

A WORLD SAFE FROM NATURAL DISASTERS

**The Journey of Latin America
and the Caribbean**



Pan American Health Organization
Pan American Sanitary Bureau, Regional Office of the
World Health Organization



International Decade for Natural Disaster Reduction
Regional Office for Latin America and the Caribbean

Also published in Spanish (1994) under the title:
*Hacia un mundo más seguro frente a los desastres naturales:
la trayectoria de América Latina y el Caribe*

ISBN 92 75 12114 1

© Pan American Health Organization, 1994

The views expressed, the recommendations formulated, and the designations employed in this publication do not necessarily reflect the current policies or opinions of the IDNDR Secretariat or the Pan American Health Organization or of its Member States.

The Pan American Health Organization welcomes requests for permission to reproduce or translate, in part or in full this publication. Applications and inquiries should be addressed to the Emergency Preparedness and Disaster Relief Coordination Program, Pan American Health Organization, 525 23rd St., NW, Washington, D.C. 20037, U.S.A.; Fax: (202) 775-4578 or Internet: DISASTER@PAHO.ORG.

The printing of this publication was made possible with the financial support of the Overseas Development Administration of the United Kingdom (ODA), the Canadian International Development Agency (CIDA), and the Office of U.S. Foreign Disaster Assistance of the United States Agency for International Development (OFDA/USAID, Grant No. AOT-3507-G-00-3188-00).

FOREWORD

The 1990s has been declared the International Decade for Natural Disaster Reduction (IDNDR). The mid-point in this International Decade and the World Conference on Natural Disaster Reduction provide a golden opportunity to showcase the progress of Latin America and the Caribbean in reducing the impact of disasters on life and property. It is also an appropriate time to suggest areas in need of additional attention at the national level during the second half of the Decade and beyond.

During the first half of the IDNDR, each country in Latin America and the Caribbean made significant progress in the field of disaster management, or as we call it today, disaster reduction. However, this journey toward a safer Region by no means began in 1990.

The principal purpose of this publication is to remind policy makers and the international community that a modest but sustained investment in disaster reduction in Latin America and the Caribbean has saved, and will continue to save, in a non-dramatic but effective way, a large number of lives and avoid tragedies which would otherwise drain resources for humanitarian assistance. A second purpose is to share the optimism and enthusiasm of disaster professionals at witnessing a slow but steady evolution in the Region—from the fatalistic acceptance of disasters to the determination to take steps to avoid them whenever possible or minimize their effects through long-term disaster reduction planning.

Natural disasters will continue to impact critical facilities such as hospitals and schools, public infrastructure and housing. However, we can reduce the vulnerability of our communities to these natural hazards, that is, the potential losses can be dramatically diminished, by selecting safer locations and improving design and construction techniques and, most importantly, by ensuring that development decisions impact positively on vulnerability. The technical knowledge necessary to reduce risks from natural disasters has been available for some time.

The most lasting effect of the IDNDR could and should be to establish a disaster prevention "culture" in which safety from disasters is recognized as a basic requirement of individuals and of society in order to attain a "complete state of physical and mental well-being" or, in other words, health, as defined by the Alma-Ata Conference of 1978.



Carlyle Guerra de Macedo
Director
Pan American Sanitary Bureau

ACKNOWLEDGEMENTS

A myriad of people, initiatives and projects have fashioned the disaster management programs in this Region. No single agency or expert can possibly have an overall view of the multisectoral field of disaster prevention, mitigation, and preparedness. This publication attempts to outline broad trends and highlight the most significant events that have marked the long journey of the countries of Latin America and the Caribbean toward safety from disasters. Unfortunately, most of these significant events have been tragedies that caused loss of life and property—tragedies that were preventable.

This document is the result of a collaborative effort of the staff of the IDNDR Office for Latin America and the Caribbean and the Emergency Preparedness and Disaster Relief Coordination Program of PAHO/WHO. They have been assisted by literally hundreds of officials in the countries, experts, and representatives of agencies who dedicated their time and effort, provided data and documentation, met with consultants and laboriously reviewed the draft circulated at the Inter-American Conference in Cartagena, Colombia, in March, 1994. Every effort has been made to acknowledge specific sources of information. We apologize should any contributor or contribution not be properly recognized.

Again, without the support and cooperation of disaster experts and officials throughout Latin America and the Caribbean, the United Nations system, and bilateral and regional organizations, neither the progress achieved toward disaster reduction in Latin America and the Caribbean during the last 15 years nor, consequently, this book would have been possible.

Claude de Ville de Goyet
Editor-in-Chief

DEDICATION

This book is dedicated to the scientists who lost their lives in the eruption of the Galeras Volcano, one of the seven "Volcanoes of the Decade", in Colombia in 1993, as well as to the nationals in Latin America and the Caribbean who have enthusiastically dedicated their professional lives to promoting disaster prevention and preparedness in their countries.

Disasters

*When I arrived in Curacautín
it was raining ash
because the volcanoes willed it.*

*I had to detour to Talca
where they had grown so wide,
those tranquil rivers of Maule,
that I fell asleep on a boat
and went to Valparaíso.*

*In Valparaíso the houses
were falling around me
and I ate breakfast in the wreckage
of my lost library
between a surviving Baudelaire
and a dismantled Cervantes.*

*. . . I made my bed next to a river
that carried more stones than water,
next to some serene oaks,
far from every city,
next to stones that were singing,
and finally I was able to sleep in peace
in certain terror of a star
that was watching me and winking
with a certain malignant insistence.*

*But the gentle morning
painted the black night blue
and the enemy stars were swallowed by light
while I sang peacefully
with no catastrophe and no guitar.*

PABLO NERUDA

From *The Yellow Heart* © 1974 by Pablo Neruda
Translation © 1990 by William O'Daly. Reprinted by permission
Copper Canyon Press, Port Townsend, WA



CONTENTS

Foreword	iii
Acknowledgements	iv



1

NO SHORTCUTS TO DISASTER REDUCTION

From Ad Hoc Response to Preparedness	1
From Preparedness to Prevention	2
A New Focus	3

5

AN OVERVIEW OF THE REGION

The People and Their History	5
Geography	6
Climate	9
Demographic Trends	10
Urbanization	10
Production	12
Socioeconomic Aspects	13
Health, Sanitation, and Education	15
The Political Process	17
Conclusions	19

21

WHAT PUTS LATIN AMERICA AND THE CARIBBEAN AT RISK?

Natural Hazards in Latin America and the Caribbean	23
Geological Hazards	23
Hydrometeorological Hazards	27
Vulnerability	33
The Relationship Between Disaster and Development	37
Risk in Latin America and the Caribbean	39

41

THE WAKE-UP CALL: FROM IMPROVISATION TO RESPONSE PLANNING

The Evolution of National Response Organizations	42
The Evolution of International Assistance	44
New Ideas for Answering an Old Call	48
Conclusions	49



Cover photo
de Ville de Goyet PAHO/WHO

DISASTER PREPAREDNESS TAKES CENTER STAGE

The Centralized Phase: Strengthening Relief Agencies 51

The Decentralized Phase: Preparedness of Public Sectors and the Community 52

Preparedness as a Multisectoral Task 52

Legal Evolution of Disaster Preparedness 54

Community Organization 55

Collaboration Between Countries Strengthens Preparedness 57

Training: A Key to Preparedness 60

The Current Situation: From Preparedness to Prevention and Mitigation 63

Specialized Preparedness Initiatives 63

The Moral of Preparedness 71



**ONE STEP AHEAD OF DISASTERS:
MITIGATION AND PREVENTION**

Disaster Mitigation: Maps and Scenarios
for Planning 76

Disaster Mitigation and the Environment 80

Mitigating the Effects of Disaster
on Infrastructure 81

The Actors—Gathering and Applying
Knowledge 86

Disaster: A Window of Opportunity 90

Conclusions: Disaster Mitigation Is Irreversible 90

LOOKING TOWARD THE FUTURE

Toward Natural Disaster Reduction 94

The Factors 101

The Second Half of the Decade and Beyond 102

Map of the Region 104

References 107

Acronyms 111