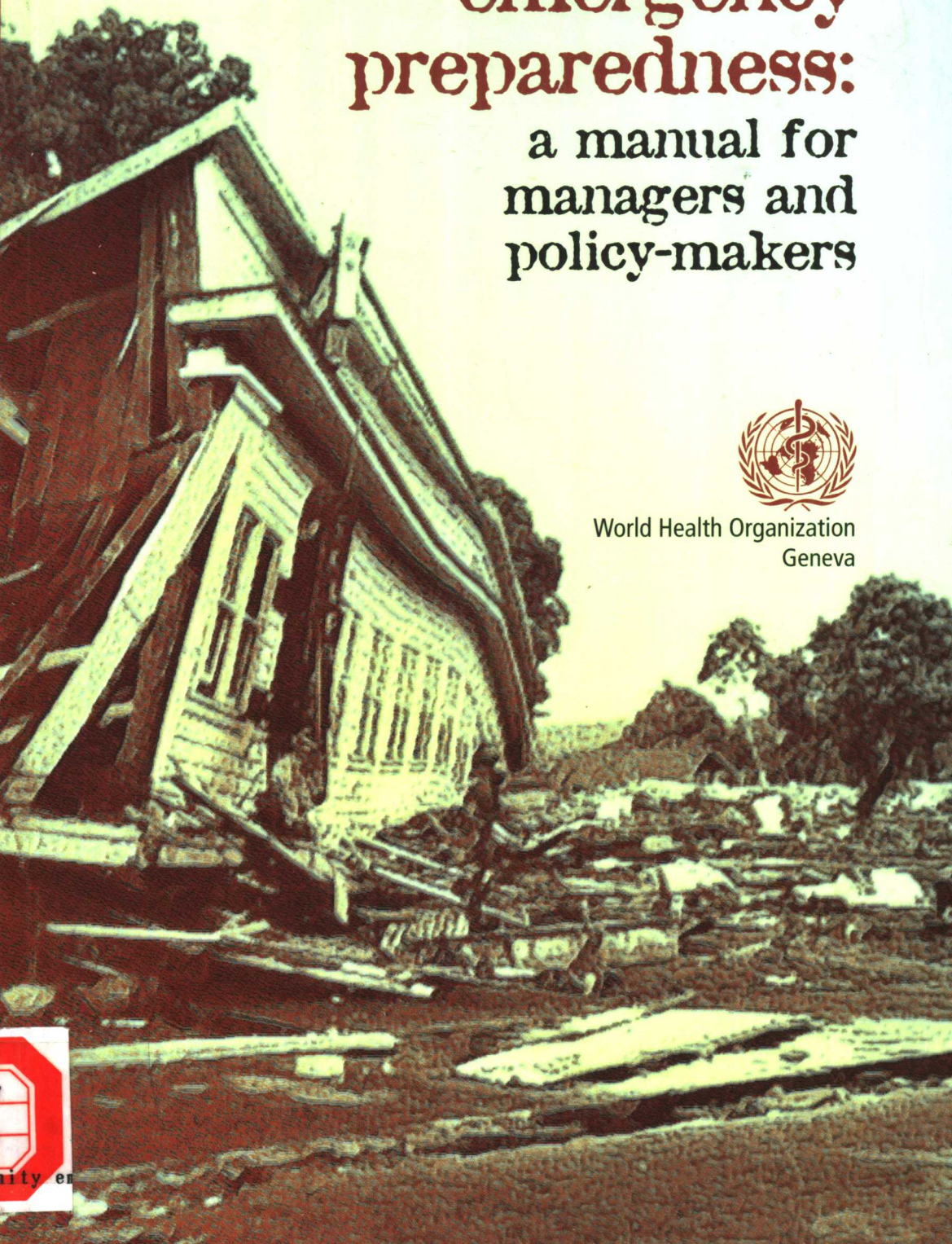
Community emergency preparedness:

a manual for managers and policy-makers



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The World Health Organization was established in 1948 as a specialized agency of the United Nations serving as the directing and coordinating authority for international health matters and public health. One of WHO's constitutional functions is to provide objective and reliable information and advice in the field of human health, a responsibility that it fulfils in part through its extensive programme of publications.

The Organization seeks through its publications to support national health strategies and address the most pressing public health concerns of populations around the world. To respond to the needs of Member States at all levels of development, WHO publishes practical manuals, handbooks and training material for specific categories of health workers; internationally applicable guidelines and standards; reviews and analyses of health policies, programmes and research; and state-of-the-art consensus reports that offer technical advice and recommendations for decision-makers. These books are closely tied to the Organization's priority activities, encompassing disease prevention and control, the development of equitable health systems based on primary health care, and health promotion for individuals and communities. Progress towards better health for all also demands the global dissemination and exchange of information that draws on the knowledge and experience of all WHO's Member countries and the collaboration of world leaders in public health and the biomedical sciences.

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Preface

This manual is designed to assist those concerned with preparing for emergencies at the local level. It explains what emergency preparedness is and how to achieve it in an effective, appropriate way. It is intended principally for:

— local organizations and managers responsible for emergency planning (e.g. health sector administrators, directors of public works organizations, hospital administrators, and heads of volunteer organizations); and
— national and international officials involved in emergency management.

National civil protection bodies, emergency management organizations, and sectoral departments, such as public health authorities, are responsible for ensuring the safety and security of a nation's people, resources, and environment in the face of hazards. It is at the community level, however, that the full effects of emergencies are felt, and it is there that definitive achievements in emergency preparedness can be made. It is difficult for national and international emergency organizations to form an effective working relationship with a community that is unaware of its hazards and unprepared for emergencies.

The key to emergency preparedness is the involvement and commitment of all relevant individuals and organizations at every level — community, provincial, national, and international. This multisectoral approach means that many organizations accept clearly-defined responsibilities and the need to coordinate their efforts. Without their involvement and commitment, emergency preparedness becomes fragmented, inefficient, and poorly coordinated.

Self-evidently, one of the principal effects of any emergency will be on the health of the population. Preparedness within the health sector was felt to be beyond the scope of this manual; a separate WHO publication devoted entirely to health sector preparedness is planned.

The term "emergency" in this manual is used in the broadest possible sense. One person's emergency may be another's mere incident, and disasters cause problems above and beyond smaller emergencies. Nevertheless, the processes of emergency preparedness can be used to develop systems and programmes for coping with every scale of adverse events. Similarly, the same preparedness processes can be used for enhancing the safety of a building, a community, or an entire country.

This manual explains the processes of policy development, vulnerability assessment, emergency planning, training and education, and monitoring and evaluation for use in a wide range of emergency management applications.

Acknowledgements

This manual is the result of a lengthy process of research, consultation, and writing. WHO collaborated with a number of organizations during this process, including the International Civil Defense Organisation and the International Federation of Red Cross and Red Crescent Societies. Several experts contributed to elaborating the concepts included in the text and many others reviewed it and helped finalize its content. Dr S. Ben Yahmed, formerly Chief of Emergency Preparedness at WHO, developed the idea for the manual and coordinated the effort, which greatly benefited from the contributions and advice of Dr R. Doran (formerly, Division of Emergency and Humanitarian Action, WHO) and Professor E. Quarantelli (University of Delaware).

Contributions were also made by WHO's regional offices and by the WHO divisions responsible for such areas as operational support in environmental health, nutrition, communicable diseases, and mental health.

Special acknowledgement is due to: Mr M. Tarrant (Australian Emergency Management Institute) and Mr B. Dutton (Disaster Management Consultants International) for managing the development of the hazard analysis process that formed the basis of Chapter 3, Vulnerability assessment; the Disaster Management Consultants International team for technical editing; Mr J. Lunn, Mr B. Dutton, Mr W.A. Dodds, and Mr G. Marsh for developing the planning process that formed the basis of Chapter 4, Emergency planning; and Mr P. Koob (Disaster Management Consultants International) for writing the manual.

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Chapter 1
Introduction

Decision-making for emergency preparedness

The increase in global vulnerability

Major emergencies and disasters have occurred throughout history and, as the world's population grows and resources become more limited, communities are increasingly vulnerable to the hazards that cause disasters. Statistics gathered since 1969 show a rise in the number of people affected by disasters (see Fig. 1). However, since there is little evidence that the actual events causing disasters are increasing in either intensity or frequency, it can only be concluded that vulnerability to disasters is growing.

Emergencies and disasters do not affect only health and well-being; frequently, large numbers of people are displaced, killed or injured, or subjected to greater risk of epidemics. Considerable economic harm is also common, and Fig. 2 shows how economic and insured losses have risen since 1960. This has led to a restructuring of the insurance industry, with insured parties bearing more costs, and governments assisting the insurance and reinsurance markets (*2*). Uninsured and economic losses are creating immense burdens on communities, economies, and governments. As Fig. 3 shows, these disasters are not confined to a particular part of the world; they can occur anywhere and at any time.

A disaster can be defined as any occurrence that causes damage, ecological disruption, loss of human life or deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area (*3*).

A recent Latin American study indicated that for each disaster listed in officially recognized disaster databases, there are some 20 other smaller emergencies with destructive impact on local communities that are unacknowledged. Hence, the actual harm caused by emergencies and disasters probably far outweighs the accepted disaster statistics.[1]

Disasters are causing greater harm to people, communities, and countries every decade, affecting current populations and existing infrastructure and threatening the future of sustainable development.

Clearly, neither communities nor governments can afford to wait for emergencies and disasters to occur before responding to them. The suffering caused by injuries

[1] Maskrey A. Communication at Seventh Scientific and Technical Meeting of the International Decade for Natural Disaster Reduction, Paris, 1995.

Fig. 1. **Number of people reported annually as affected by disasters**[a]

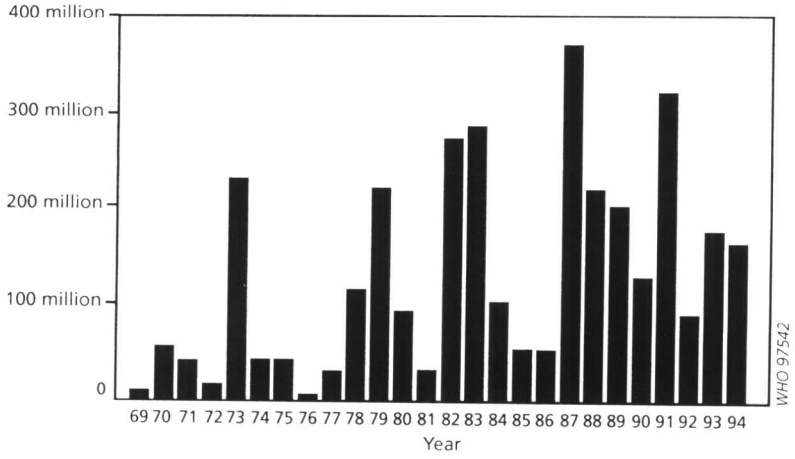

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Fig. 2. **Economic and insured losses from natural disasters, 1960–1996**[a]

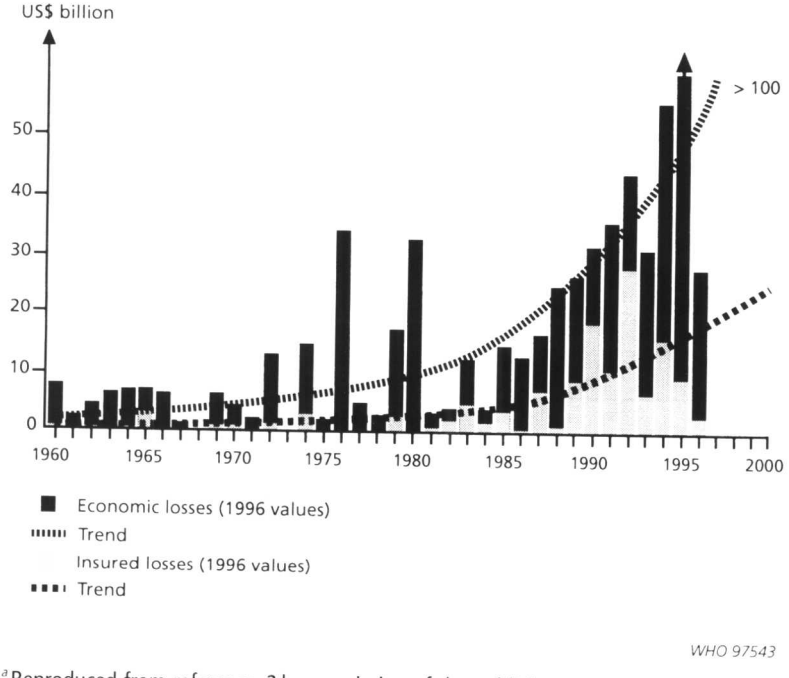

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Fig. 3. **Number of disasters with natural and non-natural triggers by global region in 1994**[a]

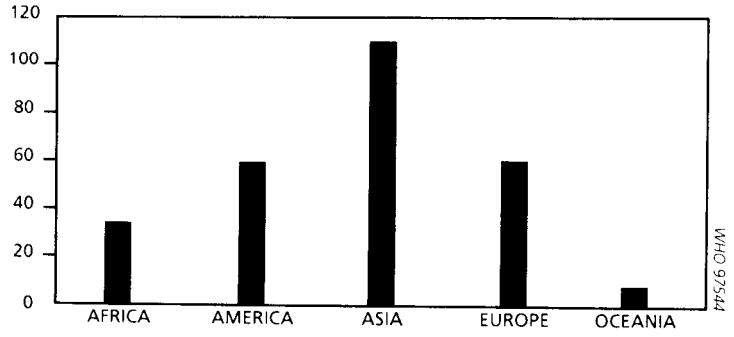

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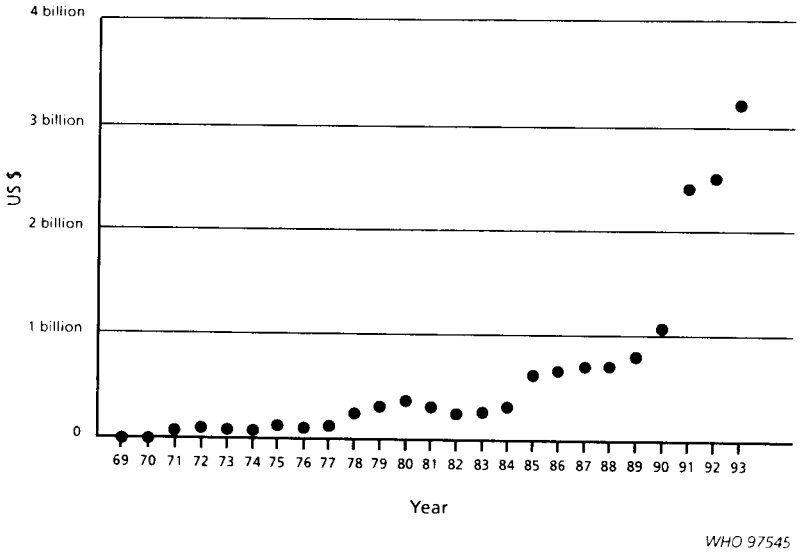
Fig. 4. **Value of humanitarian assistance (in US$) by year**[a]



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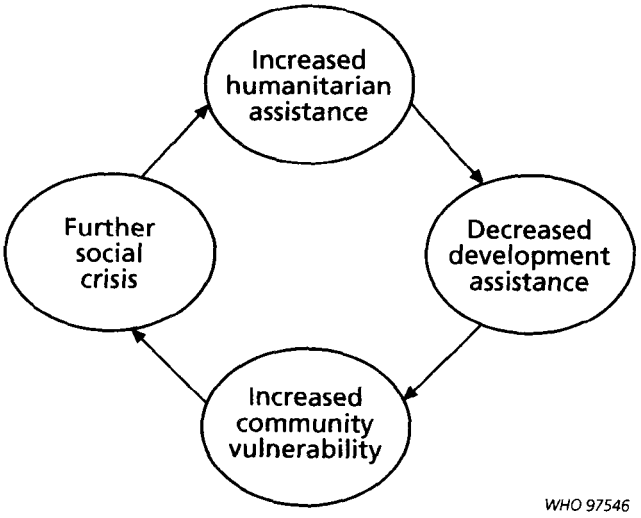
and deaths, social and economic disruption, and the destruction of the environment can be reduced through various measures designed to reduce vulnerability.

The effects of inappropriate humanitarian assistance

Often, the international community's reaction to disasters is to provide large amounts of humanitarian assistance and increased aid to the affected countries or communities. This might appear a fairly simple solution — to reduce short-term suffering and allow the community to rebuild. Figure 4 shows how humanitarian assistance has increased over the last three decades, from US$ 3 million in 1969 to US$ 3.2 billion in 1993. In 1995, it exceeded US$ 4 billion. Estimates show that, in 1980, global humanitarian assistance formed less than 1% of total overseas development assistance and that this figure had increased to 7% in 1993 (*4*).

Fig. 5. **How humanitarian assistance can increase vulnerability**



Frequently, humanitarian assistance takes the following course. It is not requested by the affected country and not integrated with the country's normal services or with community development. Assistance funds are diverted from those otherwise provided for development, thus reducing development opportunities in areas most vulnerable to emergencies and disasters. Delivery channels that parallel existing national channels are established for allocating and managing these assistance funds, leading to inefficiency and undermining existing development programmes. Hence, humanitarian assistance that is not properly coordinated at the national and community level can increase vulnerability and lead to greater dependence on further assistance, further social crises — and a need for *more* humanitarian assistance (see Fig. 5).

Badly coordinated humanitarian assistance clearly is not the answer and is a poor investment of time, resources, and money. Effective emergency preparedness, however, built in at an early stage, can establish the necessary structures and processes for an affected country to integrate humanitarian aid — provided *only* when requested — within its infrastructure in a cost-effective manner.

Vulnerability reduction and the focus on communities at risk

Coordinated efforts are also needed to halt emergencies and disasters by tackling the source — the deteriorating environment, the hazards that bring harm to communities, the vulnerability of communities to those hazards. Such efforts may be collectively termed "vulnerability reduction".

Vulnerability concerns the interaction between a community, its environment, and hazards. A community is the smallest social grouping in a country with an effective social structure and potential administrative capacity. The environment is the surrounding support system and processes. Hazards are the potential sources of emergencies of natural, technological, or social origin. A community

interacts with its environment and its hazards. This interaction can be positive, resulting in vulnerability reduction and in development, or negative, resulting in a series of crises and emergencies, as well as setbacks in development initiatives.

Vulnerability to emergencies and disasters is a function of the degree of exposure to hazards and of people's capacity to cope with hazards and their consequences.[1] Community vulnerability has two aspects: susceptibility, the degree to which a community is exposed to hazards, and resilience, the community's capacity to cope with hazards. It is possible for a community to have either high or low susceptibility and resilience.

For example, many communities are susceptible to frequent severe earthquakes because of their geographical position and geological environment, while others do not experience them. Of the susceptible communities, some, like San Francisco, and many communities in Japan, are highly resilient and some, like Armenia, less resilient. This difference in resilience can be due to:

— different abilities of buildings, and various elements of the infrastructure, to withstand seismic loads;
— differences in emergency preparedness (i.e. the degree to which a community is organized to cope with emergencies);
— the extent of the resources that can be applied to an emergency;
— the degree to which the province or nation can sustain economic and social damage.

The vulnerability of units smaller and larger than a community, such as individual buildings, organizations, national economies, and political structures, can also be described in terms of susceptibility and resilience.

Vulnerability reduction requires a number of coordinated activities, including:

— policy development;
— vulnerability assessment (to describe the problems and opportunities);
— emergency prevention and mitigation (to reduce susceptibility);
— emergency preparedness (to increase resilience).

Without vulnerability assessment, communities will not know in what way they are vulnerable and how hazards may affect them. Without emergency prevention or mitigation, communities are exposed to unnecessary risk. Without emergency preparedness and response mechanisms, an emergency can escalate into a disaster, causing great harm and setting development back years. These aspects of vulnerability should all be addressed by any national policy (see Fig. 6).

Vulnerability assessment, also known as "hazard analysis" and "risk assessment", is based on a series of techniques for determining the hazards that may affect a particular community, and the impact they may have. It also determines what factors make the community vulnerable to emergencies and disasters, by

[1] Vulnerability is different from "vulnerable groups", such as the aged, women, children, the sick, and the poor. An assessment of vulnerability may identify and describe vulnerable groups, but this is only part of the overall picture. Vulnerable groups have differing degrees of susceptibility and resilience, and exist within the context of communities that themselves have differing degrees of susceptibility and resilience.

Fig. 6. **Vulnerability reduction**

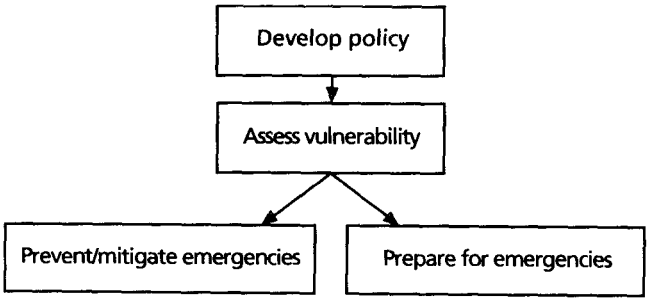
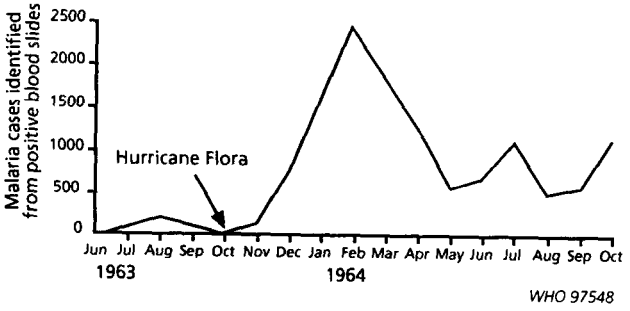


Fig. 7. **Number of cases of malaria following Hurricane Flora, Haiti, 1963**[a]



[a] Adapted from reference 5.

analysing the community's social, infrastructural, economic, and demographic composition.

Emergency prevention and mitigation involve measures designed either to prevent hazards from causing emergencies or to lessen the likely effects of emergencies. These measures include flood mitigation works, appropriate land-use planning, improved building codes, and relocation or protection of vulnerable populations and structures.

Emergency preparedness requires that emergency plans be developed, personnel at all levels and in all sectors be trained, and communities at risk be educated, and that these measures be monitored and evaluated regularly.

For example, Fig. 7 shows the prevalence of malaria before and after a hurricane. Malaria is just one of the health aspects of this emergency, and health is just one of the sectors affected. Emergency preparedness is required in the health sector to deal with the rapid changes in environment and disease brought about by emergencies.

A lack of preparedness will strain medical services and may ultimately impair development through increased morbidity and mortality in the population.

Because communities may be vulnerable to a broad range of hazards, the all-hazards approach should also be adopted. This approach entails developing strategies for all of the needs created by different types of potential emergencies. Each possible hazard can cause similar problems in a community, and actions such as warning, evacuation, mobilization of medical services, and assistance with community recovery may be required during and following emergencies. Thus, emergency preparedness can be based on common strategies and systems for the many different types of emergencies and disasters that might harm a community.

Certain hazards are of neither natural nor technological origin. Many forms of social exclusion can lead to social unrest, economic disruption, and violence. Such social exclusion may be caused by marginalization of the poor, tension between different ethnic and cultural groups, and other social inequities. One of the primary aims of development programmes with an integrated emergency preparedness component is to defuse potentially explosive social situations, and ensure the safety and security of the community.

Thus, vulnerability reduction addresses susceptibility by dealing with the causes of emergencies and disasters, and resilience, by strengthening communities that are still at risk.

Vulnerability reduction and development

Just as inappropriate humanitarian assistance can increase vulnerability, so vulnerability reduction can protect and enhance development. But how are vulnerability, hazards, and emergencies related to development?

It has been said that the purpose of development is to broaden people's range of choices. At the heart of this concept are three essential components:

- equality of opportunity for everyone in society;
- sustainability of opportunity from one generation to the next;
- empowerment of people so that they participate in and benefit from development processes (*6*).

Vulnerability to hazards is not spread equally throughout communities, and vulnerability reduction thus helps ensure equality of opportunity by reducing the susceptibility to harm of vulnerable groups. Emergencies are a direct threat to development, diverting development money to humanitarian assistance and damaging the structures that assist development. Vulnerability reduction is, like development, a process of empowering communities to take control of their own destinies.

Investing in vulnerability reduction protects human development achievements. Emergency preparedness also helps stricken communities limit the consequences of major emergencies and overcome them at an early stage, allowing development to resume.

Figure 8 illustrates how prepared communities can maintain and improve their level of development, despite emergencies. A prepared community will react to a potential disaster effectively, perhaps limiting it to the level of an emergency.

Fig. 8. **The effects of disasters on the development of prepared and unprepared communities**

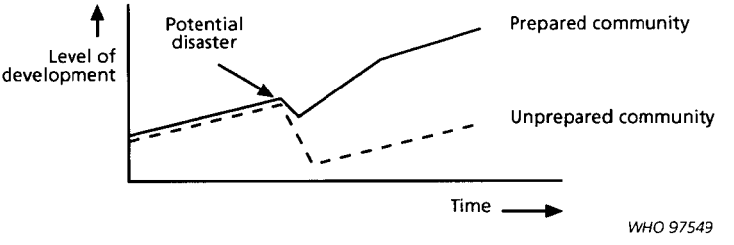
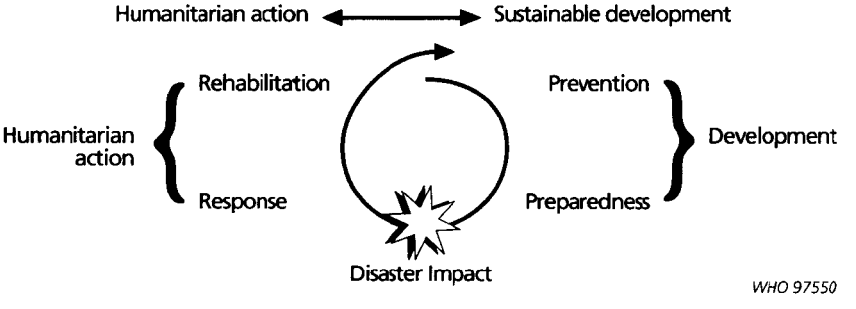


Fig. 9. **Emergency management cycle**[a]



Note: Emergency management and development are linked. Prevention and preparedness measures should be integrated into development planning, in order to minimize the disaster impact. Response and rehabilitation are humanitarian activities which should contribute to sustainable development. Emergency management is a continuing process which is relevant not only at the time of the disaster impact, but also as an integral part of sustainable development.

[a] Reproduced from reference 7.

Thus, although the event may affect community development, its impact will be tempered. An unprepared community, however, may take years to recover from a severe setback in development.

Preparedness is a feature of many successful organizations in the world today. When a new or existing programme in an organization is being assessed, the risks, costs, and benefits are analysed. This allows the organization to ensure that its investment is protected, leading to a more secure future. These risk-management practices can be applied to communities: vulnerability reduction and emergency preparedness components should be built in to each new development, and whenever existing developments are reviewed (see Fig. 9).

The comprehensive approach combines prevention (and mitigation), preparedness, response, and recovery (rehabilitation). It is important that all sectors and organizations are active in each of these areas.

The responsibility for vulnerability reduction

Vulnerability reduction is often perceived as the exclusive domain of one organization, sector, or level of society and government. But a disaster — by definition

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