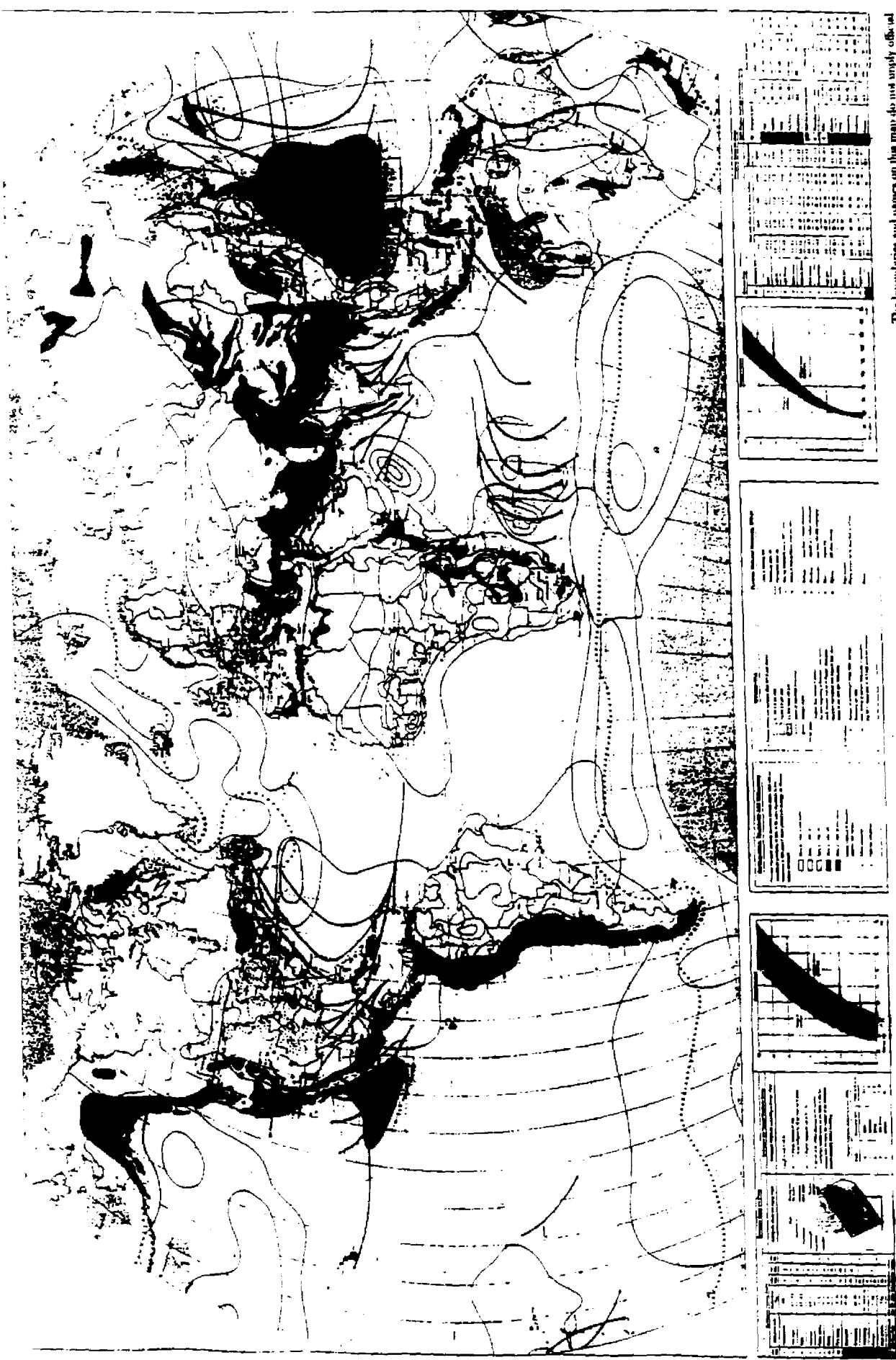
Non-structural measures are policies and practices of development which, when put into effect, reduce the risk to development. Land use zoning, crop diversification, relocation out of a flood zone, building codes, and the use of forecasting and warning are all non-structural measures (Vermeiren, 1989a).

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FIGURE 1  
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# World Map of Natural Hazards



The boundaries and names on this map do not imply official endorsement or acceptance by the United Nations.

Courtesy of the Munich Re for the International Decade  
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