From Vulnerability to Preparedness

EMERGENCY AND HUMANITARIAN ACTION IN THE WHO SOUTH-EAST ASIA REGION

World Health Organization
Regional Office for South-East Asia
Contents

- Acknowledgements ........................................ iv
- Preface ...................................................... v
- WHO South-East Asia Region: Hazard profile and disaster preparedness ......................... 1
- Country reports
  - Bangladesh ............................................. 13
  - Bhutan .................................................. 23
  - DPR Korea .............................................. 31
  - India ...................................................... 39
  - Indonesia .............................................. 49
  - Maldives ............................................... 61
  - Myanmar ............................................... 69
  - Nepal .................................................. 77
  - Sri Lanka ............................................... 89
  - Thailand .............................................. 99
  - Timor-Leste .......................................... 109
Acknowledgements

This publication would not have been possible without the assistance of all EHA Country Focal Points who helped in collating and reviewing the information at various stages.

Special thanks to Bandana Malhotra and Naveen Siromoni for working tirelessly in getting all the information together and packaging this creatively.

The Cover

The icon represents the elements of nature – the earth below, the sky above and all that lies in between. The arched curves are representative of a pair of hands that offer safety, security and protection from life-threatening health consequences – whether from natural, social, political or cultural causes – in a caring and compassionate manner. The silhouette of the face symbolizes the work in emergencies and humanitarian action – to look ahead, and move forward with resolve, hope and confidence towards making the world a safe place for the human race at all times, and ensure better health outcomes before, during and after crises.
Preface

The basic information management practice in disaster management is profiling of hazards and risks that countries face. This information needs to be collected periodically and reviewed in the context of the development of various issues, sectors and disciplines.

Through a meticulous process, this publication contains updated profiles of countries with respect to hazards and disaster management systems vis-à-vis the work of WHO in the South-East Asia Region. It facilitates preparation of a baseline for disaster preparedness in order to chart the path towards its improvement. The ongoing support provided by all partners including Ministries of Health and National and Sub-National Disaster Management Authorities is described in the context of each Member State. Various mechanisms and best practices are outlined and will be useful in addressing resource gaps, delivery of technical guidance, advocacy for political commitment and developing strategies and plans.

The regular updating of relevant information and analysis enables emergency management managers to define their actions based on evidence, which also conforms to the long-term strategic objective of WHO: To reduce the health consequences of emergencies, disaster, crises and conflicts, and minimize their social and economic impact.

Dr Poonam Khetrapal Singh
Deputy Regional Director
WHO South-East Asia Region:
Hazard profile and disaster preparedness

Emergency and Humanitarian Action
WHO SEARO
To reduce the health consequences of emergencies, disasters, crises and conflicts, and minimize their social and economic impact.

Strategic Objective 5
Medium-term Strategic Plan 2008–2013
The *World disasters report 2006* indicates that around 58% of the total number of people killed due to natural disasters during the decade 1996–2005 were from SEAR countries. During this decade (1996–2005), the Asia Region had the highest number of natural disasters (1273 reported events) and technological disasters (1387 reported events). These comprised 44% of all disasters that occurred worldwide during this time period.

**Total number of people killed in natural disasters (1996 to 2005)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of People Killed</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>48,812</td>
<td>9%</td>
</tr>
<tr>
<td>Europe</td>
<td>77,773</td>
<td>8%</td>
</tr>
<tr>
<td>Americas</td>
<td>84,246</td>
<td></td>
</tr>
<tr>
<td>Asia (excluding SEAR countries)</td>
<td>184,901</td>
<td>20%</td>
</tr>
<tr>
<td>SEAR Countries</td>
<td>536,176</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,069,124</td>
<td></td>
</tr>
</tbody>
</table>

*Source: The World Disasters Report 2006*

### HAZARD PROFILE OF COUNTRIES IN SEAR

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclones and storm surges</td>
<td>Bangladesh, east and north-west coast of India, Indonesia, Sri Lanka, southern Thailand and Timor-Leste</td>
</tr>
<tr>
<td>Tsunami/tidal waves</td>
<td>India, Indonesia, Maldives, Myanmar, Sri Lanka, Thailand, Bangladesh</td>
</tr>
<tr>
<td>Floods</td>
<td>India; parts of DPR Korea, Nepal, Myanmar, Bangladesh, Indonesia, Sri Lanka, Thailand, Timor-Leste</td>
</tr>
<tr>
<td>Drought</td>
<td>DPR Korea, parts of India, Indonesia, Sri Lanka, Thailand and Timor-Leste</td>
</tr>
<tr>
<td>Tornadoes</td>
<td>Parts of Bangladesh</td>
</tr>
<tr>
<td>Volcanic eruption</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Complex emergencies/civil unrest and conflict</td>
<td>Variable risk for all countries</td>
</tr>
<tr>
<td>Biological, chemical and radionuclear threats</td>
<td>Variable risk for all countries</td>
</tr>
</tbody>
</table>
Member States of the Region differ widely in terms of issues and challenges in emergency preparedness and response (EPR). Although some hazards and vulnerabilities are common to all countries of the Region, there is still a wide disparity in the following areas:

- National capacities for addressing disaster and emergency issues in all phases of the disaster cycle;
- Priority hazards to be addressed within countries;
- Sociocultural and political systems which largely influence the occurrence of complex emergencies, and the coping, response and rehabilitation capabilities;
- The coverage and quality of basic services before, during and after a disaster or an emergency;
- Disaster preparedness, which is usually built around response rather than a comprehensive system installed at all levels and encompassing risk-reduction initiatives.

In Member countries, the Regional Programme is at different phases, depending on the individual capacity of each country and its needs. Thus, country capacities for immediate response to a disaster vary, as do their capacities for recovery and rehabilitation, for absorbing and mitigating threats, and risk reduction.

All countries in SEAR have a national disaster plan. Related legislation is in place in Bangladesh, India, Indonesia, Myanmar, Nepal, Sri Lanka and Thailand. Bangladesh, India, Indonesia, Nepal, Sri Lanka and Thailand have reasonably developed systems for disaster and EPR. However, improvements may still be needed in such aspects as multisectoral coordination, community initiatives and mitigation activities focusing on specific hazards. Timor-Leste has a nascent, and still quite transient, disaster and emergency management programme, while Bhutan and the Maldives have recently begun their respective programmes.

### Key aspects of emergency preparedness and response in countries

<table>
<thead>
<tr>
<th>National Disaster Plan</th>
<th>BAN</th>
<th>BHU</th>
<th>DPRK</th>
<th>IND</th>
<th>INO</th>
<th>MAV</th>
<th>MMR</th>
<th>NEP</th>
<th>SRL</th>
<th>THA</th>
<th>TLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National coordinating system</th>
<th>BAN</th>
<th>BHU</th>
<th>DPRK</th>
<th>IND</th>
<th>INO</th>
<th>MAV</th>
<th>MMR</th>
<th>NEP</th>
<th>SRL</th>
<th>THA</th>
<th>TLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Related legislation</th>
<th>BAN</th>
<th>BHU</th>
<th>DPRK</th>
<th>IND</th>
<th>INO</th>
<th>MAV</th>
<th>MMR</th>
<th>NEP</th>
<th>SRL</th>
<th>THA</th>
<th>TLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>– being developed</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disaster and emergency programmes within the MoH (not just a focal point)</th>
<th>BAN</th>
<th>BHU</th>
<th>DPRK</th>
<th>IND</th>
<th>INO</th>
<th>MAV</th>
<th>MMR</th>
<th>NEP</th>
<th>SRL</th>
<th>THA</th>
<th>TLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Focal point only</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community-based systems in preparedness and response</th>
<th>BAN</th>
<th>BHU</th>
<th>DPRK</th>
<th>IND</th>
<th>INO</th>
<th>MAV</th>
<th>MMR</th>
<th>NEP</th>
<th>SRL</th>
<th>THA</th>
<th>TLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ in some states</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

(+) denotes presence of item and (–) denotes absence of item

Source: Working Paper for the 57th Regional Committee on Emergency Health Preparedness
Thus, the variety of hazards and risks that need to be addressed vis-a-vis national capacities provides a challenging setting for action related to disasters and emergencies.

EMERGENCY AND HUMANITARIAN ACTION (EHA) PROGRAMME IN SEARO

The regional approach of the Programme focuses on special thematic issues that are common to all Member States. Foremost among these are capacity building and training, addressing public health needs in emergencies, and the use of appropriate and available technologies.

The Emergency and Humanitarian Action (EHA) Programme of the South-East Asia Regional Office (SEARO) of WHO began in 1989, with assessment of the country emergency needs in the health sector in selected SEAR countries – India, Bangladesh and Indonesia. In 1991, a short-term consultant was appointed under the supervision of then External Relations Officer (ERO) and Director PCI to perform the functions required to address the needs of countries in EPR. A full-time post of Regional Advisor, EHA was created in 1995. Since then, WHO SEARO has been committed to the organizationwide mission of increasing the capacity and self-reliance of countries in preventing disasters, preparing for emergencies, mitigating their health consequences, and creating a synergy between emergency action and sustainable development.

WHO poses itself the goal to reduce avoidable loss of life, burden of disease and disability in emergencies and post-crisis transitions.

WHO has four core functions in crises:

- Health assessment and tracking: ensuring that proper assessments are undertaken, assessing needs and priorities, carrying out surveillance and monitoring of the impact of humanitarian responses;
- Coordinating health action: convening different actors, exchanging information, ensuring coordination, agreeing on strategies in response to assessments, ensuring joint and focused action;
- Filling gaps: identifying gaps in the response which have a significant impact on survival rates and levels of ill-health, and ensuring they are filled, including restoring basic public health functions; and
- Strengthening local capacity: training, rehabilitating essential structures, repairing and restarting broken systems, empowering critical professionals.

The EHA Programme of SEARO together with all of its focal points in all country offices work with the governments as well as development partners to fulfill these functions.

POLITICAL COMMITMENT

Emergency preparedness and response at the country level calls for a multisectoral and multihazard approach: this means that there needs to be a single mechanism to coordinate, prepare and respond to all types of disasters. Among the strategies for emergency health preparedness, building political will and commitment in mainstreaming disaster risk management is a priority.

The main issue for governments and not just ministries of health is to build political commitment for risk management in all aspects of disaster and emergency management. Commitment from legislators,
Organizational mandate

There is increasing demand from Member countries for WHO to take the lead in the health sector for preparedness and response in emergencies as described in World Health Assembly (WHA) Resolutions 58.1 and 59.22 as well as Regional Committee (RC) 57/3 and 58/3.

WHA Resolution 58.1 urges Member States “to formulate, on the basis of risk mapping, national emergency preparedness plans that give due attention to public health, including health infrastructure, and to the roles of the health sector in crises, in order to improve the effectiveness of responses to crises and of contributions to the recovery of health systems”. It also asks Member States “to ensure that – in times of crises – all affected populations, including displaced persons, have equitable access to essential health care, focusing on saving those whose lives are endangered and sustaining the lives of those who have survived, and paying particular attention to the specific needs of women and children, older people, and persons with acute physical and psychological trauma, communicable diseases, chronic illnesses, or disability”.

It requests the Director-General “to adapt, redesign where necessary, and secure adequate resources for effective work in the area of emergency preparedness and response, and other areas of work involved in the Organizationwide response to crises”.

WHA Resolution 59.22 “requests Member States to further strengthen national emergency mitigation, preparedness, response and recovery programmes through, as appropriate, legislative planning, technical, financial and logistical measures, with a special focus on building health systems and community resilience”.

RC57/3 requests the Regional Director “to intensify collaboration with Member States and relevant partners in strengthening emergency health preparedness and response comprehensively, including logistics, recovery and rehabilitation, mitigation and prevention activities”.

Medium-term Strategic Plan

For the first time, a Medium-term Strategic Plan (MTSP) (2008–13) will form the core of WHO’s result-based management framework within the overall context of the 11th General Programme of Work. The MTSP also takes into account the resolutions of global and regional governing bodies of WHO, as well as the needs of countries as reflected in Country Cooperation Strategies. The MTSP provides the framework for the work of the entire Organization and is arranged in 16 Strategic Objectives (SOs). Of these SOs, SO 5 is relevant to disaster management. It aims “to reduce the health consequences of emergencies, disasters, crises and conflicts, and minimize their social and economic impact”. This SO is designed to contribute to human security by minimizing the negative effect on health of emergencies, disasters, conflicts and other humanitarian crises, and by responding to the health and nutrition needs of vulnerable populations affected by such events.
The joint efforts of Member States and the Secretariat regarding this SO encompass the following aspects: health sector emergency preparedness, intersectoral action for risk and vulnerability reduction within the framework of the International Strategy on Disaster Reduction, response to the health needs (including nutrition as well as water and sanitation) of emergencies and crises, needs assessment of affected populations, transition and recovery health actions in post-conflict and post-disaster situations, fulfilling the mandate of WHO within the framework of the humanitarian reform, global alert and response system for public health emergencies, threat-specific risk reduction along with preparedness and response programmes for environmental and food safety.

As part of the United Nations humanitarian reform process, WHO has been asked to ensure the coordination, effectiveness and efficiency of activities concerning preparedness, response and recovery in relation to health action in crises. WHO leads the United Nations Inter-Agency Standing Committee Health Cluster.

KEY INITIATIVES

Regional strategy

A strategy has been developed by the Programme together with country focal points and external experts to ensure that the emergency preparedness initiatives are taken forward within the Organization to assist Member States efficiently and effectively. To this end, a Regional Strategy has been drawn up and is planned for implementation from 2008 to 2013. The goal is to reduce avoidable morbidity and mortality in emergencies through improved community capacity and enhancement of health system resilience.

It is envisioned that EHA SEARO will provide regional and global leadership in:
- technical guidance and public health interventions in crises
- benchmarking and standard-setting in emergency/risk management
- coordination and management of stakeholders
- information management and communications
- supporting capacity building in Member States

The Regional Strategy has five initiatives that need to be implemented:

I. Achieving the SEAR benchmarks for Emergency Preparedness and Response

In November 2005, countries gathered in Bangkok to develop and agree on certain benchmarks to put in place a comprehensive EPR system in countries. Designed as a framework to turn lessons into action after the tsunami, the benchmarks for EPR were developed by a multisectoral group from all Member States. The benchmarks for EPR are at the core of the EHA SEARO strategy. The challenge is to take these forward and support their achievement in a systematic manner within the context of the need of each of the countries.
Priorities are different for each country as systems and areas that require strengthening are different. To further assess priorities, key indicators and standards per benchmark are needed to guide national and subnational authorities. Consensus on a monitoring system in the SEARO EHA and Country Office EHA Programme is also essential to keep the focus on addressing the completion of the benchmarks per country.

There are 12 benchmarks and these cover the three broad areas of multisectoral coordination, community empowerment and capacity building. Specifically, these are as follows:

- Legal framework and functioning coordination mechanisms, and an organizational structure in place for health EPR at all levels involving stakeholders;
- Regularly updated disaster preparedness and emergency management plan for the health sector and standard operating procedures (SOPs) such as emergency directory, national coordination focal point, in place;
- Emergency financial (including national budget), physical and regular human resource allocation and accountability procedures established;
- Rules of engagement (including conduct) for external humanitarian agencies based on needs established;
- Community plan for mitigation, preparedness and response developed, based on risk identification and participatory vulnerability assessment, and backed by a higher level of capacity;
- Community-based response and preparedness capacity developed, supported with training and regular simulation/mock drills;
- Local capacity for emergency provision of essential services and supplies (shelters, safe drinking water, food, communication) developed;
- Advocacy and awareness developed through education, information management and communication (pre-, during and post-event);
- Capacity to identify risks and assess vulnerability at all levels established;
- Human resource capabilities continuously updated and maintained;
- Health facilities built/modified to withstand expected risks; and
- Early warning and surveillance systems for identifying health concerns established.

Current situation

Till date, one review has taken place (June 2006, Regional Consultation for Emergency Preparedness and Response, at Bali, Indonesia) six months after the adoption of the benchmarks. In summary, for benchmarks relating to multisectoral coordination, Bangladesh and India have systems well set. Revision of laws and policies are ongoing in Thailand, Nepal and Sri Lanka. New laws are needed in Bhutan and the Maldives. Bangladesh and India have financial systems linked with their legislation. For all countries a minimal budget can be accessed for response.

As for the community empowerment benchmarks, these are very strong in Bangladesh, India and Thailand. New policies have incorporated community participation in the Maldives and Bhutan.
All countries have or are in the process of incorporating disaster management issues in the school curricula.

For capacity building, training mechanisms are in place for all countries, although all have requested access to improved guidelines and standards. Early warning mechanisms at the community level are ensured in India, Bangladesh, Nepal and Thailand. Efforts are also ongoing in countries that have initiated emergency preparedness such as the Maldives and Bhutan.

Recently, standards and indicators per benchmark have been developed by EHA and experts to ensure its appropriate achievement. The indicators are currently being modified to incorporate the country contexts.

**Key activities**

- Devise a regular reporting system of the progress in achieving the benchmarks for EPR.
- Invest in achievement of the benchmarks through regular budget allocations.

**II. Systematizing human resource development for EPR**

There are a number of issues and gaps in achieving this:

- Most training courses focus on the response phase; limited trainings exist for preparedness and no reported course for the recovery phase or the whole spectrum of risk management;
- Standards for training are largely absent;
- Standard terms of reference and competency models have not been established in ministries of health and line agencies of countries.

As part of the output of a workshop organized jointly by the WHO Western Pacific Regional Office (WPRO) and SEARO on human resource development (HRD) in EPR, priorities were identified to address these gaps, such as establishment of a training system at the country and regional levels with a database on participants, adaptation of materials, linkages for an “evidence-based approach” and human resource development; harmonizing efforts for human resources in health for emergency and disaster response through management units and staff in MoHs.

**Public Health and Emergency Management in Asia and the Pacific (PHEMAP):** This is an interregional training programme between SEARO and WPRO in collaboration with the Asian Disaster Preparedness Center based in the Asian Institute of Technology in Bangkok, Thailand. The course is offered once a year and is meant for high-level policy-makers and programme managers who address disaster and emergency preparedness and response in the health sector. National PHEMAP courses are planned in Sri Lanka, India and Bangladesh within the biennium.

**III. Building the evidence base for EPR**

The body of knowledge that guides best practices should be further generated and made accessible to practitioners and stakeholders of the discipline of public health emergency and risk management. It is important that this knowledge base be consistent with the context of the countries of the Region.
The gaps in the evidence base need to be filled to improve the way risk managers and humanitarian workers plan and conduct their work. Currently, one important initiative in building best practices and standards for response is the SPHERE Project. Making evidence-building systemic to the work of WHO in EPR from collection, analyses, storage and dissemination will help fill in this gap.

IV. Building resources and partnerships

Three factors are important: unpredictability of demand, indefiniteness of supply and skewed priorities. An all-weather strategy needs to be followed, which is globally integrated but locally tailored. Donors must be cultivated at all times, i.e. during non-emergency times as well as during emergencies.

MoU with the International Federation of the Red Cross (IFRC): A Memorandum of Understanding was renewed in March 2007 between WHO SEARO and IFRC. This agreement is a consensual commitment between the two organizations both at the regional and country level to collaborate on disaster preparedness and response. A joint workplan between the two organizations was developed to put the agreement into action.

V. Strengthening communications

Strategic communication is critical to the work of emergency and risk managers for implementing projects, generating early warning, providing health messages in the emergency phase, engaging partners, and providing information and awareness to affected communities regarding their risks and options. To achieve adequate communication support for EPR in countries and the Region, it is important to cultivate relationships with the media to engage them in the work of public health EPR. In addition, WHO Offices should strengthen their communication function in the area of EPR work, and support MoH communication units in dealing with communication needs for preparedness and response.

The South-East Asia Regional Health Emergency Fund (SEARHEF)

Several requests from Member States were received in various Regional Meetings to establish a fund which supports countries in the Region in the event of emergencies:

- The Regional Consultation for Emergency Preparedness and Response (June 2006), which culminated in the Bali Declaration, states that there is a need to “promote the creation of a Regional Solidarity Fund for Emergency Response”;
- At the 24th Health Ministers Meeting, Dhaka, 20–21 August 2006, Member countries recommended the creation of an emergency fund.

The concept and principles of the fund were further deliberated and refined through several Regional consultations and a subsequent working group meeting composed of representatives from Member countries was held in Bangkok on 11–12 June 2007. The SEARHEF has a target date of 1 January 2008 for set up, coinciding with the beginning of the new biennium. The SEARHEF is not an instrument for funding bulk relief and recovery, or reconstruction and rehabilitation work. Established mechanisms such as Flash Appeals, Consolidated Appeals Process (CAP) and Central Emergency Response Fund (CERF) will continue to be the main funding sources.
Considering the magnitude of past events, the variety of hazards and vulnerabilities of Member States, SEARO EHA has geared up to address the needs of countries systematically. With the SEAR EPR benchmarks system as the main guide for the work of EHA, a way to measure the progress of processes and eventually the impact of work in countries can be documented well. The steps taken by the EHA unit have been the product of lessons learnt from previous events, experience of staff, contributions of experts from various disciplines in line with the commitment of the Organization “to reduce the health consequences of emergencies, disasters, crises and conflicts, and minimize their social and economic impact”.

**THE WAY AHEAD**

**CONTACT DETAILS**

**Deputy Regional Director**
Dr Poonam Khetrapal Singh  
WHO Regional Office for South-East Asia  
World Health House, Indraprastha Estate, Mahatma Gandhi Marg, New Delhi 110002, India  
Phone: 00-91-11-23370804, 23379456 (direct)

**EHA Focal Point**
Dr Roderico H. Ofrin  
Technical Officer  
WHO SEARO
Phone: +91-11-23370804; 23309444  
Fax: +91-11-23378438  
Mobile: (00-91) 9818688089  
Email: ofrinr@searo.who.int
Emergency and Humanitarian Action
Country Report
Bangladesh

HAZARD PROFILE

The People’s Republic of Bangladesh is an exceedingly flat, low-lying, alluvial plain traversed by five major and more than 230 rivers and rivulets (with a total length of 24140 km). It has a coastline of about 580 km along the Bay of Bengal.

The geographical location and topographical features of Bangladesh expose the country to almost all kinds of natural and human-induced disasters. Over the past three decades, Bangladesh experienced more than 170 large-scale natural disasters that killed half a million people and affected more than 400 million. Seven of the 10 deadliest cyclones of the twentieth century hit Bangladesh in the past 40 years. The current density of population is one of the highest in the world.

Natural hazards
Floods including flash flood, cyclone and tidal surge, tornado, river erosion, landslide, earthquake, drought, etc. are some of the natural hazards the country faces.

Human-induced/biological/technological hazards
These include road and river traffic accidents, epidemics, fires, building collapse, gas field explosion, political conflict, terrorist attack, etc.

Internally displaced persons (IDPs) and refugees
Bangladesh hosts over 22 000 ethnic refugees from Myanmar, 60 000 people from the ethnic groups of Chakma and Jumma people and 240–300 000 Biharis (from India). Internal displacement in Bangladesh is most often associated with the devastating cyclones and floods that occur regularly. In addition, close to one million people are displaced annually by the inundation of flood plains, erosion and the shifting courses of the country’s major river systems.¹

Health hazards
Bacterial and other known forms of enteric infections are endemic, infectious diseases, malnutrition, pneumonias, skin and eye diseases are common, while maternal mortality (3.2/1000 live births) and infant mortality (57/1000 live births) are high due to the tropical climate, combined with the existence of large open water bodies, dense population, poverty and poor access for the majority to reliable health services.²

Factors affecting vulnerability
- Demographic and social factors, such as overpopulation, social inequality and rapid urbanization
- Migration to high-risk areas such as flood plains and far-flung islands
- Escalated environmental degradation
- Arsenic contamination of drinking water affects about two-third of the country (30–35 million people in Bangladesh are exposed to drinking water that contains harmful concentrations of arsenic).
National plans and policies

A number of written policies, public health guidelines and standard operating procedures (SOPs) for emergency response are currently available for use by health managers. The health sector of the Government of Bangladesh in collaboration with the WHO Country Office has prepared a “National Policy on Health Emergency Management” and “Standard Operating Procedure for Health Emergency Management”, which signify great achievements of Bangladesh.

- National Plan for Disaster Management, 2006 (Version 5)
- WHO and UNDMT Contingency Plan (prepared by WHO, UNDP, UNICEF and WFP), 2006
- National Avian Influenza and Human Pandemic Influenza Preparedness and Response Plan, 2006
- Guideline on Addressing Health in Emergencies (The context of a developing country), 2004
- Standard Operating Procedure: Management of Public Health in Emergencies, 2004
- Bangladesh National Policy for Emergency Health Management, 2004
- National Safe Blood Transfusion Policy, 2001
- Protocol for Mass Casualty Management in Bangladesh, 2001
- Standing Order for Disaster Management, 2000
- Guideline for Health Information Management in Emergency Situations, 1999
- Bangladesh National Food and Nutrition Policy, 1997

Disaster management in the health sector

The national health system is organized in five tiers in line with the universal primary health-care approach. The largest health service provider of the country is the Ministry of Health and Family Welfare (MoH&FW). It has two major implementation wings – the
Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). The DGHS is responsible for the implementation of all public health programmes in the country, including the emergency preparedness and response (EPR) programme in the health sector.

The DGFP is responsible for implementing the family planning programme and providing family planning-related technical assistance to the Ministry.

The WHO EHA (Emergency and Humanitarian Action) Programme in Bangladesh, in collaboration with the MoH&FW, provides technical and logistical support to the government health sectors (EPR component under Communicable Diseases Control, Health, Nutrition and Population Sector Programme, HNPSP) in the country. The Joint Secretary (Public Health and WHO), MoH&FW is the Programme Manager for EHA, and the National Professional Officer (CD) is the responsible officer and focal point of the EHA Programme of WHO. The Programme has representatives from the Director General of Health Services (DGHS), Armed Forces, UN agencies and selected NGOs. Technical and logistical support for the EPR Programme is provided by the EHA, WHO Country Office.

The major objectives of the EHA Programme include:
- Capacity and capability building of the health sector for prevention and mitigation of the adverse health effects of natural disasters and emergencies;
- Strengthening surveillance systems in the country and establishing an early warning system for impending outbreaks, and for emerging and re-emerging communicable diseases.

The EHA Programme is implemented through:
- Strengthening multisectoral coordination, planning, cooperation, communication and action for disaster mitigation, emergency preparedness, response and recovery.
- Enhancing the country’s responsiveness to public health emergencies including medical response to natural disasters in the health sector.

Recent activities of the WHO EHA Programme
- For strengthening routine and disaster-related disease surveillance and early warning system of impending outbreaks from the periphery to the central level, the EHA Programme has provided 448 computers, printers, uninterrupted power supply (UPS) systems and other relevant materials, and distributed 16 respiratory ventilators for patients with respiratory distress in the isolation wards of medical college hospitals and other specialized hospitals for emerging infectious diseases such as avian influenza (AI)/H5N1 and severe acute respiratory syndrome (SARS).
- Essential life-savings drugs, personal protective equipment (PPE) and medical supplies have been procured and distributed for case management of acute watery diarrhoea, acute respiratory infection (ARI), acute respiratory distress syndrome (ARDS), and emerging and re-emerging communicable diseases such as SARS and AI/H5N1. Drugs, supplies and PPE have also been stockpiled for maintaining a buffer stock at the upazilla (subdistrict) and district levels.
- Training is ongoing at the central, district and upazilla levels for health sector personnel. Additional training for capacity building at all levels is being provided on mass casualty management, disaster preparedness and response and related public health issues, mitigation and reduction of adverse health effects.
Disaster management in the non-health sector

The Ministry of Food and Disaster Management (MoF&DM) has the mandate to coordinate all disaster management activities within the country and supports three operational elements: Disaster Management Bureau, Directorate of Relief and Rehabilitation, and the Directorate of Food.

The Disaster Management Bureau (DMB) works as a specialized technical unit of the Government, advising it on disaster prevention, mitigation and risk reduction. Under the same operational framework, the health sector coordinates with other potential sectors in the country including NGOs for maximizing multisectoral collaboration in emergency response.

**Coordination of the EPR Programme in Bangladesh**

<table>
<thead>
<tr>
<th>POLICY</th>
<th>NDMC</th>
<th>IMDMCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoF&amp;DM</td>
<td></td>
<td>WHO (CMT)</td>
</tr>
<tr>
<td></td>
<td>DMB</td>
<td>WHO (CMT)</td>
</tr>
<tr>
<td></td>
<td>DGHS (IC)</td>
<td>BMH&amp;FW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM, BAN EHA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NDSC (Focal Point, EHA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPERATION</th>
<th>Civil Surgeon (Dist.)</th>
<th>Control Room</th>
<th>BCHEPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Admin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-PHC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-IPH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-FIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMSD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIPSOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEDCR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NDSC (Focal Point, EHA)</td>
<td>WHO (CMT)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WORK OF WHO**

WHO works closely with the MoH&FW and MoF&DM, and liaises with these at different levels. In addition, it coordinates the activities of several organizations in disaster management. These include national institutes and organizations such as the National Institute of Preventive and Social Medicine (NIPSOM), Institute of Epidemiology, Disease Control and Research (IEDCR), Institute of Public Health (IPH), Institute of Public Health and Nutrition, Central Medical Store Depot (CMSD). The MoH&FW and EHA Programme of WHO conduct training sessions and workshops related to disaster management which are integrated with the HNPSP of the health sector.

---

**Bangladesh: Hazard profile and disaster preparedness**

18 | From vulnerability to preparedness
BRAC University (private) offers postgraduate courses in disaster management.

NIPSOM has conducted a chapter on Disaster Management and Response as part of the Public Health Administration and Hospital Management Course (MPH).

The Centre for Health and Population Research, formerly known as International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is a non-profit health research and training institute that develops and disseminates solutions for major health and population problems, with emphasis on cost-effective methods of prevention and management.

The EHA Programme provides technical assistance and expert advisory services to the national health authority for implementing programmes and activities that are aimed at protecting the health of the population at risk, both during and in the aftermath of an emergency in the country.

These include the following:

- Technical assistance for the development of appropriate public policies, plans, guidelines and procedures so that best health practices, norms and minimum humanitarian standards are followed during any emergency health relief operation;
- Providing emergency health intelligence services in times of emergencies through analysing vital health, nutritional and epidemiological data for real-time alert and response to epidemics;
- Lessons learnt in a humanitarian crisis are used to improve health emergency preparedness in future disaster situations;
- Capacity building for health needs assessment in emergencies and ensuring that the Government's emergency health relief operations are in line with the assessed need; and
- Harnessing scientific knowledge on risk factors for the health and nutrition problems of disasters in Bangladesh to promote informed decision-making and an evidence base for a disaster risk-reduction strategy.

In addition, WHO is a part of the UN Disaster Management Team (UNDMT) in the country and actively participates with other UN agencies during any disaster situation in the country. WHO also facilitates interagency communication and support including for launching UN Consolidated Appeals when any international assistance is requested by the national government. At the Government's request, WHO coordinates international humanitarian aid in the health sector during an international humanitarian relief operation.

**FUTURE PLANS OF WHO**

WHO plans to enhance country capacity of health personnel and volunteers at all levels in preparedness and response to disaster management. Revolving stocks of emergency essential medicines and supplies, laboratory reagents and kits, PPE and medical equipment will be maintained at all levels. The National Disaster Management System and capacity of Rapid Response Teams (RRTs) of the DGHS and the web-based surveillance system will be strengthened by providing technical and logistical support for response and recovery following natural disasters based on the priority needs of the country.
To do this, WHO will:

- Review strategic policy and planning.
- Develop mechanisms for better coordination in emergencies.
- Provide transport and organize a reserve fund for emergency response.
- Replenish emergency drugs and medical supplies.
- Establish field/mobile hospitals.
- Establish quarantine hospitals at airports, sea and land ports.
- Continue to strengthen the capacity of concerned officials and staff.
- Strengthen communicable disease surveillance for establishing an early warning system for impending outbreaks during and in the aftermath of a disaster.

**PRIORITY NEEDS**

Bangladesh is currently at high risk for large-scale disasters with a consequent impact on human health and survival. Substantial reduction of the public health risks of natural as well as human-induced disasters through enhanced capacity of the health sector to effectively manage emergencies are among the priority needs of the country. This can be done through:

- Development of an integrated emergency health management plan that covers the areas of risk assessment, health intelligence, capacity building, public awareness as well as effective emergency response capability;
- Use of “public health and hazard mapping” as an operational tool for health risk assessment of hazard-prone areas;
- Development of technical guidelines such as a tsunami/earthquake/building response plan and web-based surveillance in order to promote best health practices during humanitarian crisis situations;
- Setting up of an early warning system for alert and response to epidemic-prone diseases following a natural disaster in the country; and
- Capacity building for rapid health needs assessment following any emergency in order to ensure that the most vulnerable populations benefit from the humanitarian health relief programme.

**Challenges**

- Coordination between the WHO in-house Crisis Management Team (ICMT) and the Government/NGOs/UNCT/Disaster and Emergency Response (DER) should be strengthened for disaster mitigation in EPR.
- Coordination should be enhanced between the health sector and sectors such as agriculture, environment, etc.
- New resource persons need to be trained in health and other sectors to conduct further training.
- Programme managers need additional trained manpower to implement activities in a timely manner.
Various health services such as maternal and child health, family planning, prevention of communicable diseases, environmental sanitation, health education, need to be integrated in a single package.

Efforts of all health agencies need to be pooled to achieve maximum output.

Trained resource persons are scarce and those available are frequently transferred.

CONTACT DETAILS

WHO Representative
Dr Duangvadee Sungkhobol
GPO Box No. 250
Dhaka 1205
Bangladesh

Telephone: + 00-880-2-861-4653, 861-4654, 861-4655, 861-6097, 861-6098;
WR direct 861-2882
Fax: 00-880-2-861-3247
Email: sungkhobold@searo.who.int
Website: www.whoban.org

EHA Country Focal Point
Dr Kazi A.H.M. Akram
WHO Bangladesh
Dhaka

Phone: 00-880-2-861 2882/861 4653-5
Mobile : (00-880) 1199816016;
(00-880) 1713004166
Email: akramk@whoban.org

Emergency and Humanitarian Action
Country Report
Bhutan

HAZARD PROFILE

Natural disasters

Bhutan lies in one of the most seismically active zones of the world. Besides, the rugged mountain terrain, fragile geological conditions and extreme climate make Bhutan inherently vulnerable to natural disasters such as flash floods, landslides and forest fires. Owing to the presence of a considerable number of glaciers in the north of the country, Bhutan is also highly vulnerable to the occurrence of glacial lake outburst floods (GLOF) with disastrous impacts. There are 2674 glacial lakes in Bhutan, of which 562 are associated with glaciers, and 24 of them are “potentially dangerous”. For a country dissected by narrow valleys with steep slopes, natural dam formation is another danger for the areas downstream. In September 2003, landslides caused the formation of an artificial lake on Tsatichhu river. Such hazards will continue to prevail in Bhutan’s rivers placing hydropower plants, farmlands and human settlements at risk.

Forest fires are a major problem for Bhutan with 72.5% of the country under forest cover. A series of fires break out in different parts of Bhutan every year, causing great loss to the kingdom – socially, economically and environmentally. The forest fire in March 2006 destroyed thousands of acres of forest. Despite this, Bhutan is one of the few countries where forest cover is increasing.

Human-induced disasters

- **Road accidents**: Because of the rugged terrain, motor roads are narrow and pass through dense forests and vertical cliffs. As the traffic is increasing in recent years, road accidents are becoming more frequent year by year.
- **Fire**: People are responsible for 99% of forest fires in the country.
- **Other occupational hazards** include falls and animal attacks, injuries during cutting timber, hazards from working in mines and manufacturing industries.
- **Chemical hazards** from insecticides.

Factors contributing to vulnerability

- **Pressure on land and settlements**: People are dependent on agriculture and the increasing population requires more and more areas to be brought under cultivation, thereby denuding hill slopes.
- **Rapid urbanization**
- **Environmental degradation due to the increasing population**
- **Unsafe construction practices**
- **Insufficient enforcement of building byelaws**
- **Socioeconomic factors**: These force people to adopt livelihood patterns that tend to have
an adverse impact. People settle in hazard-prone areas such as steep slopes or flood-prone river beds.

- Lack of awareness of adequate incorporation of disaster risk-reduction concerns in the planning and development process
- Lack of preparedness for disasters.

**Humanitarian situation**

In December 2003, Bhutan successfully flushed out foreign militant groups who had been hiding in the jungles of south Bhutan. Besides the military preparations for this emergency, the Ministry of Health (MoH) had to prepare for dealing with the casualties. The operation was successful and well-trained emergency medical teams were put in place. These teams undergo regular training and are kept ready for other emergencies.

**Health hazards**

The threat of avian influenza is very real. Bhutan also had to prepare to deal with the threat of severe acute respiratory syndrome (SARS) during 2003 like the other countries in the Region, with WHO's technical guidance.

**EXISTING DISASTER MANAGEMENT SYSTEM**

**National policies and institutional framework**

There is no legislation/Act that specifically addresses disaster risk management. Article 8(6) of the draft Constitution of Bhutan states that it is the responsibility of every Bhutanese to provide help to victims of accidents and in times of natural calamities. Elementary provisions can be found in the Acts and Rules of various sectors and they now need to be put together in a comprehensive form so that there is no duplication and gaps are filled. Examples of sectoral provisions include the Environmental Acts and Policies, the Mines and Minerals Management Act, the Bhutan Water Policy, the Land Act and the Bhutan Building Rules, the Police Act. Further, the Royal Insurance Corporation of Bhutan provides a risk insurance facility as a mechanism to transfer risks related to small-scale disasters from fire, flood, earthquake, etc. However, a mechanism for large-scale disasters is needed and Bhutan is aware of it. It was mainly these concerns that led the Government to draw up the National Disaster Risk Management Framework in 2006 through a consultative process.

The Cabinet shall be the highest decision-making body and will lay down appropriate institutional, legislative and policy mechanisms addressing the entire gamut of issues relating to disaster prevention, mitigation, preparedness and response. Disaster preparedness and response systems will be built into all government, public, private, corporate sectors and civil societies' developmental plans. Some of the key initiatives include the National Report on Disaster Management, Thimphu Valley Earthquake Risk Management Plan, National Disaster Management Strategy, and National Capacity Development for Disaster Risk Reduction.

**Disaster management in the health sector**

The MoH has appointed focal units in the Ministry to deal with emergency health activities. With technical support from the WHO Regional Office, a general review of the situation took place in 2003 as a contribution to emergency preparedness in the
With WHO funding, a programme has been initiated on Emergency and Humanitarian Action (EHA) for the first time. Trauma units have been set up in at least three places with ICU, OT, laboratory and X-ray facilities. Blood banking facilities have also increased with identified live donors, as the storage facilities are not good.

The Department of Medical Services under the MoH instituted the Emergency Medical Services and developed an emergency medical response (EMR) policy to deal with outbreaks of diseases in times of disaster. Under the broad area of Emergency Medical Services, 244 Emergency Medical Technicians (EMTs) and about 94 hospital-based personnel were trained in trauma care from among various categories of health workers to back up the armed forces during the flushing-out operation of foreign militants in December 2003. During the process, various coordinators at different levels and a supreme Joint Task Force at the national level were formed, which still exist for activation at any time if the need arises.

In November 2003, the policy on EMR was further refined as a policy directive on Disaster Management and Internal Displacement. Efforts will be mainly directed towards addressing all types of natural and human-induced disasters. Hospitals along the highways are being scaled up in terms of facilities for trauma care.

**Disaster management in the non-health sector**

His Majesty the King is personally involved in the welfare and rehabilitation of affected people during times of disaster.

The Ministry of Home and Cultural Affairs (MoHCA) is the nodal agency at the national level as it has an established line of communication and coordination with the districts, subdistricts, village blocks and municipalities. Various sectors are involved in risk reduction and preventive activities, and relevant sectors contribute towards promoting disaster resilience.

A National Emergency Operations Centre (EOC) has been designed and established. EOCs will be instituted at all levels and will requisition resources, manpower and assistance from ministries/agencies in emergencies.

---

Bhutan: Hazard profile and disaster preparedness

EHA in the WHO South-East Asia Region
Financial arrangements

- His Majesty’s Relief Fund is an Emergency Fund to address relief, rehabilitation and reconstruction for isolated and small disasters.
- The National Disaster Mitigation, Preparedness Budget shall finance risk mitigation projects and schemes at local levels.
- The Emergency Fund for Major Disasters will finance response and relief operations in the event of major disasters. Financial modalities need to be worked out by the Department of Local Governance (DLG), MoHCA, Ministry of Finance, and the private and public sectors.
- Risk transfer mechanisms need to be worked out by the DLG, MoHCA, and Ministry of Finance with the Royal Insurance Corporation of Bhutan and other concerned sectors.

WORK OF WHO

Till the 1990s, emergency medical services had never been considered an important requirement for Bhutan. The requirement was strongly felt after some major road accidents occurred involving many passengers. In the meanwhile, Bhutan was also preparing to flush out foreign militants from the south of the country. WHO supported the endeavour by enhancing national capacity in terms of medical and laboratory services. Guidelines and training modules were also shared, together with experiences in other countries that had undergone such emergencies. As the capacity-building work progressed, WHO also helped in reviewing preparedness and guiding the Government further. The EMTs proved their worth during emergencies.

With specific regard to preparing for avian influenza (AI), laboratory capacity was strengthened through training and linkages developed between the Public Health Laboratory in Thimphu and the Referral Laboratory in Hong Kong. A clinical core group consisting of doctors, nurses and laboratory personnel was developed in the country and this group has already trained other groups in various districts to deal with AI. WHO also assisted the country in preparing a National Pandemic Preparedness Plan (PPP) and mobilizing resources. The country had already stockpiled some amount of oseltamivir and personal protective equipment (PPE). Assistance was provided for capacity development of the MoH and in pushing the health agenda in disaster preparedness through supporting the national workshop on disaster management in 2006. Training of health workers in emergency medical services continues every year. In 2006, the MoH was supported in developing a proposal on health response to climate change, which included dealing with emergencies from GLOF, new vector-borne diseases and vector-borne diseases encroaching into new areas.

Bhutan has undergone two rounds of Country Cooperation Strategy (CCS). Both these CCS documents do not spell out disasters as such but human resource development is considered one of the highest priorities. The current CCS is still in draft form and requires further consultations for its finalization. In this draft CCS, emergency preparedness is one of the seven priorities for WHO’s work in Bhutan from 2008 to 2013. Capacity building for a quick response to natural and human-induced disasters is one aspect of the support. As the health agenda should be reflected strongly in the national policy frameworks, technical guidance for the health sector is very important.
Further, support will also be provided to prepare guidelines, procedures, and conduct exercises and drills. One key area of support will be to institute International Health Regulations (IHR)-related systems.

**FUTURE PLANS OF WHO**

Future plans of WHO are mainly reflected in the CCS. The efforts of 2006, such as another national workshop on disaster management issues and training of health workers in new districts, will continue. National capacity building at the central level will also be supported. Efforts on IHR-related work will continue.

**PRIORITy NEEDS**

- Work with the MoH and relevant partners to develop specific programmes for implementation of the Framework.
- Mobilize resources for disaster management, EPR and capacity building from national and international sources.
- Continue building on the previous team in line with the Framework.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of resources</td>
<td>Plethora of existing initiatives</td>
</tr>
<tr>
<td>Low-to-moderate technical capacity</td>
<td>Sound civil administration system</td>
</tr>
<tr>
<td>Competing developmental priorities</td>
<td>Multisectoral approach</td>
</tr>
<tr>
<td>Multisectoral coordination</td>
<td></td>
</tr>
</tbody>
</table>

**Challenges**

- Lack of resources
- Low-to-moderate technical capacity
- Competing developmental priorities
- Multisectoral coordination

**Opportunities**

- Plethora of existing initiatives
- Sound civil administration system
- Multisectoral approach
http://www.searo.who.int/en/Section1257/Section2263/Section2301_12187.htm


National Disaster Management Framework, DMD, DLG, MoHCA, Royal Government of Bhutan

CONTACT DETAILS

WHO Representative
Dr Ei Kubota
PO Box 175
Thimphu
Bhutan

Telephone: 00-975-2-322-864, 324-073, 324-781, WR direct 322-940
Fax: 00-975-2-323-319
Email: wrbhu@searo.who.int
Website: www.whobhutan.org

EHA Country Focal Point
Mr Norbhu Wangchuk
WHO Bhutan
Thimphu

Phone: 00-975-2-322864
Fax: 00-975-2-323319
Email: norbhu@searo.who.int

From vulnerability to preparedness
Emergency and Humanitarian Action
Country Report
DPR Korea

HAZARD PROFILE

Natural disasters
The Democratic People’s Republic of Korea (DPR Korea) is a peninsular country in which mountains and uplands cover nearly 85% of the total area, leaving barely 15% for cultivable plains and lowlands. In recent years, the country has been affected by unprecedented natural disasters, and is exposed to frequent occurrence of floods, landslides, tidal waves, typhoons, droughts, waves/surges and other types of natural disasters such as wind storms.¹

Human-induced disasters
A large explosion occurred at Ryongchon city, North Phyongan Province on 22 April 2004, during shunting operations at the railway station. Two train wagons carrying ammonium nitrate came into contact with a wagon containing fuel oil. This resulted in a massive explosion creating a large crater and levelling everything within a 500 m radius. The Flood Disaster Rehabilitation Committee (FDRC) of Ryongchon County confirmed that the explosion injured approximately 1300 people, 370 of whom were hospitalized. One hundred fifty-four bodies were recovered, including 76 children. WHO undertook a health needs assessment in Sinuiju City to identify how best the international community could assist the Ministry of Public Health (MoPH).

The explosion also caused major damage to housing and infrastructure, including schools and medical facilities. An estimated 1850 families (approximately 8000 people) became homeless due to the destruction of 1850 houses. This represents approximately 40% of the area of the township. Public buildings suffered major damage; 12 were completely destroyed and 10 partially destroyed. The city’s water supply, electricity and telephone systems were severely disrupted.

The national authorities and the National Red Cross responded effectively to the disaster. The Ministry of Public Health (MoPH) immediately sent medical supplies from Pyongyang to Ryongchon County. Medicines and medical supplies from UNICEF, WHO and the International Federation of Red Cross and Red Crescent Societies (IFRC) available in-country were reallocated from existing programmes and delivered to Ryongchon County.

Health hazards
After years of progress in the field of health in the 1970s, the health status of the population started to decline in the 1990s. Many of the health indicators deteriorated and some of the morbidity and mortality figures increased by two- to three-fold. Drug supplies are limited and doctors use traditional medicines to treat illnesses. The economic downturn has led to the erosion of DPR Korea’s extensive health-care infrastructure. There are serious shortages of essential drugs and vaccines as well as essential medical diagnostic equipment and surgical supplies.

Measles: Since 1992, no cases of measles had occurred in the country. However, in February 2007, the MoPH informed WHO and UNICEF that there was a measles
outbreak in the country. It started in November 2006 from a small county in the northern border with China and spread all over the country. The age group affected ranged from infants to those about 45 years old, with 40% of cases among 11–19-year-olds. A total of 3500 cases was reported, with four deaths. The MoPH requested WHO and UNICEF for support to control the outbreak.

- **Diarrhoeal diseases**, acute respiratory infections and other childhood diseases together with malnutrition are the main causes of childhood morbidity and mortality. More than one third of children aged six years and below suffer from chronic malnutrition, and about one eighth are severely stunted. However, there was a marked improvement in children’s nutritional indicators between 2002 and 2004 (National Nutrition Assessment of 2002 and 2004).

- **Malaria**: Vivax malaria re-emerged in the Korean peninsula in 1998. The number of malaria cases reached epidemic proportions in 2001 with 300 000 reported cases. WHO’s assistance has supported the dramatic 95% decrease in the number of malaria cases from 185 420 cases in 2002 to 9300 cases in 2006.

- **Tuberculosis**: Following economic decline and natural disasters in the 1990s, a sharp increase was reported in the incidence of tuberculosis. The Directly Observed Treatment, Short-course (DOTS) treatment network was introduced at the end of 1997 with WHO support and expanded in five phases from 1998 to the whole country; the cure rate is about 85%.

- **Severe acute respiratory syndrome (SARS)** and the avian influenza pandemics are the most recent global health challenges. There was an outbreak of H1N1 avian influenza in two poultry farms at the end of 2004 and early 2005 (winter season). The MoPH in collaboration with WHO/FAO and in partnership with the Ministry of Agriculture managed to control the outbreak by April 2005. The Government has been vigilant in controlling for potential future outbreaks.

**Humanitarian situation**

Since its independence, DPR Korea has experienced several stages of development including post-war reconstruction and industrialization. The country achieved a number of successes including free education and 100% literacy, free medical services and relatively long life expectancy. Remarkable economic growth was achieved. Health indicators were one of the best in the Region till the early 1990s, when they fell following dissolution of the former Soviet Union, natural disasters, years of isolation and lack of investment. Over almost a decade, the humanitarian assistance to DPR Korea achieved substantial progress towards meeting some of the basic needs of the population. Chronic malnutrition was almost halved between 1998 (62%) and 2004 (37%).

In 2005, the Government decided to stop the humanitarian assistance and move towards development-oriented collaborative programmes. This made it difficult for UN agencies to raise the necessary funds to sustain the gains and respond to immediate needs. The situation was further complicated by a complex regional and international geopolitical climate. These constituted severe challenges to the economic growth of the country and the normal livelihood of the people.
National policies, guidelines and legal framework for disaster management

Before 1995, when the country had high health and economic indicators, the health sector did not have any disaster management policies/guidelines. It had sector-wise health programmes and guidelines. However, in 1995, the Government in the Cabinet instituted a non-standing committee for addressing and managing health-related disaster management involving several ministries and social institutions, named the Flood Disaster Rehabilitation Committee (FDRC). The FDRC also worked in good collaboration with the UN and international NGOs operational in the country after the UN Appeal by the Government.

With the improvement of the country’s overall economic, agricultural and health status, the Government decided to discontinue the humanitarian assistance from the international community at the end of 2005, and appealed for more development-oriented assistance. The FDRC has stopped its work; however, the same mechanism of coordinating general international support through international and UN agencies still exists and is functional.

Environmental concerns are protected through the Environment Protection Law and the health of workers by the Socialist Labour Law.

Disaster management in the health sector

Historically, DPR Korea has an extensive and comprehensive health system infrastructure. It is geographically divided into nine provinces and one municipality of the capital, 210 counties, and is further subdivided into smaller administrative units, as Ri (rural areas) and Dong (urban areas). Under the management of the MoPH, DPR Korea has a vast, equitably distributed network of more than 800 general and specialized hospitals at the central, provincial and county levels, about 1000 hospitals and 6500 polyclinics at Ri and Dong, with an estimated staff of around 300 000. At the lowest level, a household doctor (section or family doctor) provides curative, promotive, rehabilitative and preventive health care. All health facilities in DPR Korea are State owned and the State is responsible for the health of the people. The fundamental principles of the national health policy include universal and free medical care services, maintaining preventive and promotive health services, and the development of Juche-oriented medical science and technology. Primary health care (PHC) is organized around the section doctor (household doctor) system. The system helps to improve the quality of care at the household level. The eight essential elements of PHC are implemented through this system. The PHC health worker is a doctor who is qualified to deliver health services to the households under his/her charge. This system is supported by a referral system to higher levels of care.

There is no specific national disaster preparedness/management plan so far in the country, and it would be helpful if WHO’s technical inputs are provided for the MoPH to formulate one.

WORK OF WHO

DPR Korea has been a member of WHO since 1973, but the collaborative programme was for many years under national execution. In 1997, a WHO Emergency and Humanitarian Action (EHA) office was established in DPR Korea as a result of the deteriorating humanitarian situation.
The WHO Country Office in DPR Korea was established in Pyongyang in November 2001 with a designated WHO Representative. In March 2003, an update of the Country Cooperation Strategy (CCS) was completed. There has been increased coordination and interaction with the MoPH, UN Agencies and other development partners since the establishment of the Country Office.

WHO has participated in the annual UN Consolidated Appeals (CAPs) for DPR Korea. Resources through the UN Consolidated Appeal and other funding mechanisms have been instrumental in addressing major public health problems. This shows that, in countries with complex emergencies, WHO has the ability to mobilize resources. Experiences from recent years also confirm that it is possible to effectively implement health programmes in DPR Korea in spite of the institutional and political constraints. The emergency programmes have also provided an entry point for a broader assessment of the health sector in DPR Korea. In principle, the WHO regular budget has been used for long- and medium-term health goals, whereas funds from the UN Appeal for emergency and humanitarian action have been used for short-term emergency health problems. Following the Government’s decision to go for development-oriented support, WHO has been positively working on the same lines, utilizing the emergency-based resources from donors for medium- and long-term development assistance.

WHO in cooperation with the MoPH is currently focusing on strengthening the health infrastructure through providing county and Ri hospital kits in collaboration with donor communities including the European Commission Humanitarian Aid (ECHO).

The following health areas were agreed upon with the MoPH as the national health priorities for the Country Cooperation Strategy (2004–08).

- Control and prevention of communicable diseases (malaria, tuberculosis, HIV/AIDS) including strengthening of the surveillance system and public health laboratories;
- Immunization and vaccines: During the recent measles outbreak, WHO and UNICEF provided measles vaccine, syringes, needles, safety boxes and vitamin A for the National Immunization Campaign in two phases (15 March and 15 April 2007). Technical assistance on outbreak investigation, laboratory diagnosis and treatment is also being provided.
- Promoting evidence-based health policies and health care (clinical guidelines, rational drug use, traditional medicine);
- Strengthening basic health services close to the community;
- Updating technical skills of health personnel;
- Improving blood safety;
- Strengthening technical and research capacity in public health and epidemiology;
- Health systems development;
- Tobacco control;
- Increasing the capacity of the MoPH in emergency preparedness and response, and working in a partnership environment.
WHO and MoPH plans for 2008–09
- To strengthen health staff capacity for health-related disaster management
- To improve emergency health information, communication and response
- To support emergency management such as supply and logistics, and provide short-term consultants
- To provide technical assistance for programme planning and management.

FUTURE PLANS OF WHO

WHO takes active part in the interagency collaboration with other UN agencies, NGOs, donors and embassies in Pyongyang. Good cooperation between agencies has contributed to effective sharing of information and adoption of common strategies for the work of international organizations in the country.

PRIORITY NEEDS

- Strengthen health infrastructure according to long-term based development assistance by increasing WHO’s technical inputs in the health sector through training, both in-country and abroad, and assisting the health facilities at the community and referral level by upgrading their technical and physical capacities.
- Strengthen human resources within the MoPH and other health-related institutions for macro/micro health planning, public health management and health information systems consolidation.
- Strengthen health education through pre-service medical university education as well as in-service reorientation programmes for doctors and other health staff.
- Strengthen partnerships with global and regional health-related networks.
## CONTACT DETAILS

### WHO Representative
Dr Tejbir S. Walia  
Munsudong  
Pyongyang  
DPR Korea

Telephone: 00-850-2-381-7913, 381-7914, WR direct 381-7920  
Fax: 00-850-2-381-7916 GPN fax  
23602, 23603  
Email: waliat@searo.who.int

### EHA Country Focal Point
Dr Shafik Nagi  
WHO DPR Korea  
Pyongyang

Phone: 00-850-2-381-7913  
Fax: 00-850-2-381-7916  
Email: shafikn@searo.who.int

---

1. [http://www.searo.who.int/en/Section313/Section1518_6785.htm](http://www.searo.who.int/en/Section313/Section1518_6785.htm)  
2. [http://www.dprk.searo.who.int/LinkFiles/WHO_Collaborating_Centres_CCSDPRK.pdf](http://www.dprk.searo.who.int/LinkFiles/WHO_Collaborating_Centres_CCSDPRK.pdf)  
3. [http://www.dprk.searo.who.int/EN/Section11.htm](http://www.dprk.searo.who.int/EN/Section11.htm)  
4. [http://www.dprk.searo.who.int/EN/Section2_12.htm](http://www.dprk.searo.who.int/EN/Section2_12.htm)
Emergency and Humanitarian Action
Country Report
India is among the world's most disaster-prone areas. It is vulnerable to wind storms spawned in the Bay of Bengal and the Arabian Sea, earthquakes caused by active crustal movement in the Himalayan mountains, floods brought by monsoons, and droughts in the country's arid and semi-arid areas. India has also become much more vulnerable to tsunamis since the 2004 Indian Ocean tsunami.

Almost 57% of the land is vulnerable to earthquake (high seismic zones III–V), 68% to drought, 8% to cyclones and 12% to floods.

Natural disasters

Earthquake: Of the earthquake-prone areas, 12% is prone to very severe earthquakes, 18% to severe earthquakes and 25% to damageable earthquakes. The biggest quakes occur in the Andaman and Nicobar Islands, Kutch, Himachal and the North-East. The Himalayan regions are particularly prone to earthquakes.

Flood and drought: About 30 million people are affected annually. Floods in the Indo–Gangetic–Brahmaputra plains are an annual feature. On an average, a few hundred lives are lost, millions are rendered homeless and several hectares of crops are damaged every year.

About 50 million people are affected annually by drought. Of approximately 90 million hectares of rain-fed areas, about 40 million hectares are prone to scanty or no rain. Rainfall is poor in nine meteorological subdivisions.

Cyclone: About 8% of the land is vulnerable to cyclones of which coastal areas experience two or three tropical cyclones of varying intensity each year. Cyclonic activities on the east coast are more severe than on the west coast.

Landslide: Landslides occur in the hilly regions such as the Himalayas, North-East India, the Nilgiris, and Eastern and Western Ghats.

### Natural disasters in the recent past

<table>
<thead>
<tr>
<th>Disaster</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood: 2004, 2005</td>
<td>Assam, Bihar, West Bengal, Gujarat, Orissa, Uttaranchal, Tamil Nadu, Maharashtra</td>
</tr>
<tr>
<td>Flood: 2005</td>
<td>Maharashtra, Kashmir, Shimla, North-East region</td>
</tr>
<tr>
<td>Landslide: 2004</td>
<td>Kashmir, Shimla, North-East region</td>
</tr>
<tr>
<td>Tsunami: 2004</td>
<td>South India</td>
</tr>
<tr>
<td>Heat wave: 2004</td>
<td>Delhi, Haryana, UP, Punjab</td>
</tr>
</tbody>
</table>
Human-induced disasters
- Chemical spillage/pollution, industrial explosions, fires, mine disasters, terrorism
- Train and road accidents
- Civil strife and insurgency

Warning systems: Forecasting and warning systems have been put in place for various natural disasters. For earthquake, the India Meteorological Department (IMD) operates a network of 36 seismic monitoring stations. The national network of seismological operations is being upgraded and modernized.

The IMD is also responsible for cyclone tracking and warning. There is a special Disaster Warning System (DWS) for dissemination in the local languages of a cyclone warning through INSAT to designated addresses at isolated places.

The Central Water Commission (CWC) has a flood forecasting system that covers 62 major rivers in 13 states, and has 157 stations for transmission of flood warnings on a real-time basis. There are 55 hydro-meteorological stations in the 62 river basins. A VHF/HF wireless communication system is used for data collection with microcomputers at the forecasting centres.

The IMD has divided the entire country into 35 meteorological subdivisions and issues weekly bulletins indicating normal, excess and deficient rainfall. The National Crop Weather Watch Group monitors drought conditions by means of remote sensing techniques based on the vegetative and moisture index status.

EXISTING DISASTER MANAGEMENT STRUCTURE

National policies and legal framework

Disaster Management Act, 2005
- Landmark legislation for disaster management (DM)
- Emphasis on mitigation aspects for the first time
- Constitution of apex body on DM for planning and coordination of all aspects of DM
- Facility for accepting foreign funding for capacity building
- Provision for penalties for offences related to DM
- Has brought in general awareness among people and aroused their interest in this important facet of DM.

A Disaster Management Policy has been drafted and is awaiting approval from stakeholders.

Disaster management in the health sector

The Emergency Medical Relief Division of the Directorate General of Health Services in the Ministry of Health and Family Welfare (MoHFW) is the technical unit meant for the management of crisis situations. The Division is headed by the Director, Emergency Medical Services and Relief (EMR). In crisis situations, the Director reports/receives instructions directly from the technical chief (Director General of Health Services [DGHS]) and Administrative Head of the Ministry (Secretary, Health and FW). The Secretary, Health and FW has empowered the Director, EMR to represent the MoHFW in different Crisis Management Groups at the national level. The emergency health sector focal points at national, state and district levels are an integral part of the crisis management groups at the respective levels.
The National Disaster Management Authority (NDMA) is the apex body that lays down policies and guidelines and also plays a nodal role in initiating institutional measures for prevention, mitigation and preparedness. The NDMA ensures coordination and implementation of a synergized disaster response.

Disaster management in the non-health sector

The National Disaster Management Authority (NDMA) is the apex body that lays down policies and guidelines and also plays a nodal role in initiating institutional measures for prevention, mitigation and preparedness. The NDMA ensures coordination and implementation of a synergized disaster response.

Constitution of the NDMA: The NDMA comprises
- Chairperson – Prime Minister, Ex-officio
- Vice Chairperson – status of Union Cabinet Minister
- Members – Eight, status of Union Ministers of State
Cabinet Committee on Management of Natural Calamities: It deliberates on the institutional and legislative measures needed for an effective and long-term strategy to deal with major natural calamities. It is the highest political body chaired by the PM.

- Members are the Union Cabinet Ministers of Home, Finance, Agriculture, Power, Water Resources, Railways, Environment and Forests, Rural Development, Health and Family Welfare; Deputy Chairman Planning Commission is a special invitee.
- The Vice Chairman, NDMA recommends the special invitee.

Cabinet Committee on Security: This Committee takes policy decisions on matters of national security, including internal security. The Chairman is the Prime Minister and the Union Home Minister, Union Finance Minster, Union External Affairs Minister are members. The Chief of Staff Committee is a special invitee.

High-level Cabinet Committee: This Committee examines recommendations of the Central Team and the financial allocations to be released by the Finance Ministry. The present Chairman is the Union Agriculture Minister, and the Union Home Minister and Union Finance Minister are members. Other members include the Deputy Chairman, Planning Commission and the Vice Chairman, NDMA (proposed).

National Crisis Management Committee (NCMC): The NCMC implements the decisions of the Cabinet Committees, monitors progress, and generates and/or diverts resources. The Chairman is the Cabinet Secretary and all Secretaries of Union Ministries/Departments are members.

Central Ministries/Departments
- Disaster Management is a multidisciplinary process.
- All Ministries/Departments have a key role in assisting the NDMA.
- Some Ministries are Nodal Ministries for specific disasters, such as the MoHA, Ministry of Environment and Forests (MoEF), Agriculture and Health.
Each Ministry/Department makes its Disaster Management Plan.
Each Ministry/Department is responsible for disaster response.

<table>
<thead>
<tr>
<th>CRISIS</th>
<th>NODAL MINISTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural disaster (except drought) and civil strife</td>
<td>Ministry of Home Affairs</td>
</tr>
<tr>
<td>Drought</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>Biological disaster</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Chemical disaster</td>
<td>Ministry of Environment</td>
</tr>
<tr>
<td>Nuclear accidents and leakages</td>
<td>Department of Atomic Energy</td>
</tr>
<tr>
<td>Railway accidents</td>
<td>Ministry of Railways</td>
</tr>
<tr>
<td>Air accidents</td>
<td>Ministry of Civil Aviation</td>
</tr>
</tbody>
</table>

National Executive Committee (NEC): This is the Executive Committee of the NDMA and is mandated to assist in its functions. It also ensures compliance with the directions issued by the Central Government and is responsible for preparing a national plan and getting it approved by the NDMA. The NEC makes available to the NDMA such human and material resources as required by it for handling a threatened disaster, emergency response, or rescue and relief.

National Institute of Disaster Management: The NIDM is responsible for capacity building, training, research, documentation and development of a national-level information base. It functions within the broad policies and guidelines laid down by the NDMA. It assists in imparting training to trainers, DM officials, NGOs, etc. and will also synthesize research activities in future. The NIDM will be made a Centre of Excellence at the national and international level.

National Disaster Response Force (NDRF): The NDRF consists of 8 battalions, with 144 self-sustaining teams that render an effective response to any threatening disaster situation or disaster. Four battalions are for natural disasters and four for nuclear, biological and chemical (NBC) disasters. The NDRF Battalions will impart basic training to the State Disaster Response Force in their respective locations.

National Disaster Mitigation Resource Centre (NDMRC) and National Disaster Response Force (NDRF): The NDMRC is co-located with the NDRF battalions. These organizations serve as repositories for relief stores for 72–96 hours for 25,000 people.

State level: The State Disaster Management Authority has the Chief Minister as Chairperson, a Vice Chairperson and seven Members, with the Chairperson of the State Executive Committee as an Ex-officio Member.

District level: There are DDMA in each State. The Chairperson is the Collector, the Co-Chairperson is an elected representative. The CEO of the District Authority, SP, CMO and two others are Members.

Local level: Local authorities include the Village Panchayat, Development Block and Municipal Boards/Corporations. They ensure that resources related to DM are so placed as to be readily available for use in case of disaster, and construction projects under it conform to laid-down standards and specifications.
Arrangement for financial relief

Schemes for financing expenditure on relief and rehabilitation following natural calamities are governed by the recommendations of Finance Commissions appointed by the Government of India (GoI) after every five years.

- Each state has a corpus of funds called the Calamity Relief Fund (CRF).
- Funds are administered by a State-level Committee, headed by the Chief Secretary of the State Government.
- The size of the corpus is determined according to the vulnerability of the state to different natural calamities and the magnitude of expenditure normally incurred by the state on relief operations.
- The corpus is built by annual contributions of the Union Government and the concerned state governments in the ratio of 3:1.
- States are free to draw upon this corpus in the event of any natural calamity.

If intervention at the national level is warranted, the Union Government can supplement the financial resources needed for relief operations through the National Fund for Calamity Relief.

WORK OF WHO

WHO provides technical support for the following:

- Preparation of the National Health Sector Disaster Contingency Plan. The Draft plan is ready and awaiting approval.
- A Draft Training module on mass casualty management is awaiting approval.
- Training is being provided on Hospital Preparedness and Emergency Response (HOPE).
- Training is also being provided on the Multi-User System for Emergency Response (MUSTER).
- The Emergency Control Room of the GoI is being strengthened.

Among other major activities, WHO liaises with the MoHFW for their emergency management programmes. It provides technical support for the development of a model state-level Health Sector Management Plan. Technical support is also being provided to strengthen capacity for emergency preparedness and response.

FUTURE PLANS OF WHO

WHO will provide support to the Government in the following areas:

- Strengthen health sector emergency preparedness
- Strengthen intersectoral action for risk and vulnerability reduction within the framework of the International Strategy on Disaster Reduction, and respond to the health needs (including nutrition as well as water and sanitation) in emergencies and crises.
- Support a global alert and response system for public health emergencies.
- Introduce a National Health Resource Inventory (NHRI) at the national level, to develop and map a comprehensive database at the state and district levels as well.
- Supplement the existing efforts by the Government and other UN agencies in developing health-based resource portals.
CONTACT DETAILS

WHO Representative
Dr S. Habayeb
Rooms 531–537, ‘A’ Wing
Nirman Bhawan
Maulana Azad Road
New Delhi 110011

Telephone: 00-91-11-2306-1955, 2306-1922, 2306-1993
Fax: 00-91-11 2306-2450, 2306-1505
Email: habayebsearo.who.int

EHA Country Focal Point
Mr A.K. Sengupta
WHO India
New Delhi

Phone: 00-91-11-2306-1955/2306-1993
Mobile: 00-91-9818716586
Email: senguptaak@searo.who.int

1 ADRC Natural Disasters data book 2005
2 http://www.searo.who.int/en/Section23/Section1108/Section1418_5777.htm
Emergency and Humanitarian Action
Country Report
Indonesia

HAZARD PROFILE

Due to its unique geography and geology, Indonesia is prone to natural disasters such as earthquakes, tsunamis, floods, landslides, cyclones and volcanic eruptions. With a large and dense population, human-induced disasters such as fires, forest fires, pollution and environmental degradation also pose large threats.

### Types of emergencies and disasters

**Natural**
- Volcano
- Earthquake
- Flood
- Landslide
- Hurricane

**Human-induced**
- Disease outbreak
- Storm
- Drought
- Tsunami
- Conflict
- Terrorism
- Environmental pollution
- Industrial accident
- Transportation accident

### Natural disasters

**Earthquakes and tsunamis**: About five earthquakes occur daily in Indonesia. Indonesia is located at the intersection of three crustal plates: the Eurasia Plate, the Ancient Australia–Indian Continent and the Pacific Ocean Floor. As a result, the country has to contend with frequent and powerful seismic activity. When earthquakes occur at sea, there is the added danger of a tsunami. The devastating tsunami of 26 December 2004 was caused by an earthquake with a magnitude of 9.0 on the Richter scale – the fourth-largest earthquake in the world since 1900.

**Floods and landslides**: With a tropical climate, Indonesia is often subjected to massive amounts of rain within a short time. There are over 5000 rivers throughout Indonesia, of which at least 30% pass through major population centres. The western areas of Indonesia are particularly susceptible to floods, due to heavy rainfall and shallow rivers. Although natural ecosystems serve as a buffer, in areas of heavy logging, the effects are exacerbated. Along with floods, heavy rains frequently cause deadly landslides due to the porous volcanic soil that is so common throughout many parts of Indonesia.

**Drought and wildfires**: A prolonged dry season and extreme heat wreaks havoc on crops. Fire is particularly common in the dry eastern provinces such as East and West Nusa Tenggara. Brush and/or forest fires are also common in times of drought. While many indigenous groups have practised “swidden” agriculture – in which cropland is cleared by setting fire to small areas of felled forest – in a sustainable manner for countless generations, more recent patterns of logging and grazing have left large areas of Indonesia particularly susceptible to fire. Widespread fires in 1997 blanketed South-East Asia in an incredible smog for several months, causing an estimated $1.3 billion in damage to the region.

**Volcanic eruptions**: At least 128 active volcanoes have been identified, among more than 500 young volcanoes. This represents 15% of all the active volcanoes in the world. The eruption of Krakatoa in 1883 – which killed tens of thousands of people, destroyed
the island and affected global climate for several years – remains one of the most cataclysmic natural disasters in recorded history. Eruptions on a much smaller scale – yet also deadly – occur with relative frequency in this volcanic hot spot. Mount Merapi in Java, perhaps the most active volcano in Indonesia in recent years, has had over a dozen known deadly eruptions.

**Human-induced disasters**

- Ethnic and religious tensions often result in social conflict. Separatist movements in Aceh and Irian Jaya, ongoing Christian–Muslim conflict in the Moluccas, and recent terrorist attacks by radical Islamic fundamentalist groups have taken a devastating human toll.
- Logging, mining and the creation of large plantations have reduced the natural environment’s capacity to withstand the challenges posed by nature.
- Industry-related accidents are frequent due to the high density of industries.
- Biochemical and nuclear-related toxicities are common emergencies.
- Road traffic accidents alone kill an average of 50 000 Indonesians every year and the figures are rising. One in eight Indonesians owns at least one motorcycle or a car. Due to poor safety standards, one major road, rail, sea or air traffic accident occurs almost every month in Indonesia.

**Factors affecting vulnerability**

- Environmental degradation from human activities compounds the many natural risks posed by Indonesia’s geography.
- High population density leads to overcrowding in urban areas which, coupled with poor building practices, leads to a large number of casualties in the event of a disaster such as an earthquake.
- Large populations often live in disaster-prone areas, due to such factors as the location of fertile soil in floodplains or in cities with compromised natural ecosystems.

**Recent disasters in Indonesia (January to March 2007)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Accident/Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Jan 07</td>
<td>Accident: Plane</td>
<td>Sulawesi Region</td>
</tr>
<tr>
<td>8 Jan 07</td>
<td>Landslide</td>
<td>Padang Pariaman, West Sumatra Province</td>
</tr>
<tr>
<td>12 Jan 07</td>
<td>Floods and landslide</td>
<td>Sangihe, North Sulawesi Province</td>
</tr>
<tr>
<td>15 Jan 07</td>
<td>Train accident</td>
<td>Banyumas, Central Java Province</td>
</tr>
<tr>
<td>17 Jan 07</td>
<td>Tornado</td>
<td>South-East Sulawesi Province</td>
</tr>
<tr>
<td>21 Jan 07</td>
<td>Earthquake</td>
<td>North Sulawesi, North Maluku Region</td>
</tr>
<tr>
<td>22 Jan 07</td>
<td>Riot</td>
<td>Poso, Central Sulawesi District</td>
</tr>
<tr>
<td>2 Feb 07</td>
<td>Flood</td>
<td>Jakarta, Banten, West Java Province</td>
</tr>
<tr>
<td>19 Feb 07</td>
<td>Landslide</td>
<td>Magelang District, Central Java Province</td>
</tr>
<tr>
<td>20 Feb 07</td>
<td>Storm</td>
<td>Yogyakarta City, Yogyakarta Province</td>
</tr>
<tr>
<td>21 Feb 07</td>
<td>Accident: Hard landing</td>
<td>Juanda International Airport, Surabaya City, East Java Province</td>
</tr>
<tr>
<td>21 Feb 07</td>
<td>Accident: ferry</td>
<td>Seribu Island, Jakarta Province</td>
</tr>
<tr>
<td>3 Mar 07</td>
<td>Flood – Landslide</td>
<td>Manggarai, East Nusa Tenggara Province</td>
</tr>
<tr>
<td>6 Mar 07</td>
<td>Earthquake</td>
<td>Batusangkur District, West Sumatra</td>
</tr>
<tr>
<td>7 Mar 07</td>
<td>Accident: Plane crash</td>
<td>Yogyakarta Province</td>
</tr>
<tr>
<td>14 Mar 07</td>
<td>Flood</td>
<td>Cipinang, Jakarta</td>
</tr>
<tr>
<td>14 Mar 07</td>
<td>Flash flood</td>
<td>Belu District, East Nusa Tenggara</td>
</tr>
<tr>
<td>15 Mar 07</td>
<td>Earthquake</td>
<td>Labuha, Maluku</td>
</tr>
</tbody>
</table>
Health hazards

Both conflict-related complex emergencies and natural disasters such as flooding and drought may increase the risk of infectious disease epidemics. In the wake of the tsunami the Indonesian people have been rendered vulnerable to a series of large-scale epidemic threats. The primary ones among these are listed below.

- HIV/AIDS
- Diarrhoea and gastroenteritis
- Typhoid and paratyphoid fever
- Dengue fever and dengue haemorrhagic fever
- Tuberculosis
- Acute lower respiratory tract infections
- Dysentery
- Cholera
- Malaria
- Measles
- Meningitis
- Pertussis
- Poliomyelitis
- Avian flu
- Plague
- Chikungunya
- Leptospirosis

National policy on disaster management

Indonesia has pursued a national strategy for disaster management, though many aspects have not been fully addressed by the present policy framework. A coordinated national disaster strategy was first developed in 1966 when the Advisory Board for Natural Disaster Management was established.

A landmark Disaster Management Law no. 24/2007 was enacted on 29 March 2007, to build a new disaster management system in Indonesia. The new law posts protection to be a part of people’s basic rights and designates the government to be the duty bearer. This integrated and comprehensive legislative framework expresses the State’s constitutional duty to render protection from disaster risks. It provides for disaster management to be an integrated part of development and governance. This is to be accomplished through reducing risks mostly during the time when there is no disaster while, at all times, the system is charged to be better prepared to respond to, and recover from, the impacts of disasters.

To that end, the law calls for the establishment of disaster management agencies at different levels to be equipped with a robust mandate, authorities and resources. At the time when a state of calamity is declared, these agencies are to be provided with “special access” to wide-ranging special authorities including mobilization of response assets, influencing customs, immigration and quarantine and, when necessary, exerting “command” over sectors and locales. Coupled with the National Action Plan on Disaster Risk Reduction (NAP-DRR) launched on 24 February 2007, the new law embodies political statement and a framework for the implementation of the Hyogo Framework of Action (HFA) that was adopted by the international community to significantly reduce the impact of disasters by 2015. Disaster risk reduction (DRR) has now been adopted as one among eight national priorities for the fiscal year 2008.

The Government is putting together interagency–intersectoral mechanisms to formulate ancillary regulations consisting of two presidential regulations and six government
regulations, including one on international cooperation. The Government is determined to complete this in six months.

Each type of disaster is covered in part by measures in sector-specific laws, such as:
- Water Resources Management: Act No. 11, 1974
- Social Welfare: Act No. 6, 1974
- Epidemics: Act No. 4, 1984
- Conservation of Biological Natural Resources and Ecosystems: Act No. 5, 1990
- Health: Act No. 23, 1992
- Spatial Planning: Act No. 24, 1992
- Environmental Management: Act No. 23, 1997
- Forestry: Act No. 41, 1999

The National Policy on Disaster Management developed by the Government of the Republic of Indonesia as part of the 6th National Development Plan contains specific objectives. A major focus is to strengthen public awareness and preparedness of the local government. The policy of disaster management is shifting from relief to a more comprehensive approach that includes prevention and mitigation as well.

Under the National Plan’s Directives, widespread training sessions and workshops have been held at all levels throughout the country. Meanwhile, the SIPBI, or Indonesian Disaster Management Information System, has been improved to enhance communication and decision-making. A major advancement under way is the development of the Forest Fires Disaster Management Information System (FFDMIS), since forest fires were not included under the SIPBI. Risk-mapping and risk-assessment projects are also being adopted. The RADIUS project (Risk Assessment Tools for Diagnostics of Urban Areas against Seismic Disaster) has developed earthquake scenarios for the major city of Bandung.

National Action Plan for Disaster Reduction 2006–2010

The National Action Plan for Disaster Risk Reduction 2006–2010 is formulated as a commitment of the Government of Indonesia to UN Resolution No. 63/1999, which was followed by the Hyogo Framework for Action and the Beijing Action Plan. The document comprises a joint undertaking by the National Development Planning Agency (Bappenas) and the National Coordination Body for Disaster Management (Bakornas PB) which is supported by the United Nations Development Programme (UNDP). The NAP-DRR 2006–2010 is expected to serve as a solid reference for all actors dealing with disaster in Indonesia.

The Action Plan will later be detailed into annual plans that will reflect priority disaster management needs and related government policies. It is expected that the plan will be regularly updated to stay abreast of changes in the disaster situation in Indonesia and the wider international context.

Disaster management in the health sector

In 2006, with the support of WHO, the Ministry of Health (MoH) launched its first Emergency Preparedness and Response (EPR) Programme. The programme road map adopts three strategic approaches to reach its goal.
Setting up and strengthening nine Regional Crisis Centres
Developing and modifying a standard operating procedure for health crises
Establishing and developing an international training centre on DRR for capacity building.

The Head of the Crisis Centre reports through the Secretary General to the Minister for Health.

The MoH, in close collaboration with WHO, is now in the process of establishing emergency special units in each of its directorates, training staff and establishing operation rooms. These in turn link with the central command post established in the MoH and with operational units in the nine Regional Crisis Centres.

Disaster management in the non-health sector

National Disaster Management Coordinating Board: Bakornas PBP

National coordinated arrangements for natural disasters were initiated in 1966 by the establishment of an Advisory Board for Natural Disaster Management; its activities were focused on emergency relief for disaster victims. In 1979, the National Natural Disaster Management Coordinating Board known as Bakornas PBA was established to replace the Advisory Board for Natural Disaster Management; it was directly responsible to the President and chaired by the Coordinating Minister for People Welfare. The 1979 Decree also included the establishment of a similar arrangement at the provincial as well as district levels. Presidential Decree No. 43/1990 was issued as an amendment to the previous decree (28/1979) to improve and facilitate integrated sectors related to disasters, included Armed Forces back-up. The organization was called Bakornas PB. On 2 September 1999, Presidential Decree No. 106/1999 was issued as an amendment to the previous Presidential Decree No. 43/1990, which had not included the management of human-induced disasters or social unrest. In order to facilitate this additional scope, Bakornas PB became Bakornas PBP and the number of members of the Bakornas PBP was extended to 13 Ministers and related Governors. As the coordinating body, Bakornas does not have direct implementation or policy-making functions.

In 2007, the organizational structure of the Bakornas PBP, terms of reference and its role were modified and strengthened. A new Operations Manager was appointed to lead the Bakornas Secretariat. All key in-line ministries are now placed under the Bakornas as affiliated structures to implement actions for EPR.
At the Central level, Bakornas PBP formulates the disaster management policy, provides guidelines and directives, and coordinates disaster management activities before, during and after disasters in an integrated manner. It provides guidelines and directives on policy outlines in disaster management activities covering prevention, mitigation, rescue, rehabilitation and reconstruction.

At the provincial level, “SATKORLAK” coordinates disaster management execution within catchment areas as directed by Bakornas.

At the district level, “SATLAK” executes disaster management within catchment areas as directed by the Governor/Chairman of Satkorlak.

Satgas is the Disaster Management Task Force. It is responsible for carrying out the operational activities planned and directed by the Disaster Management Executing Unit.

**National Disaster Management Coordinating Board (Bakornas PBP)**

**Chairman: Minister Coordinator of Public Welfare**

**Members**
- Minister of Internal Affairs
- Minister of Security and Defence
- Minister of Social Affairs
- Minister of Health
- Minister of Public Works
- Minister of Transportation
- Minister of Agriculture
- Minister of Forestry and Plantation
- State Minister of Environment
- State Minister of Research and Technology
- Minister of Information
- Armed Forces Commander
- State Minister of National Development Planning

**Local Governor**

- Chairman of the Working Group
- Secretary Assistant to Minister Coordinator of Public Welfare
The Secretary of Bakornas PBP is assisted by four deputies who oversee smaller working groups with more focused goals.

- **Disaster Control**: Working groups include Mitigation, Saving Disaster Victims, Emergency Response, and the Rehabilitation and Construction Bureau.
- **Refugee Handling**: Working groups include Refugee Rescue and Safety, Refugee Utilization, Refugee Placement, and Reconciliation and Socialization.
- **Community Cooperation and Involvement**: Working groups include Data and Information, Public Relations, Cooperation and Community Involvement.
- **Administration**: Working groups include Planning and Evaluation, Logistics, Training and General Concerns.

### WORK OF WHO

WHO Indonesia came into being on 23 May 1950. WHO works closely with the government and plays an important role in national health development. Until 2002, WHO did not have an Emergency and Humanitarian Action (EHA) section in the country and a focal person was selected to provide support to the MoH in managing emergencies and disasters. The MoH also utilized its existing structure and departments to address the needs of disasters, largely on an ad hoc basis.

WHO Indonesia provides strong support during emergency situations in the country, such as the tsunami disaster and disease outbreaks, floods and landslides. Indonesia has only recently experienced complex disasters, and the institutional experience to deal with them is limited. The strategic direction of WHO in this area is to foster the development of national capacity for EPR to meet emergency public health needs. WHO works closely with other UN agencies to improve the effectiveness of collaboration.

WHO therefore:

- Encourages the adoption of international best practices and minimum standards in emergency management;
- Supports the development of emergency management capacity in government ministries;
- Emphasizes the need for emergency mitigation and preparedness, including better hazard and vulnerability assessments;
- Increases the resources for emergency relief activities in support of disaster-affected populations.

WHO Indonesia’s support to the MoH includes technical assistance, training, fellowships, guidelines and support for international standards.

WHO’s Country Cooperation Strategy for Indonesia focuses on six principal components:

- Health policy and systems development
- Communicable disease control
- Health of women and children
- Promoting a healthy environment and healthy lifestyles
Emergency preparedness and response
Partnerships and coordination.

FUTURE PLANS OF WHO

WHO Indonesia will focus more on policy advice, knowledge-sharing and advocacy, and move away from supplementation of Ministry of Health and Social Welfare (MoHSW) budgets and operational support, except in relation to complex emergencies of the kind Indonesia is currently facing. This implies a change in expenditure patterns, and an increase in the provision of high-level and high-quality technical resources; for example, from providing WHO fellowships to assisting in the formulation of a human resources development plan. In the future, WHO will:

- Provide technical, financial and material support for the new Disaster Management Agency to establish its central command unit and strengthen its network.
- Provide technical, financial and material support to the MoH to strengthen its EPR Programme.
- Establish an emergency revolving fund system.
- Strengthen WHO in-house capacity and systems.
- Provide capacity building of staff and systems among the UN, NGO and donor communities.
- Enhance capacity building of the private sector and media.
- Strengthen and expand the safe community approach.

PRIORITY NEEDS

- Strengthen EPR Regional Hubs according to the plan.
- Support and strengthen the International Training Centre on DRR.
- Strengthen monitoring with set indicators and operational research as part of the EPR Programme.
- Enhance capacity building of MoH staff, stakeholders and partner agencies.
- Strengthen international and regional networks, cross-regional and learning experiences for capacity building of the next generation of professional staff to manage emergencies and disasters.
- Strengthen standardization through standard operating procedures and expand the human resources programme.
Indonesia: Hazard profile and disaster preparedness

CONTACT DETAILS

WHO Representative
Dr Subhash R. Salunke
PO Box 1302
Jakarta
Indonesia

Telephone: 00-62-21-520-1166, AO
direct 520-1165, hunting 520-4349,
520-1164
Fax: 00-62-21-520-1164
Email: salunkes@who.or.id

EHA Country Focal Point
Dr Vijay Nath Kyaw Win
WHO Indonesia
Jakarta

Phone: 00-62-21-520-4349/4549
Mobile: 00-62-811 933-821
Fax: 0215201192
Email: wink@who.or.id

---

1. cippad.usc.edu/ai/tsunami/disaster_management.cfm
10. http://www.who.or.id/eng/display.asp?id=csr1;
13. http://www.who.or.id/eng/ourworks.asp?id=csr1
Emergency and Humanitarian Action
Country Report
The Maldives

Straddling the equator in the Indian Ocean, the Republic of Maldives is an archipelago of 1190 small islands stretching over 820 km north–south and 128 km east–west. Only 196 islands are inhabited, and another 88 islands have been developed into tourist resorts (Source: Census 2006, Ministry of Planning and National Development).

The Maldives is exposed to multiple natural hazards such as storms, tidal waves and heavy rains in the south Indian Ocean, which cause physical damage to the infrastructure, especially the coastal line leading to severe beach erosion. In addition, the country is susceptible to human-induced disasters such as oil spills and aviation-related hazards.

Although the Maldives is vulnerable to a wide range of natural disasters, given its unique geography and geology, it had never experienced a major disaster till the tsunami of December 2004.

Factors affecting vulnerability

- Some areas such as the capital Malé have a very high population density (103 693, [Source: Census 2006] in an area of 2 sq.km).
- There is inadequate critical infrastructure such as health and education in islands with a small population.
- The entire nation has an elevation of no more than two meters above sea level, thus it is particularly vulnerable to climate changes that cause a rise in sea levels.
- As the country is dependent economically on the fisheries and tourism sector, hazards related to the sea have the potential to severely affect the economy.
- Outreach services to several islands are difficult due to poor transport and communication.

Health hazards

Due to a well-functioning primary health-care system with a comprehensive national surveillance system, the majority of endemic infectious diseases are under control. The Maldives has been a malaria-free country since 1984. At the end of 1995, the incidence rate of leprosy was 0.1 and the prevalence rate was 0.3 per 1000. Thus, the Maldives is very close to achieving zero transmission status with respect to leprosy. Tuberculosis, which had a prevalence of 35 cases per 1000 in 1974, had declined in 1995 to about 0.66 per 1000. Childhood TB (under 5 years) is almost non-existent due to the high rate of BCG vaccination. Diseases of public health concern include dengue fever, acute respiratory infections and diarrhoeal diseases, which are among the ten most common communicable diseases.

HIV/AIDS and STIs: The Maldives is “highly vulnerable” to an HIV/AIDS epidemic largely because of a sharp rise in the number of people injecting drugs, as revealed by a government assessment (in conjunction with UNICEF and WHO) conducted in 2006 on AIDS. The country is characterized by “high risk and vulnerability and low prevalence”.

HAZARD PROFILE

EHA in the WHO South-East Asia Region
This means that while the number of cases of HIV infection remains low – from 1991 to 2006 there were 13 cases involving Maldivians – the potential for an explosion in infection rates remains real.

Dengue and chikungunya: WHO reports that there was an outbreak of dengue in the Maldives in 2006. This is endemic and sporadic outbreaks occur. More than 3500 cases of chikungunya were confirmed in the Maldives in December 2006 alone. This was the first time this disease was reported in the Maldives. From 1 December 2006 to 18 February 2007, a total of 10,831 (4.5% of the population) cases of chikungunya were reported to the Department of Public Health. Out of 196 inhabited islands, 121 islands reported the disease. No deaths were reported. A downward trend of the disease was observed since 12 January 2007 (week 7) and the outbreak was declared under control on 13 February 2007 (week 11).

Avian flu: There is no incidence of avian flu in the Maldives as of now; however, it is anticipated that there is a latent risk of an outbreak through the movement of infected migratory birds and the import of live poultry and contaminated poultry products from other countries. A six-month project between the Government of the Maldives and UN Development Programme (UNDP) titled “Capacity Building for National Prevention and Preparedness for Avian Influenza and Human Influenza in the Maldives” was inaugurated on 15 January 2007. The Government has invested in establishing rapid response measures for detection and diagnosis, and generating awareness of the high risk among the general public. However, additional investment is required for case management in the event of a pandemic.

Thalassaemia: The Maldives has a high prevalence of the genetic blood disorder thalassaemia. WHO Maldives estimates that one sixth of the population is a carrier of the disease and one in every 250 children is born with the full-blown condition. The prevalence rate of beta-thalassaemia is 18–20%.

Emerging and re-emerging diseases such as leptospirosis and scrub typhus are other health threats.

EXISTING DISASTER MANAGEMENT SYSTEM

Legal framework

Disaster preparedness and response is relatively new to the Maldives. Following the tsunami, the Government set up a Ministerial Committee and a Task Force for disaster risk reduction and management. The National Disaster Management Centre was created by Presidential Decree in 2006 and the roles of the Centre were specified. A Disaster Reduction and Management Bill is currently being drafted.

The Ministry of Health (MoH) is mandated with medical and public health preparedness and response for disasters. The Health Master Plan 2006–2015 identifies policy direction and goals for national disaster preparedness at all levels of the health sector. One of the priority areas in the Seventh National Development Plan (2006–2010) is natural disaster preparedness and mitigation.

The various policies outlined in the Plan include the following:

Policy 1: Make Maldivians safe and secure from natural disasters through information dissemination, and planning and coordination of national response actions.

Policy 2: Alleviate and eliminate risks to life and property from natural or man-made hazard events.
Policy 3: Deliver prompt and efficient relief and support in the event of a hazard.

Policy 4: Strengthen the information base on hazards and disasters to inform, educate and better protect the public.

Disaster management in the health sector

The health system in the Maldives inclines towards a totally integrated system where most of the financing, provision and stewardship is the responsibility of the Government. However, there are several private clinics ranging from single-doctor consultations to polyclinics with laboratory services and some with inpatient capacity. The system is further complemented by a few NGOs participating in public health functions, a competitive pharmaceuticals market, traditional medicine to some extent and a major private tertiary hospital.

The health services are organized in a five-tier system. Central institutions functioning under the MoH include the Department of Public Health (DPH), Department of Medical Services, Maldives Food and Drug Authority and the Indira Gandhi Memorial Hospital (IGMH). The National Thalassaemia Centre (NTC) functions under the Department of Medical Services. Their services embody the fifth or highest referral level. At the fourth level, there are 6 Regional hospitals; at the third level, 13 Atoll hospitals; at the second level, 86 health centres; and at the first level, 36 health posts and 51 family health service units staffed by family health workers.

The provision of health services to all Maldivians is difficult and expensive due to the geography of the country. The islands are dispersed across 90,000 sq. km and the transportation infrastructure is not well developed.

No emergency preparedness and response (EPR) plans existed in the Maldives before the tsunami, except for the emergency airport contingency plan. This plan, among others, includes protocols for the Indira Gandhi Memorial Hospital (IGMH) in the capital Malé. By September 2005, the MoH had developed a health sector EPR draft plan, supported by WHO which, however, is still in draft form (once finalized, this will become part of the National Disaster Management Plan).

Disaster health working group: This technical unit was established post-tsunami and is responsible for developing the health sector EPR plan, as well as implementing, monitoring and evaluating the EPR programme. The team is composed of representatives from different departments across the health sector. The working group has been dormant for the past year.

Health relief team: A health relief team was created immediately after the tsunami. Its structure is given below.
A permanent EPR focal person will be assigned and the work of EPR will be integrated into the Health Systems Development Unit in the MoH in the medium term. This unit will be in charge of all aspects of implementation of the EPR programme.

Disaster management in the non-health sector

The National Security Services (now the Maldives National Defense Force) is the first-line authority for disaster management. Efforts are being made to include disaster management in all areas of work in the country. The Ministry of Defence and National Security, Ministry of Finance, and Ministry of Planning and National Development lead the emergency response and relief effort in collaboration with other departments, UN agencies and other development partners. The Disaster Management Centre is the focal point for response, relief and recovery activities. All government ministries are involved in disaster management.

The National Disaster Management Centre

The Centre includes the following divisions:

National Disaster Relief Coordination Unit (NDRCU): The NDRCU is headed by the Chief Coordinator of the National Disaster Management Centre. All relief coordination programmes will be implemented and monitored by the respective sectoral ministries who will report periodically to the Chief Coordinator.

National Economic Recovery and Reconstruction Programme: The main objectives of the National Economic Recovery and Reconstruction Programme include planning and coordination of the redevelopment programme to revitalize the islands destroyed by the tsunami; and formulation of programmes and projects to revive the economy of the Maldives. The Programme consists of two units:

1. The National Economic Recovery Unit (NERU) coordinated by the Ministry of Finance and Treasury (MoFT);
2. The Housing and Infrastructure Redevelopment Unit (HIRU) coordinated by the Ministry of Planning and National Development (MPND).

Transport and Logistics Unit (TLU): The Unit is responsible for coordination and provision of transport and logistical support to all recovery and reconstruction programmes.

Aid management: The Government has established a Trust Fund to receive funds from the budget as well as from local and foreign sources for relief and reconstruction work. The Fund is overseen by a Board of Trustees, chaired by the Auditor General. The Board has representations from all key sectors and partners including the private sector, government and international agencies. All donors are encouraged to put their funds through the Trust Fund to increase the efficiency and effectiveness of aid utilization.

WORK OF WHO

WHO was the first UN agency to establish a country office in the Maldives and the WHO Office in the Maldives was opened on 25 February 1965. Maldives is the first country in South-East Asia to eradicate malaria and WHO was the major partner of the country in this achievement. With WHO’s support, the country was also the first in South-East Asia to introduce the viral hepatitis B vaccine for all newborns.
WHO’s collaboration with the Maldives over the current and past biennia has embraced a broad-based approach for meeting the country’s national health development needs. Currently, the WHO biennium collaborative programme 2006–2007 in the Maldives covers 26 projects (from 15 in 2000–2001).

WHO provided extensive technical support to the MoH and other relevant sectors in overall health development activities to achieve the Health Master Plan (1996–2005) objectives. WHO supported EPR activities even before the tsunami by assisting with the development of an EPR plan. WHO technical assistance has also been provided for upgrading the IGMH emergency department, as well as in implementing the hospital preparedness plan for mass casualties.

Collaboration on HIV/AIDS-related activities has been an Inter-Agency initiative under the UN Theme Group on HIV/AIDS which WHO chairs. In collaboration with UNICEF and UNAIDS, WHO supported the DPH/MoH in conducting an HIV/AIDS risk assessment and will provide technical assistance for the development of the second HIV/AIDS National Strategic Plan 2006–2011. WHO has been coordinating different activities related to preparation of the Avian Influenza and Human Influenza Pandemic Preparedness Plan in support of the MoH and Ministry of Agriculture, Fisheries and Marine Resources (MoAFMR).

**FUTURE PLANS OF WHO**

The main priorities of the MoH are described in the draft Health Master Plan 2006–2015. This and other policy priorities in the Vision 2020 offer WHO a potential role to support policy and promote appropriate technologies to implement health sector reforms in the country.

Proposed priority areas and strategies for the WHO Country Cooperation Strategy (CCS) for the period 2007–2011 have been agreed upon by the MoH. During the period of the CCS, WHO will assist the MoH in various health programmes as needed. However, major assistance will be provided in the following areas:

- Strengthening health systems
- Emergency preparedness and response
- Integrated surveillance for communicable diseases
- Food safety
- Environmental health
- Non-communicable diseases, mental health and health promotion
- Information and research
- Newborn health

**PRIORITY NEEDS**

- A designated focal point is needed in the MoH with adequate training in DM, preparedness and response.
- The Health Sector Disaster Preparedness Plan needs to be finalized and detailed standard operating procedures and action plans developed to implement the strategies for preparedness identified in the Plan.
- Table-top and simulation exercises for health response need to be conducted.
CONTACT DETAILS

WHO Representative
Dr Jorge Mario Luna
PO Box 2004
Malé 20-04
Republic of Maldives

Telephone: 00-960-332-1682, 332-7519, 332-2410, 331-3564
Fax: 00-960-332-4210
Email: lunaj@who.org.mv
WHO registry: whomav@who.org.mv

EHA Country Focal Point
Ms Laila Ali
WHO Maldives
Malé

Telephone: 00-960 332 7519, 332 2410
Fax: +00-960-332-4210
Email: laila@who.org.mv

1 http://www.un.org.mv/unrc/15
2 http://www.searo.who.int/en/Section1257/Section2263/Section2301_12216.htm
3 http://www.searo.who.int/en/Section1257/Section2263/Section2301_12216.htm
4 http://www.minivannews.com/pdf/AIDSsurvey.doc
5 For most recent updates on the chikungunya and dengue fever situation in Maldives see http://maldivestoday.com/archives/74 as also updates on the WHO Maldives website, http://www.who.org.mv
6 http://www.haveeru.com.mv/beta/english/?page=details&id=13333
7 Chikungunya outbreak in the Maldives. Department of Public Health, Republic of the Maldives, 2007
8 http://www.searo.who.int/en/Section1257/Section2263/Section2301_12216.htm
9 http://www.who.org.mv/EN/Index.htm

From vulnerability to preparedness
Emergency and Humanitarian Action
Country Report

Myanmar
Myanmar

HAZARD PROFILE

Myanmar is the largest country in mainland South-East Asia with a total land area of 676,578 sq. km. It has a long coastline of about 2,400 km, which covers almost all the east coast of the Bay of Bengal. It is situated right on the highly active fault line called the Sagaing fault. This leaves Myanmar a very short lead time for early warning. According to the Tsunami Risk Atlas, most of the coastal areas of Myanmar are within the risk zone. However, historical records reveal that deadly tsunamis are rare in Myanmar and the neighbouring Bay of Bengal.¹

While the country is relatively protected from natural disasters, floods occur in areas traversed by rivers or large streams. Although floods usually follow storms and torrential rains, they cannot be predicted or forecast.

Types of disasters

<table>
<thead>
<tr>
<th>Natural</th>
<th>Human-induced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>Urban fires: these usually occur in the central part of the country during the hot dry season</td>
</tr>
<tr>
<td>Cyclone: Cyclone Mala hit Myanmar on 28 April 2006. However, due to the fact that early warning systems were in place, casualties and damage to infrastructure were minimal.</td>
<td></td>
</tr>
<tr>
<td>Storm</td>
<td></td>
</tr>
<tr>
<td>Earthquake</td>
<td></td>
</tr>
<tr>
<td>Landslide</td>
<td></td>
</tr>
</tbody>
</table>

Factors affecting vulnerability

- Coastal areas in Myanmar are not situated perpendicular to the direction of the waves but parallel.
- Hundreds of uninhabited islands in the Myeik Archipelago soften the impact of tsunamis.

These factors help to reduce the impact of tsunamis.

Health hazards

Myanmar has prepared for a possible outbreak of avian and human pandemic influenza since early 2005. The country has aligned its National Strategic Plan for Avian and Human Influenza Pandemic Preparedness and Response with the WHO global action plan for pandemic influenza. Efforts in the coming years will focus on establishing and training and retraining of Rapid Response Teams (RRTs) at all levels including state/division, district and township.

Malaria is a re-emerging public health problem due to climatic changes, uncontrolled population migration, ecological changes, existence of multidrug-resistant *Plasmodium falciparum* parasite, emergence of an insecticide-resistant vector and change in behaviour of the vector.
The Central Committee for National Disaster Prevention was formed in 2005 under the Chairmanship of the Prime Minister with the following objectives:
- to prevent or mitigate loss of human lives
- to prevent or mitigate losses in settlement and property of the people
- to prevent or mitigate losses in State property

The Secretary (1) of the State Peace and Development Council acts as Vice Chairman of the Central Committee for National Disaster Prevention and members are concerned Ministers, Chairmen of the State/Division Peace and Development Councils, and Mayors of Yangon and Mandalay with a total of 37 members.

Under the Central Committee, the Management Working Committee for National Disaster Prevention was formed. The Secretary (1) of the State Peace and Development Council acts as Chairman, the Minister for Social Welfare, Relief and Resettlement as Vice Chairman; the Working Committee consists of 36 members.

To implement preventive measures, and relief and reconstruction tasks sector-wise, ten Subcommittees were formed under the Central Working Committee led by the Ministers concerned.

**Organization Chart of Central Committee, Working Committee and Subcommittees**

- Central Committee for National Disaster Prevention
- Management Working Committee for National Disaster Prevention

- Subcommittee for Information and Education
- Subcommittee for Clearing Ways and Transportation
- Subcommittee for Emergency Communication
- Subcommittee for Mitigation and Establishing of Emergency Shelter
- Subcommittee for Search and Rescue
- Subcommittee for Health
- Subcommittee for Information of Losses and Emergency Assistance
- Subcommittee for Rehabilitation and Reconstruction
- Subcommittee for Assessment of Losses
- Subcommittee for Security

Source: Department of Health

---

P. falciparum accounts for 75% of malaria infections and is now highly resistant to commonly used antimalarial drugs, such as chloroquine and sulfadoxine–pyrimethamine. An external review of the malaria control programme in 2005 confirmed that significant progress had been made since 1990 in reducing morbidity and mortality due to malaria.

Tuberculosis (TB) is one of the major public health problems in Myanmar and considered as the second priority disease in the National Health Plan (2001–2006). Recent estimates suggest that 1.5% of the population become infected with tuberculosis every year, out of which about 100 000 progress to develop TB.
The WHO Country Cooperation Strategy (CCS) for Myanmar 2002–05 outlines the strategic agenda for WHO in six priority areas:

**Disaster management in the health sector**

The national health system is organized under the Ministry of Health (MoH) and consists of seven departments – the Department of Health Planning, Department of Health, Departments of Medical Research (Upper Myanmar, Central Myanmar and Lower Myanmar), Department of Medical Science and Department of Traditional Medicine.

The Department of Health is responsible for providing health-care services to the entire population in the country.

Under the supervision of the Director General and three Deputy Directors General, there are 10 Directors. The Disease Control Division is responsible for the prevention and control of infectious diseases, disease surveillance, and outbreak investigation and response.

Under the Management Working Committee for National Disaster Prevention, there are 10 Subcommittees. The Subcommittee for Health is one of these.

The Subcommittee for Health comprises the following:

- Minister (Ministry of Health) Chairman
- Deputy Minister (Ministry of Home Affairs) Member
- Deputy Minister (Ministry of Social Welfare and Rehabilitation) Member
- Chairman of the Myanmar Red Cross Society Member
- Representatives from health-related departments Members
- Deputy Minister (Ministry of Health) Secretary
- Director General (Department of Health) Joint Secretary

Public health and emergency response is provided by:

- Central Disaster Assessment and Response Team
- Emergency Management Supporting Team
- State and Division Emergency Management Team
- Township Emergency Management Team

**WORK OF WHO**

The WHO Country Cooperation Strategy (CCS) for Myanmar 2002–05 outlines the strategic agenda for WHO in six priority areas:

**Health systems**: During this CCS period, WHO aims to provide support to improve the delivery of health services in Myanmar, as well as to develop and promote policies based on public health principles. Emphasis is on (i) research and policy support for health, involving both the public and private sectors; (ii) providing norms and standards, and strengthening the regulatory framework for health; (iii) strengthening policy, planning and management for the health workforce, drugs and consumables, health facilities and equipment.
Excess burden of disease: WHO would support Myanmar’s efforts to reduce excess morbidity and mortality due to both communicable and noncommunicable diseases, especially among the poor and marginalized sections of the population. The emphasis would be on prevention and integrated control of key diseases.

Women’s health/Reproductive health: Special efforts would be taken to reduce morbidity and mortality among women, especially during childbirth. Reproductive health and obstetrical services would be strengthened with emphasis on the quality of care and improved capacity of midwives and other skilled birth attendants.

Child and adolescent health: The health of neonates and young children would be improved through better prenatal and neonatal care, nutrition and the Expanded Programme on Immunization (EPI). Care for children would be enhanced through the Integrated Management of Childhood Illnesses (IMCI). Strategies and programmes would be developed to improve adolescent health.

Environmental health: Health would be improved by emphasizing health promotion and reducing risks from the environment, with a focus on water supply and sanitation. Community education and health promotion would be targeted, as well as efforts to improve water supply, reduce hospital waste and eliminate breeding places for mosquitoes causing malaria and dengue fever.

Major risk factors hazardous for health: The major emphasis here would be to ensure safe blood supply and reduce tobacco consumption, both key risk factors for health. Improved food safety would also be supported.

FUTURE PLANS OF WHO

The health-care plan for natural disasters has been formulated and is in place. Planning, preparation, training, drill and provision of timely, appropriate, organized and efficient emergency health-care services before and during disasters are crucial for saving lives and preventing unnecessary deaths.

The health-care plan also addresses and includes activities for communicable disease surveillance, safe water supply, environmental sanitation, adequate food supply, immunization, vector control and health education activities to prevent the occurrence of post-disaster health problems and communicable diseases in a systematic manner.

The areas of focus for WHO in the coming years would be to provide technical support to the MoH in updating preparedness plans developed in public health areas, and strengthen the capacity of the MoH in emergency preparedness and response including enhanced capacity to launch public health interventions.

PRIORITY NEEDS

Infrastructure development in terms of

- Logistic support such as the supply of emergency drugs and availability of buffer stocks in disaster risk areas
Laboratory equipment
Laboratory supplies for surveillance of communicable diseases following disasters
Transport and communication equipment
Emergency kits

Capacity building
Strengthen technical expertise through training in epidemiological surveillance and response, and disaster planning, preparedness and risk management
Strengthen surveillance of risk factors, disease surveillance and response
Strengthen early warning systems, advocacy and awareness
Strengthen and update the mapping of disaster-prone areas.

CONTACT DETAILS
WHO Representative
Professor Adik Wibowo
WHO Office
7th Floor, Yangon International Hotel
Ahlone Road, Dagon P.O. 11191,
Yangon
Myanmar

Telephone: 00-95-1-212-606, 212-608, 212-609, 226-895, WR direct 212-607
Fax: 00-95-1-212-605, 212-365
Email: wibowo.who@undp.org
Website: www.whomyanmar.org

EHA Country Focal Point
Dr Maung Maung Lin
WHO Myanmar
Yangon

Phone: 00-95-1-212-608
Fax: 00-95-1-212-605
Email: mmlin.who@undp.org

1The Indian ocean tsunami of 2004: Myanmar experiences. Presentation by Tun Lwin, Deputy Director-General, Department of Meteorology and Hydrology, Ministry of Transport, Yangon, Myanmar, June 2005
2www.whomyanmar.org
Nepal

HAZARD PROFILE

Nepal, a landlocked Himalayan country, faces a variety of hazards. Among 200 countries, Nepal ranks 11th and 30th, respectively, with regard to relative vulnerability to earthquake and flood.\(^1\)

According to the Global Earthquake Safety Initiative, Kathmandu is exposed to the greatest earthquake risk per capita among 21 megacities around the world, largely due to building collapse, and insufficient preparedness and medical care.\(^2\) If an earthquake of the 1934 magnitude is reported at this point of time, an estimated 40 000 deaths, 90 000 injured and 600 000–900 000 homeless can be expected.\(^3\) Such numbers pose a tremendous challenge to the health system of the country.

Types of hazards

<table>
<thead>
<tr>
<th>Natural</th>
<th>Human-induced</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Earthquake</td>
<td>• Fire</td>
</tr>
<tr>
<td>• Flood and landslide</td>
<td>• Landslides</td>
</tr>
<tr>
<td>• Windstorm, hailstorm, thunderbolt</td>
<td>• Industrial accidents</td>
</tr>
<tr>
<td>• Drought</td>
<td>• Road accidents</td>
</tr>
<tr>
<td>• Epidemics</td>
<td>• Conflict</td>
</tr>
<tr>
<td>• Glacial lake outburst flood (GLOF)</td>
<td></td>
</tr>
<tr>
<td>• Avalanche</td>
<td></td>
</tr>
</tbody>
</table>

Factors contributing to disaster vulnerability

- Geological, ecological, hydro-meteorological phenomena
- Demographic, such as rapid population growth and increasing population density
- High degree of environmental degradation, particularly deforestation
- Fragility of the land mass
- Widespread poverty
- Topography, which poses huge infrastructural challenges
- Poor building practices and no enforcement of building codes
- Insufficient emergency and hospital preparedness
- Political instability and conflict

Humanitarian situation

From 1996 to 2006, an armed Maoist insurgency spread all over the country causing more than 13 000 deaths.\(^4\) Severe human rights abuses were a prominent feature of this conflict. In April 2006, the complex emergency culminated in a tenuous ceasefire. In November 2006, a Peace Agreement was reached between the Seven Party Alliance and the CPN (Maoist). An interim government came to power by 1 April 2007 and Constituent Assembly elections are slated for December 2007, Nepal’s first in eight years. Although new conflict patterns along ethno-caste lines surfaced at the beginning of 2007, Nepal appears to be moving towards a post-conflict scenario.
The official disaster statistics provide the following disaster profile of the country:

### TOLL DUE TO NATURAL HAZARDS

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of hazard</th>
<th>Dead</th>
<th>Missing</th>
<th>Injured</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avalanches⁶</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>Fires</td>
<td>3</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Floods and landslides</td>
<td>114</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Earthquakes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Thunderbolts</td>
<td>16</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Windstorms</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Hailstorms</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Epidemics</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>137</td>
<td>34</td>
<td>96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of hazard</th>
<th>Dead</th>
<th>Missing</th>
<th>Injured</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Fires</td>
<td>25</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Floods and landslides</td>
<td>141</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Earthquakes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Thunderbolts</td>
<td>17</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Windstorms</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Hailstorms</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Epidemics</td>
<td>34</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>221</td>
<td>20</td>
<td>150</td>
</tr>
</tbody>
</table>

Source: Ministry of Home Affairs

### Displaced people

No exact official figures exist regarding the number of internally displaced persons (IDPs) as there is no official mechanism for recording these. Some estimates suggest up to 200 000 Nepalese may have been displaced during the 10 years of armed conflict. However, few significant camps for IDPs existed and IDPs seemed to be integrated in society. The main demographic impact is a concentration of population in the district headquarters, and migration to the Kathmandu Valley and neighbouring India. Since the signing of the Peace Agreement in November 2006, IDPs are returning in increasing numbers to their home areas.

In November 2006, as part of the Peace Agreement, an estimated 31 000 combatants from the People’s Liberation Army settled in seven cantonments and 21 satellite camps throughout the country. The sudden influx, the change of demographic and epidemiological profile, and poor living conditions in camps pose a major public health risk. In May 2007, WHO, UNFPA and GTZ submitted a proposal to the United Nations Mission in Nepal (UNMIN) proposing public health interventions and enhanced curative and referral services.

In addition, more than 100 000 Bhutanese refugees are registered in seven camps in Jhapa and Morang districts. Currently, some refugees are being repatriated to the US but no repatriation to Bhutan has taken place.
Health hazards

Epidemics account for high morbidity and mortality in Nepal. The already fragile health system was further weakened by the conflict due to several reasons: damage to the health infrastructure, inadequate and ill-equipped health staff, lack of supervision and limited outreach services, which reduced the supply of health services. At the same time, restricted mobility and access to health care reduced the demand for health services, especially in remote conflict-affected districts and among vulnerable population groups.

As a consequence, an increase in disease incidence and case-fatality ratios have been suspected. Diarrhoeal diseases (especially cholera and epidemic shigellosis), acute respiratory infections (ARI), Japanese encephalitis, kala-azar (visceral leishmaniasis) and \( P. \textit{falciparum} \) malaria are seasonal threats, and avian and human pathogenic influenza are of increasing concern.

EXISTING DISASTER MANAGEMENT SYSTEM

National Policy Framework

- The Local Self Governance Act, 1999 bestows the responsibility of disaster management at the local level on local bodies.
- The Tenth Five-Year Plan, 2003–2008 outlines the objectives, strategies, programmes, working policy and expected achievements related to disaster management.
- The National Action Plan on Disaster Management, 2005 includes important policy and institutional perspectives such as the establishment of a National Disaster Management Council and National Disaster Information System.
- The National Water Plan, 2005 enhances institutional capabilities for managing and mitigating the effects of water-induced disasters.
- The Water Induced Disaster Management Policy, 2006 stresses on institutional development for the control of water-induced disasters and management of flood-affected areas. It also defines the role of local and central government institutions, NGOs, community-based organizations and private institutions in disaster management.

National Emergency Public Health Guidelines

- A poster on myths and realities of natural disasters was printed by the Epidemiology and Disease Control Division (EDCD) and WHO in 2000.
- Guidelines on emergency preparedness and disaster management for hospitals was published by EDCD and WHO in 2002.
- The Health sector emergency preparedness and disaster response plan Nepal was published by EDCD, the Disaster Health Working Group (DHWG) and WHO in 2003.
- Guidelines on best public health practices in emergencies for district health workers was developed by EDCD and WHO and published in March 2004.
Nepal: Hazard profile and disaster preparedness

Disaster management in the health sector

Within the health sector, the Disaster Health Working Group (DHWG), founded during the national flood disaster in 1993, is the body responsible for coordination of emergency preparedness and disaster response at the national level. The group was revitalized in 2000 by the EDCD of the DHS and the Emergency and Humanitarian Action (EHA) Programme of WHO.

- The DHWG Secretariat’s responsibility is to initiate, implement and evaluate future health sector emergency-related activities.
- The DHWG Secretariat developed a comprehensive draft health sector emergency plan published in September 2003.
- The DHWG was institutionalized in 2003 and is now legally recognized within the Government system. The Director General of the Department of Health Services is the Chairperson.

The Ministry of Home Affairs (MoHA), Ministry of Health and Population (MoHP), EDCD/Department of Health Services (DHS), Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ), Office of U.S. Foreign Disaster Assistance (OFDA), Nepal Red Cross Society (NRCS), National Society for Earthquake Technology-Nepal (NSET) are some of the agencies/institutions that have participated in the DHWG Secretariat during previous years. With the institutionalization of the DHWG, other institutions and organizations such as the NRCS, UNICEF, army and police hospitals have been included as members of the Secretariat.

Since April 2006, WHO has initiated an Emergency Health and Nutrition Working Group (EHNWG) in collaboration with UNICEF to coordinate emergency health activities of the UN, international organizations and NGOs. This group meets approximately every second month.

- Guidelines on non-structural safety in health facilities was developed by EDCD and WHO and published in March 2004.
- Guidelines for seismic vulnerability assessment of hospitals was developed by EDCD, National Society for Earthquake Technology (NSET) and WHO, and published in April 2004.
- Collection and compilation of district profiles: baseline data through secondary sources (publication and CD) was developed by EDCD, Nepal Public Health Association (NPHA) and WHO in December 2005.
- Nepal national health prevention and treatment protocols/guidelines/algorithms/standards/manuals (CD) was developed by EDCD, NPHA and WHO in December 2005.
- A Mass casualty management trainer’s manual was developed by EDCD and WHO in January 2006.
- Posters on myths and realities of natural disasters and dead bodies were published in January 2007.
- Environmental health in emergencies: technical notes on water and sanitation was published by WHO in March 2007.
The MoHP has established Rapid Response Teams (RRTs) to strengthen the disease surveillance system at the district level in all 75 districts. In 2003, it was decided to include emergency preparedness and disaster response in the responsibilities of the RRTs as they would be the first-level responders to public health emergencies in the aftermath of a disaster. When a disaster occurs, RRTs coordinate with the District Natural Disaster Relief Committee (DDRC), which in turn reports to the MoHA. A variety of agencies have provided training at different times, but it is unclear how many RRTs have benefited from training, what level of training they have received, and the effectiveness of this training. The lack of adequate supplies and the weak underlying health system make it difficult for RRTs to respond effectively.

From 2004 onwards, EDCD and WHO have initiated a number of activities to strengthen RRTs’ capacity to respond to emergencies. Twenty-five RRTs have been trained throughout the country. Rapid health assessment forms and post-disaster syndromic disease surveillance forms are currently under preparation at the central level and will be distributed to them.

**Disaster management in the non-health sector**

- **Ministry of Home Affairs (MoHA)** is the National Focal Agency on Disaster Management and lead agency responsible for implementation of the Natural Calamity (Relief) Act, 1982. The MoHA is also responsible for rescue and relief work, data collection and dissemination, as well as collection and distribution of funds and resources.

- **Central Natural Disaster Relief Committee (CDRC)** is chaired by the Home Minister and comprises related ministries and security agencies along with voluntary organizations such as the NRCS. The CDRC is responsible for preparing national policies and ensuring their implementation. To support the functioning of the CDRC, there is a Working Committee and the Subcommittees of Relief and Treatment, and Supply, Shelter and Rehabilitation.

- **Regional Natural Disaster Relief Committee (RDRC):** During emergencies, the RDRC is present in all five regions of Nepal and is chaired by the Regional Administrator. It comprises related government agencies and security agencies (law and order, emergency response and development institutions) along with voluntary organizations such as the Red Cross. It is responsible for supporting and monitoring the activities implemented by the DDRCs.

- **District Natural Disaster Relief Committee (DDRC):** All 75 districts of Nepal have a DDRC. The chairperson is the Chief District Officer (CDO), who is the highest-level government official to take disaster-related decisions. It comprises various line agencies such as law and order, emergency response (police and armed police), district chapter of NRCS and critical facilities such as irrigation, road, livestock, health, etc.

- **Local Natural Disaster Relief Committee (LDRC):** These are responsible for disaster management at the local level, such as disbursement of funds during emergencies, and rescue and transport of the injured to hospitals.
The EHA Programme of WHO Nepal has been an active partner in the health sector emergency planning and preparedness process since 1999. Over time, WHO EHA has built up a strong coordination function within the Government, and acknowledged expertise in disaster preparedness and response.

The main areas of activity are as follows:

- **Health sector emergency planning**: This includes developing and updating emergency plans at district and national level, introducing sectoral indicators and minimum standards for various types of emergencies in different geographical settings, and field-testing rapid health assessment templates, guidelines and procedures for conflicts, earthquakes, and floods and landslides.

- **Development of public health guidelines**: Several guidelines and manuals, as well as disaster plans and training materials have been developed covering the main technical areas related to public health in emergencies.

- **Training of health-care providers in disaster response**: WHO EHA has implemented numerous disaster management training sessions, including earthquake mitigation, mass casualty management, and training of RRTs and field staff on how to prepare for and respond to the health impacts of disasters.

- **Seismic assessments of likely damage to critical health structures**: EHA has conducted seismic vulnerability assessments of 19 hospitals throughout the country in collaboration with NSET-Nepal. EHA has recently implemented seismic assessments of the National Public Health Laboratory, EDCD and six NRCS blood banks.

- **Health sector emergency planning**: This includes developing and updating emergency plans at district and national level, introducing sectoral indicators and minimum standards for various types of emergencies in different geographical settings, and field-testing rapid health assessment templates, guidelines and procedures for conflicts, earthquakes, and floods and landslides.

- **First aid and inpatient trauma care supplies**: EHA has implemented a programme with the NRCS to strengthen the first aid capacity of 20 NRCS district chapters in remote districts. This programme introduced two-colour triage and ensured that minimum first aid supplies and equipment as well as trained first aid providers are available at district chapters.

- **Triage and hospital planning**: Given the limited number of hospital beds in the country, prioritization of casualties (triage) is vital for any emergency response. Triage tags, kits and guidelines have been produced and distributed to all major hospitals in the country. Furthermore, EHA recently conducted triage and contingency planning workshops to enhance the response capacity of all regional and zonal hospitals throughout the country.

- **Pre-positioning of drugs and supplies**: EHA is in the process of pre-positioning emergency supplies at strategic locations in the country for future disaster response. New emergency health kits have been dispatched to vulnerable populations and new kits ordered for future emergencies.
Ensuring interagency coordination: WHO EHA has contributed to revitalizing the DHWG and plays a key role in running the national coordination meeting in collaboration with EDCD. WHO also co-chairs the Emergency Health and Nutrition Working Group (EHNWG) with UNICEF.

Health assessment: In April 2006, WHO EHA together with UNICEF and UNFPA conducted a countrywide assessment of the mass casualty management capacity of 33 hospitals. During autumn 2006, EHA implemented comprehensive emergency preparedness baseline assessments in eight districts throughout the country. In September 2006, WHO with health officials carried out a flood assessment in Banke and Bardia districts. Two months later, WHO took part in a malaria outbreak investigation in Banke district in collaboration with medical experts from EDCD. In November–December 2006, WHO commissioned a baseline assessment of three regional and nine zonal hospitals throughout the country.

Public health research: One outcome of Consolidated Appeals Process (CAP) funding from Swedish International Development Agency (SIDA) is an operational research component to the programme based on collaboration with the Conflict and Health Unit at the London School of Hygiene and Tropical Medicine (LSHTM). Consultants from the LSHTM have assisted WHO EHA in assessing available baseline, disease and crisis-related data in the country and strategizing an appropriate response. In addition, LSHTM has actively supported WHO’s emphasis on Health in Transition by facilitating a workshop in March 2007 and proposing further studies on specific policy and operational priorities in a post-conflict setting.

UN Nepal’s Emergency Preparedness

In 1999, UN agencies in Nepal initiated a collaborative emergency preparedness planning process through the UN Disaster Management Team (UNDMT). Under the UN Disaster Response Preparedness Plan, an Emergency Operations Centre (EOC) was constructed at the UN compound in Pulchowk, Kathmandu. WHO EHA Nepal played an instrumental role in formulating the plan and in delivering technical assistance to the UNDMT. Since 2003, minimum stockpiles of food and water supplies as well as first-aid equipment were stored in containers placed next to the EOC.

From 2005 onwards, OCHA and UNDMT have promoted a contingency planning process to prepare the UN system to deal with the humanitarian consequences of natural and complex emergencies.

In 2006 and 2007, WHO procured two containers and pre-positioned essential emergency supplies at the UN compound in Pulchowk and at DHS in Teku.

FUTURE PLANS OF WHO

Due to CAP funding from SIDA, WHO has recently extended its programme and operational capacity to prepare for and respond to emergencies. This has allowed the programme to become a major player among humanitarian and public health agencies in the country.
WHO should extend its field operations and play a leading role in crisis detection, assessment and monitoring related to public health and nutrition. In addition, EHA must continue its efforts to coordinate humanitarian and public health activities in the country to ensure an appropriate sectoral response. To enable this, WHO EHA should:

- Assume increasing responsibility for nationwide, effective coordination of humanitarian health issues in both natural disaster and complex emergency situations, as well as support the health authorities for EPR coordination;
- Stimulate a systematic approach, and promote methodologically rigorous methods for nationwide collection of data for crisis detection and monitoring, and fill in gaps if necessary;
- Reinforce time-tested activities in the area of natural disaster preparedness.

**PRIORITY NEEDS**

Emergency supplies for pre-positioning and disaster response

Human and material resources to enhance emergency preparedness in the country.
Nepal: Hazard profile and disaster preparedness

UNDP, 2004


The Kathmandu Valley earthquake risk management project. GeoHazards International and NSET, 1999

http://www.inseconline.org/hrvdata.php


1 UNDP, 2004
3 The Kathmandu Valley earthquake risk management project. GeoHazards International and NSET, 1999
4 http://www.inseconline.org/hrvdata.php

CONTACT DETAILS

WHO Representative
Dr Kan Tun
PO Box 108, Kathmandu
Nepal

Telephone: WR direct 00-977-1-5523-993, UNDP 5523-200 Ext.1300
Fax: 00-977-1-5527-756, UNDP 5523-986, 5523-991

EHA Country Focal Point
Mr Erik Kjaergaard
WHO Nepal
Kathmandu

Phone: 00-977-1-5523-993
Mobile: 00-977-98511-00191
Fax: 00-977-1-5527-756
Email: kjaergaarde@searo.who.int
Emergency and Humanitarian Action
Country Report

Sri Lanka
Sri Lanka

HAZARD PROFILE

Natural disasters

The tsunami (2004), floods and landslides (2003) and various small-to-medium scale disasters over the past few years have brought back into focus the fact that Sri Lanka is a disaster-prone country. Natural disasters in Sri Lanka are mainly hydro-meteorological phenomena such as floods, landslides, cyclones, tidal waves and droughts. Floods and landslides are more localized and seasonal while droughts are more widespread and cyclones occasional. The effects of coastal erosion are largely felt in the west, south-west and southern coastal belts. About 50% of the population lives in the coastal belts. Erosion severely affects infrastructure facilities such as the railways and road systems, communications and other economic activities.

Human-induced disasters

Industrial and mining accidents, and environmental degradation are other potential hazards in the country.

Landmines and unexploded ordinances (UXOs) are a major problem throughout the north and east of Sri Lanka. July, August and September are the most dangerous months in Sri Lanka for landmine injuries. Each year at this time, people return to their fields to begin planting and harvesting their crops. It is then that the lands of the north and east, seeded with explosives, reap their deadly harvest.

Factors affecting vulnerability

- Unplanned patterns of human settlement, development and land use have resulted in severe encroachments into flood plains and unstable slopes, creating unsafe conditions for the population inhabiting these areas.
- Depletion of forest cover resulting in environmental degradation leads to increased run-off, soil erosion, unstable slopes and silting of water bodies.
- Paddy fields, which serve as flood detention areas, are being filled for commercial and residential purposes.
- Irrigation schemes and water conservation measures remain inadequate despite three serious droughts during the past decade.

Humanitarian issues

More than two decades of conflict between the Government of Sri Lanka (GoSL) and the Liberation Tigers of Tamil Eelam (LTTE) separatist group have caused at least 65 000 deaths, according to humanitarian monitoring organizations. According to the Office of the UN High Commissioner for Refugees (UNHCR), renewed conflict has displaced more than 200 000 people, primarily in northern and eastern Sri Lanka since April 2006. Since early 2006, military hostilities between the GoSL and the LTTE have escalated, particularly in northern and eastern Sri Lanka. Approximately 260 000 individuals remain displaced from earlier stages of the conflict, in addition to those people who still lack permanent
shelter as a result of the December 2004 tsunami. As of November 2006, 15,800 people had fled Sri Lanka to Tamil Nadu state in southern India.

On 17 January 2007, the UN presented a Common Humanitarian Action Plan (CHAP) for Sri Lanka, which requested US$ 66 million for relief and recovery programmes in 2007.³

As on December 2006, the number of internally displaced persons (IDPs) due to the ongoing conflict totalled 202,011 persons in the north and east provinces.⁴

**Health hazards**

Sri Lanka has a history of epidemiological vulnerability to malaria, measles, diarrhoeal diseases, acute respiratory infections, dengue/dengue haemorrhagic fever, Japanese encephalitis, rubella, HIV/AIDS, and new and emerging diseases such as avian influenza and chikungunya. In addition, the potent combination of floods, excessive rains and civil strife leading to large groups of IDPs confined to temporary camps creates ideal conditions for the outbreak and rapid transmission of several communicable diseases.

**Recent emergencies and natural disasters in Sri Lanka⁴**

<table>
<thead>
<tr>
<th>Type</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash flood</td>
<td>January 2007</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Earthquake and tsunami, December 2004</td>
</tr>
<tr>
<td>Drought</td>
<td>July 2002 and August 2001</td>
</tr>
<tr>
<td>Tropical cyclone</td>
<td>December 2000, November 1992</td>
</tr>
<tr>
<td>Technological disaster</td>
<td>Dam burst, April 1986</td>
</tr>
</tbody>
</table>

**Institutional framework**

Following the tsunami, the GoSL took significant steps towards strengthening legislative and institutional arrangements for disaster management. The Sri Lankan Parliament Select Committee on Natural Disasters (a bi-partisan committee) was constituted to deliberate on issues related to the status of disaster management in Sri Lanka. The Committee’s recommendations towards achieving a safer Sri Lanka have subsequently guided legislative and policy efforts in this direction.

**Disaster management in the health sector⁴**

The Ministry of Health Care and Nutrition is assigned the responsibility for formulating national health sector policy, and planning and supporting the Disaster Management Centre (DMC) to carry out activities relating to health sector emergency preparedness and response. The Deputy Director General (Planning) is identified as the health sector focal point in the Ministry of Health Care and Nutrition.
The national hospital based in Colombo has established an emergency health sector plan primarily meant to handle mass casualty situations such as bomb blast, etc. Pre-hospital and community-level health sector activities are not mentioned in the hospital emergency contingency plan. Presently, the plan is confined to the national hospital of Sri Lanka with no organized pre-hospital structure.

Written documents on pre-hospital preparedness and response are yet to be developed; this results in bringing victims on an ad-hoc basis. Interlinkages among other health sector government establishments (dispensaries, rural and other hospitals), private sector hospitals and the national hospital are also yet to be clearly defined.

**Disaster management in the non-health sector**

The National Council for Disaster Management (NCDM) and the DMC were established under the Presidential Secretariat in accordance with the Sri Lanka Disaster Management Act No. 13 of 2005 passed by the Parliament of Sri Lanka in May 2005. This Act provides the legal basis for instituting a disaster risk management (DRM) system in the country. The DMC is the primary agency mandated by the GoSL for DRM activities in Sri Lanka. The Ministry of Rehabilitation, Reconstruction and Refugees is the nodal ministry for addressing issues relating to the conflict in the north and east.

In December 2005, the Ministry for Disaster Management was established under the Prime Minister to take the lead role in directing strategic planning for disaster response, risk mitigation, preparedness planning and risk reduction. In January 2006 the Ministry was renamed the Ministry of Disaster Management and Human Rights, with the human rights portfolio added to the duties to be discharged by the Ministry.

The DMC is in charge of directing, issuing guidelines, facilitating, coordinating, monitoring and, where necessary, directly implementing or enforcing activities related to disaster management technology, long-term mitigation and disaster risk reduction (DRR).

**National Council for Disaster Management**

Chair person: H.E. President
Vice Chairman: Hon. Prime Minister
Opposition leader

Chief Minister
Opposition MPs

Ministry of Disaster Management and Human Rights

DMC
Through District DM Coordinators, the DMC is in contact with Provincial Councils, District Secretariats, Line Departments, and District NGOs and CBOs right down to the Gram Niladaries and villages.

Since the establishment of the Sri Lanka Country Office in 1952, WHO has been working closely with the Government, development partners and other key stakeholders in the health sector. As an intergovernmental agency, WHO’s key partner is the MoH. Quantitatively, WHO’s financial contribution to the national health sector is relatively small, compared with the Government’s expenditure on health. However, technically, WHO is well equipped in the health sector and has been able to play a leading role in exerting considerable influence on the development of national health policies through its collaborative efforts. Through the mutual observation of the Ceasefire Agreement signed by the Government and the LTTE in 2002 provided a window for the North-East to re-build its health system. Under an agreement signed between WHO and the North-East Provincial Council (NEPC), WHO has been actively providing technical and other support to the NEPC with the objective of improving health service delivery and re-integrating the North-East health system into the national health sector.

WHO has provided financial and technical assistance to the MoH in Sri Lanka to establish a facility-based injury surveillance system at the National Hospital of Sri Lanka in Colombo. This pilot project provided information about the incidence, causes and consequences of fatal and non-fatal injuries, which can be used for policy-making, prevention programming and advocacy work.
A hospital-based record review was conducted in a landmine-affected area of Sri Lanka to better assess the morbidity and mortality associated with landmine injuries. The project was launched in June 2002. A community-based survey was also conducted in the Galle district to assess disabilities as a result of injuries and violence.10

WHO in collaboration with the University of Peradeniya, Kandy established a Public Health and Emergency Management in Asia and the Pacific (PHEMAP) course. This is a formally accredited emergency training course for health sector personnel. From 2007, a postgraduate degree will be offered.

The need for a pre-hospital emergency care ambulance service was greatly felt during the tsunami disaster. To address this need, a pre-hospital emergency care training programme was developed in collaboration with the University of Peradeniya, South Australian Paramedics Aboard and WHO. Several 10-day training programmes have been conducted and 334 government health sector officers have been trained.

An “Avian Influenza Partnership” has been established in Sri Lanka with the primary purpose of ensuring partner coordination in the provision of support for the development and implementation of effective and concerted country-level pandemic preparedness and response to avian influenza (AI). The partnership will aim at enabling implementation of the GoSL’s “National Influenza Pandemic Preparedness Plan” drawn by the MoH and “Sri Lanka Exotic Disease Emergency Plan” drawn by the Department of Animal Production and Health by ensuring that adequate technical and financial support is available in a timely fashion.

### FUTURE PLANS OF WHO

The WHO Country Cooperation Strategy (CCS) 2006–2011 in Sri Lanka is a medium-term strategic framework for cooperation between the Government and WHO, focusing on six strategic areas of intervention which are consistent with the needs of the country.11

- **Health system**: Enhance fairness and financial risk protection in health care and optimal use of resources; enhance management and quality of delivery of services and interventions.
- **Human resources for health**: Rationalize the development and management of human resources; support pre-service and continuing education in clinical, public health and management competencies; strengthen the regulatory framework to ensure quality of performance of health staff.
- **Communicable diseases**: Strengthen surveillance systems for existing, emerging and re-emerging diseases; address priority communicable disease programmes; coordinate action for pandemic preparedness.
- **Noncommunicable diseases and mental health**: Support the prevention and control of major noncommunicable diseases (NCDs), mental health disorders and related priorities; promote integrated and cost-effective approaches for the prevention and management of major NCDs; support surveillance of NCD risk factors and their determinants.
- **Child, adolescent and reproductive health**: Reorient the existing maternal and child health services by inclusion of a package of services and interventions for child, adolescent and reproductive health and nutrition using a life-cycle approach.
Emergency preparedness and response: Strengthen and communicate information on emergency preparedness and response; contribute to networks for coordinated preparedness and crisis management; continue to address health and rehabilitation in post-tsunami and post-conflict areas; institutionalize the Emergency Preparedness and Response Programme within the health sector.

Over the next five years and with particular focus on the above six priority areas, WHO will aim at catalysing change through provision of technical support and stimulating partnership in health programmes where joint action is needed.

PRIORITY NEEDS

- Promote the establishment of an Indian Ocean Tsunami Warning System (OCTWS) and establish a communication system between the OCTWS and respective disaster management agencies in the Region.
- Explore the possibility of using the satellite communication facility available in the Region for post-disaster search and rescue, and relief distribution activities.
- Reach an agreement to provide real-time data to all agencies involved with issuing disaster warning messages in the Region.
- Strengthen the capability and capacity for disaster response.
CONTACT DETAILS

WHO Representative
Dr Agostino Borra
PO Box 780
Colombo
Sri Lanka

Telephone: 00-94-11-250-2841, 250-2319, 250-2842, 250-3404, 250-3405,
WR direct 259-2727
Fax: 00-94-11-250-2845
Email: borraa@whosrilanka.org
Website: www.whosrilanka.org

EHA Country Focal Point
Dr Hendrikus Raaijmakers
WHO Sri Lanka
Colombo
Telephone: 077-3178604
Email: hendrikus@whosrilanka.org

1http://cat.inist.fr/?aModele=afficheN&cpsidt=1342279
2Sri Lanka: Complex Emergency Fact Sheet #1 (FY) 2007, UNHCR
   http://www.reliefweb.int/rw/RWB.nsf/doc404?OpenForm&rc=3&cc=lka
   for maps on Sri Lankan crises
4http://www.reliefweb.int/rw/rwb.nsf/doc109?OpenForm&rc=3&cc=lka
6http://www.searo.who.int/en/Section23/Section1108/Section1418_10547.htm
7http://www.searo.who.int/en/Section23/Section1108/Section1418_10547.htm
8http://www.whosrilanka.org
9EHA in the WHO South-East Asia Region
11http://www.whosrilanka.org/EN/Section30.htm
12UWL Chandradasa, Disaster Management Policy in Sri Lanka. Presented at the South Asia Policy Dialog Workshop – New Delhi, India, 21-22 August 2006
Emergency and Humanitarian Action
Country Report
Thailand

HAZARD PROFILE

Due to its unique geography and geology, Thailand is prone to natural disasters such as drought, earthquake, epidemic, flood, mudslide, wave/surge, wild fire, windstorm. Recurrent natural disasters in Thailand are water related such as flooding, urban inundation, tropical storms and drought.

**Natural disasters**
- Flash flood
- Tsunami
- Landslide
- Drought
- Forest fire

**Human-induced disasters**
- Fire
- Leakage of chemicals from factories
- Road traffic accidents
- Terrorist attacks

Recently, the Royal Thai Government (RTG) declared its northernmost province of Chiang Rai a disaster zone after provincial authorities and other agencies admitted to failing to control brush and forest fires that have left smog and smoke hanging in the northern part of the country. The local authorities blame the “slash-and-burn” practice of some farmers of burning accumulated vegetation to provide nutrients to the soil.

**Humanitarian situation**

An estimated 2 million migrants have settled in Thailand as a result of internal conflict in neighbouring countries, and economic opportunities and available services in Thailand. Most are from Myanmar, and more than half are believed to live in the ten provinces of Thailand bordering Myanmar. These provinces are also home to more than 117,000 officially displaced persons living in nine border camps and 93,565 registered migrant workers. The large number of unregistered migrants experience financial, security, cultural, language and geographical barriers in obtaining health services. The mobility of the population, combined with barriers to access, contribute to increased morbidity and mortality, particularly from malaria, tuberculosis, HIV/AIDS and vaccine-preventable diseases.

**Health hazards**

The threat of avian influenza looms large in Thailand. It is the primary disease outbreak tracked by WHO in the past five years and an impending health disaster of paramount concern for international health partners active in Thailand. However, malaria is no longer a problem in most of the country and annual new HIV infections have been reduced by more than 80% since 1991, the peak of the epidemic.
Natural
2007: Drought and forest fire
2006: Flash flood with landslides in five provinces in northern Thailand
2005: Flash flood/drought in eastern Thailand
2004: Tsunami in six southern provinces

Humanitarian
2004–06: Series of terrorist attacks and bombings every month in five provinces in southern Thailand
2006: Series of political demonstrations in Bangkok from January to May 2006

EXISTING DISASTER MANAGEMENT SYSTEM

Legal and institutional framework
The disaster management system in Thailand is mainly based on the Civil Defence Act of 1979 and the Civil Defence Plan, 2002. The Natural Civil Defence Committee (NCDC) is the main policy-making body. After the Thai Government enacted the Bureaucrat Reform Act, 2002 on 2 October 2002, the Department of Disaster Prevention and Mitigation (DDPM) came into existence under the Ministry of Interior. It has replaced the former Civil Defence Division as the National Civil Defence Committee Secretariat. The DDPM acts in coordination with other agencies such as the Meteorological Department (TMD), Ministry of Information Technology, Royal Irrigation Department (RID), Ministry of Agriculture and Cooperatives, Department of Water Resources, Ministry of Natural Resource and Environment.

Legal structure of Disaster Management according to the Civil Defence Act, 1979

Source: Department of Disaster Prevention and Mitigation
Disaster management in the health sector

Currently, there is no single department/bureau/division devoted to Emergency and Humanitarian Action/Health Action in Crises (EHA/HAC) in the Ministry of Public Health (MoPH). The MoPH’s EHA-related activities are spread across various departments/bureaus/divisions of the MoPH and therefore, there is no clear focal point in the health sector. A team of officials from various departments/bureaus/divisions responds to emergencies. Despite the absence of a focal point, the MoPH responds to crises effectively. The MoPH plans to strengthen the Narenthorn Centre in responding to EHA-related issues in the health sector. The Narenthorn Centre is a division under the office of the permanent secretary of the MoPH and provides emergency medical services (EMS) throughout the country. In addition, the MoPH has recognized that an “appropriate structure” is necessary to address emergencies.

There is a national-level committee to control the avian influenza epidemic/human influenza pandemic. There are committees for other potential hazards.

Disaster management in the non-health sector

The Department of Disaster Prevention and Mitigation (DDPM) comprises seven bureaus and nine divisions at the headquarters with 12 Regional Disaster Centres and 75 Disaster Prevention and Mitigation Provincial Offices. According to the Civil Defence Act, 1979 the disaster management system in Thailand comprises 3 levels:

National level: At this level, it is the responsibility of the NCDC to coordinate all activities relevant to civil defence and disaster management. The Committee is chaired by the Minister of Interior with members from government agencies from all over Thailand concerned with disaster management activities. The DDPM Director-General is in charge of the NCDC Secretariat.

Regional level: At the regional level, 12 Regional Disaster Prevention and Mitigation Centres have been established to render technical assistance and auxiliary services to local Civil Defence Committees. Each Regional Disaster Prevention and Mitigation Centre is headed by a Director reporting to the Director-General of the DDPM.

Local level: The main actors are the local Civil Defence Committees at provincial, district and local levels.

The National Civil Defence Committee (NCDC) coordinates all activities relevant to civil defence and disaster management at the national level.

The National Safety Council of Thailand (NSCT) handles man-made disaster management only. It was established in 1982 on account of the rising road accidents in Thailand.

The National Disaster Warning Centre was established under the Order of the Office of the Prime Minister. Its major task is to detect earthquake and to analyse seismic data to determine the possibility of a tsunami before issuing notifications to the public, authorities and rescue teams for evacuation of people at risk to safe places.

Master Disaster Management Plan

The Civil Defence Secretariat is responsible for identifying disaster prevention measures and policies, and formulating the National Civil Defence Plan in Thailand. This Plan
serves as the master plan for all agencies concerned, and provides guidelines for the formulation of the operational plan of agencies responsible for the management of any disaster. The Civil Defence Secretariat also provides equipment, technical assistance and training courses for local agencies and the public. In addition, it coordinates with agencies that are in charge of disaster relief and rescue operations.

According to the Civil Defence Act, 1979 functional agencies are responsible for formulating their own disaster management plan. The Plan is to be reviewed and updated every three years, and further proposed to the NCDC for approval. The current National Civil Defence Plan, which was reviewed and updated in 2005, consists of two components – the Disaster Prevention and Mitigation Component, and Civil Defence for Security (Rear-Area Protection) Component.

Thailand has now established a Geographic Information System (GIS) to manage disaster-related information. Currently, Thailand has databases on chemical risk areas, flood- and mudslide-prone areas, and the network of concerned agencies and experts.

### WORK OF WHO

For over 50 years WHO has contributed significantly to Thailand’s national health development and capacity building, particularly in the areas of communicable disease control, eradication of smallpox, primary health care, development of human resources for health, maternal and child health, and basic health services.

WHO was instrumental in strengthening the planning capacity of the MoPH in formulating Thailand’s national health development plans. WHO is credited with having supported for over four decades the development of Thailand’s successful programmes on Expanded Programme on Immunization (EPI), essential drugs and malaria control.

The Roll Back Malaria (RBM) Mekong is a bi-regional (SEAR–WPR) programme located in Thailand. RBM Mekong aims to reduce by half the malaria burden over a period of 10 years (2001–10) by scaling up actions to roll back malaria through strengthening of partnerships, coordination and pooling of available resources.

In recent years, WHO has helped to plan and implement the control of HIV/AIDS, the Directly Observed Treatment, Short-course (DOTS) TB strategy, strengthen and support the Field Epidemiological Training Programme (FETP) and the Asian Collaborative Training Network for Malaria (ACT Malaria), the Healthy Cities Programme, health systems reform, health promotion, and research funding for the development of a dengue vaccine.

Currently, WHO is collaborating with the MoPH in the capacity assessment of Emergency Preparedness and Response (EPR) in Thailand. In collaboration with the MoPH, WHO is planning to adapt the Inter-Regional Training Course on “Public Health and Emergency Management in Asia and the Pacific (PHEMAP) in Thai context” and the Asian Disaster Preparedness Center (ADPC) is actively involved with WHO in preparing the curriculum.

The main WHO programmes are:

- Emerging and Re-emerging Diseases (HIV/AIDS, TB, malaria)
- Health Promotion
- Technical Cooperation
- Roll-back Malaria Mekong
- Tobacco Free Initiative
- Health Care Reform
- Border Health Programme

---

104 | From vulnerability to preparedness
The WHO Country Cooperation Strategy (CCS) for 2008–2011 (Draft) has been developed with high-level input from the RTG, UN Country Team in Thailand and all levels of WHO.

**Focus of WHO collaboration in Thailand**

WHO cooperation with Thailand is based on the WHO Country Collaborative Programme, developed on a biennial basis. The current CCS 2004–07 was used as a framework, as well as guidelines for the development of the biennial programme budget and work plans in the 2004–05 and 2006–07 biennia. The Country Office has focused on supporting policy development, technical advice, and the development of norms and guidelines. In accordance with the 11th General Programme of Work (2006–15), the WHO Country Office in the current biennium focuses on the following areas of work:

- Communicable disease prevention and control, including epidemic alert and response
- Prevention and management of chronic and noncommunicable diseases, and health promotion
- Health research, evidence and health systems development
- Emergency preparedness and cross-border health
- Immunization and vaccine development
- Technical cooperation among countries
- Health and environment

Thailand has common borders with Myanmar, Laos, Cambodia and Malaysia. The biggest concern is the health of the people on the border with Myanmar and in the conflict areas of five southern provinces. There are many national and international NGOs working on migrant, labour and health issues along the Thailand–Myanmar border. Understanding and collaborating with these key players is important. This requires training and orientation on health-related issues, particularly for all field staff.

Currently, WHO’s Border Health Programme addresses the complex situation along the Thailand–Myanmar border through coordination, health assessments and technical assistance. For this, WHO works closely with the MoPH. The WHO EHA Programme is working closely with the Border Health Programme team in the overlapping areas between EHA and Border Health.

<table>
<thead>
<tr>
<th>FUTURE PLANS OF WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Strengthen WHO Thailand’s capacity on EHA with sufficient full-time staff.</td>
</tr>
<tr>
<td>- Facilitate the process of establishing an appropriate structure within the MoPH.</td>
</tr>
<tr>
<td>- Build the capacity of MoPH health staff at central, provincial and district levels through adaptation of international courses in the Thai context.</td>
</tr>
<tr>
<td>- Develop a WHO Thailand Contingency Plan for Emergencies.</td>
</tr>
<tr>
<td>- Represent the UNCT in providing humanitarian assistance and respond to EHA-related needs of the conflict-affected five southern provinces and affected communities living along the Thai–Myanmar border.</td>
</tr>
<tr>
<td>- Following the UN Humanitarian Response Reform and the cluster approach, WHO could lead the Health Cluster as a member of the UN Disaster Management Team (UNDMT)/Inter-Agency Standing Committee (IASC) Country Team.</td>
</tr>
</tbody>
</table>
There is a need for an appropriate structure in the MoPH to address issues related to EHA/HAC and WHO could assist in this area. Therefore, one of the main priorities of WHO Thailand is to work with various clusters in the MoPH to develop an appropriate structure with the provision of capacity development strategies for human resources.

5. [http://www.searo.who.int/LinkFiles/Country_Emergency_Situation_Profiles_Thailand_Country_Profile.pdf](http://www.searo.who.int/LinkFiles/Country_Emergency_Situation_Profiles_Thailand_Country_Profile.pdf)
10. For Maps of recent disasters in Thailand see [http://www.reliefweb.int/rw/rwb.nsf/doc404?OpenForm&start=1&count=100&key=1&ss=2&cc=tha&rc=3&fo=A525E4897FA3DED19EB30F5B87DB869D60=136mlv=500](http://www.reliefweb.int/rw/rwb.nsf/doc404?OpenForm&start=1&count=100&key=1&ss=2&cc=tha&rc=3&fo=A525E4897FA3DED19EB30F5B87DB869D60=136mlv=500)
13. [http://u3.whothai.org/EN/Section2/Section18.htm](http://u3.whothai.org/EN/Section2/Section18.htm)
Thailand: Hazard profile and disaster preparedness

CONTACT DETAILS

WHO Representative
Dr P. T. Jayawickramarajah
Permanent Secretary Building
no. 3, 4th Floor
Ministry of Public Health
Tiwanon Road
Muang
Nonthaburi 11000
Thailand

Telephone: 00-66-2-590-1524, 591-8198,
WR direct 590-1515
Fax: 00-66-2-591-8199
Email: jayawickramarajah@searo.who.int
Website: www.whothai.org

EHA Country Focal Point
Dr Arun Mallik
WHO Thailand
Bangkok

Phone: 00-66-2-590-1524
Mobile: 00-66-1-81921-5486
Fax: 00-66-2-591-8198
Email: mallik@searo.who.int
Emergency and Humanitarian Action
Country Report
Timor-Leste

BACKGROUND

The Democratic Republic of Timor-Leste is located in the eastern part of Timor Island with the western part belonging to the Republic of Indonesia as part of the East Nusa Tenggara province. It is bordered by the Wetar straits to the north and the Timor Sea in the South. From 1511 till 1975 Timor-Leste was a colony of Portugal. This was followed by Indonesian occupation for 25 years during which the Timorese continued to fight for independence through the guerilla resistance movement. This period was wrought with violence, human rights abuses and an estimated 200 000 deaths. On 30 August 1999, the East Timorese voted overwhelmingly in a historic referendum for independence. On 20 May 2002, after two years of an interim UN Transitional Administration, the country gained its independence.

Timor-Leste has a land area of approximately 14 610 sq.km with a population of 923 198 (Census 2004). Administratively, it is divided to 13 districts, 67 subdistricts, 498 sucos (villages) and 2336 aldeias (hamlets). About 49% of the population is below 15 years. It is one of the 10 poorest countries in the world. Available data indicate that 40% of its population lives below the poverty line. This situation is exacerbated by a low adult literacy rate (58.6%).

Timor-Leste faces challenges in reducing the high mortality and morbidity rates. The maternal mortality ratio (MMR) is estimated to be around 800 per 100 000 live births, while the infant mortality rate (IMR) is estimated to be 70–95 per 1000 live births. The under-five mortality rate (U5MR) is estimated at 125 per 1000 live births.¹

HAZARD PROFILE

Due to its geographical location (north of the subduction zone between the Eurasian and Australian plates), Timor-Leste is highly vulnerable to natural disasters such as earthquakes and associated phenomena such as tsunamis. The El Nino/Southern Oscillation (ENSO)-related weather anomalies are associated with droughts in this region, occurring in a cycle of every four to seven years. Timor-Leste is also prone to floods, landslides and erosion, resulting from the combination of heavy monsoon rain, steep topography and widespread deforestation. It is not prone to volcanic hazard, although volcanic ash from eruptions in neighbouring countries may cause both health and transport hazards. Cyclones have a low probability of occurrence (one per decade); however, the frequent tropical storms can be as devastating as cyclonic activity. Phenomena associated with earthquakes including tsunamis, ground-shaking amplification and soil liquefaction in different parts of the country.
Timor-Leste: Hazard profile and disaster preparedness

Natural hazards

- Flooding
- Landslide
- Flash flood
- Tropical storm
- Forest/Rural fire
- Drought
- Earthquake
- Tsunami
- Marine flooding
- Land degradation

Human-induced/technological hazards

- Road accidents
- Civil strife, violence, war and conflict
- Industrial accidents
- Exotic animal diseases
- Terrorism
- Air accidents
- Refugees and IDPs
- Crop pest infestations and disease outbreaks
- Maritime accidents

Health hazards

- Malaria (vivax and falciparum), with chloroquine- and fansidar-resistant strains have been documented.
- Tuberculosis is endemic and multidrug-resistant tuberculosis (MDR-TB) has emerged.
- Dengue fever and dengue haemorrhagic fever
- Potential for outbreak of diarrhoeal diseases due to fecal contamination of water
- Japanese encephalitis and other diseases due to arboviruses
- Acute respiratory infections
- Typhoid
- Cholera
- HIV/AIDS: Currently, the prevalence is low (0.03–0.06); however, vulnerability is high due to the presence of expatriates, high mobility of the population in and outside the country, and low awareness of HIV/AIDS among the population.
- There is a potential for an epidemic of avian influenza, especially if there is one in neighbouring Indonesia.

Humanitarian situation

Unrest started in the country in April 2006 following riots in Dili due to alleged discrimination within the army among Timor-Leste’s western and eastern regions. There were 600 striking soldiers, so-called “petitioners” (a third of the armed forces), who were sacked. The issue of regional division immediately influenced the general population throughout the nation.

A rally in support of the petitioner soldiers dismissed for deserting their barracks turned into rioting. In the ensuing clashes, 37 people were killed and 155,000 people, or 15% of the total national population, were driven from their homes. As a result, the first Prime Minister stepped down. Timor-Leste’s sovereign institutions welcomed offers of foreign military assistance from several nations. By 25 May 2006, Australia, Malaysia, New Zealand and Portugal sent troops to Timor-Leste, attempting to quell the violence.
As of April 2007, some 37,000 internally displaced persons (IDPs) are living in Dili, an increase of 8,000 since January 2007. The unrest and gang-related violence, which first surfaced in April 2006, led to the displacement of 178,000 people as well as the burning and looting of houses and public buildings including schools. Up to now, the crisis has claimed more than 100 lives, and more than 300 have been injured. The ongoing civil unrest in the lead-up to the presidential elections scheduled for 9 April 2007 and parliamentary elections in May 2007, and the extremely volatile security situation in Timor-Leste, have gravely affected people throughout the country. These will be the second polls held in the tiny nation since it gained independence in 2002.

Recent disasters
- March 2007: Outbreak of locusts affected more than 900 acres of rice and corn fields in two districts of Ermera and Bobonaro
- February–March 2006: Flooding in an enclave district (Oecussi)
- 2004: Flooding in the southern part of Timor-Leste (Viqueque, Manufahi and Covalima)
- 2002–03: Drought (El Nino) affected almost all of Timor-Leste
- March 02: Famine in the southern part of Timor-Leste (Manufahi, Ainaro and Suai)

National policies and framework
A National Disaster Risk Management Plan has been completed and is awaiting approval as policy by the Government. At present, any response to emergencies is based on Minister’s dispatches only.

Disaster management in the health sector
In the health sector, the Minister of Health as a member of the National Disaster Management Office (NDMO) has established a Working Group for the health sector. This group consists of the Ministry of Health’s (MoH’s) key departments and works in close coordination with other boards and offices of the MoH at all levels as appropriate, UN agencies, INGOs, NGOs, religious organizations and the private sector.

As a result of the lack of policies and legislations on emergency preparedness and response (EPR), most health staff has difficulty in coordinating and working together during crises. In addition, Timor-Leste has limited capacity in infrastructure, communications, transport and logistics, human resources and funding. Therefore, the health sector needs to formulate its own policy to be able to respond to the country’s needs.

Within the present MoH’s structure, at the Central Government, there is no unit established for EPR. Consequently, this task was delegated to the Specialized Services Unit Officer of the MoH’s Department of Non-Communicable Diseases. The terms of reference do not implicitly contain EPR, as the unit was mainly responsible for other areas such as tobacco control, medical evacuation and coordination of referral medical specialist’s services. In addition, under the MoH’s annual budget expenditure, there

EXISTING DISASTER MANAGEMENT STRUCTURE

In the health sector, the MoH as a member of the NDMO has established a Working Group for the health sector. This group consists of the Ministry of Health’s key departments and works in close coordination with other boards and offices of the MoH at all levels as appropriate, UN agencies, INGOs, NGOs, religious organizations and the private sector.

As a result of the lack of policies and legislations on emergency preparedness and response (EPR), most health staff has difficulty in coordinating and working together during crises. In addition, Timor-Leste has limited capacity in infrastructure, communications, transport and logistics, human resources and funding. Therefore, the health sector needs to formulate its own policy to be able to respond to the country’s needs.

Within the present MoH’s structure, at the Central Government, there is no unit established for EPR. Consequently, this task was delegated to the Specialized Services Unit Officer of the MoH’s Department of Non-Communicable Diseases. The terms of reference do not implicitly contain EPR, as the unit was mainly responsible for other areas such as tobacco control, medical evacuation and coordination of referral medical specialist’s services. In addition, under the MoH’s annual budget expenditure, there...
were no funds allocated for EPR, or in that of the other ministries. The Government budget for this purpose is allocated under Contingency and Humanitarian items, which can be accessed upon the Prime Minister’s approval. So far, funding has been supported by bilateral contributions, with a few international organizations as donors.

Disaster management in the non-health sector
The National Disaster Management Office (NDMO) is responsible for providing policy guidelines for disaster risk management to coordination bodies housed at the Ministry of Interior (MoI), and technical support to the civil society. The office also liaises with other Government agencies (e.g. other Ministries, Civilian Police, Fire Fighters), UN Agencies and NGOs for disaster-related activities. In case of disasters, the relevant ministries become the lead agencies (for example, during epidemics the MoH is the lead agency). The UN Peace Keeping Force (UNPKF), the UN Hospital/Medical Contingent, UN Agencies such as WHO, UNICEF, FAO, UN High Commissioner for Refugees (UNHCR) Liaison Office, International Organization for Migration (IOM) are participating agencies in the management of disasters whenever needed. However, in general, the MoI through the NDMO is the central agency.

The MoI assumes a National Disaster Coordinator’s role. An Inter-Ministerial Commission for Natural Disasters and a Steering Committee at the MoI are the main fora for developing new policies and providing broad-based advice to the Government.

The main actors in EPR are members of the National Disaster Risk Management Committee (NDRMC) which consists of:

- Prime Minister (Chair) and Minister of Natural Resources, Mineral and Energy Policies
- Minister of Interior (Deputy Chair)
- Minister of State Administration
- Minister of Planning and Finance
- Minister of State for Foreign Affairs and Cooperation
- Minister of Public Works
- Minister of Transport and Communications
- Minister of Defence
- Minister of Development
- Minister of Health
- Minister of Agriculture, Forestry and Fisheries
- Minister of Education and Culture
- Minister of Justice
- Minister for Labour and Community Reinsertion
- Secretary of State for Youth and Sports
- Secretary of State for Environmental Coordination and Territory and Physical Development
- Secretary of State for Coordination of Region II
- Secretary of State for Coordination of Region III
- Secretary of State for Coordination of Region IV
- Secretary of State Resident in Oe-Cusse
- F-FDTL Chief of General Staff
- PNTL Superintendent
- Secretary General of the Timor-Leste Red Cross Society (CVTL)
- Civil society representatives including women networks
- UNDP Country Representative and UN Office in Timor-Leste (UNOTIL) representative
In addition, the Minister or Secretary of State responsible for disaster risk management may appoint representatives of other organizations to the NDRMC, either for specific issues for a specific time, or for an indefinite period, or as observers.

**WORK OF WHO**

WHO provides technical assistance for the development and implementation of disaster management programmes in the health sector. A number of activities were carried out by WHO from January 2006 until April 2007 in collaboration with the MoH and other partners. WHO provided technical support to the MoH in responding to the humanitarian crisis by establishing a coordinating mechanism for curative and preventive health care, environmental health, and disease surveillance including epidemic preparedness and early warning and response for IDPs. Control measures to prevent disease outbreaks at a very early stage were put in place and eight Rapid Response Teams (RRTs) established. Entomological surveys carried out in IDP camps provided the opportunity to undertake appropriate vector control measures to prevent outbreaks of vector-borne diseases. WHO also arranged for supplies, drugs and diagnostic kits to combat any emergency and outbreaks including avian influenza.

During January–February 2007 there was a slight increase in the number of diarrhoeal cases among children in IDP camps. Health promotion and provision of safe water and sanitation were implemented with the collaboration of UNICEF and OXFAM (Australia). How long IDP camps will remain in the country is not known.

During the period of severe crisis, the advisors provided to the MoH by bilateral agencies such as AusAID and USAID were withdrawn for more than two to three months. WHO continued its support to the MoH. This has been highly appreciated by the MoH and the Government of Timor-Leste.

As the security situation in the country improved, WHO continued its planned activities in the health sector, with particular attention to national capacity development. WHO facilitated the introduction of disaster management during the training of trainers (ToT) for Health Centre and Management Leadership training (January 2006). The training contains a chapter on disaster management at health facility levels.

To equip Timor-Leste with the necessary technical guidelines, a manual on Community Emergency Preparedness and Response (CEPR) has been developed in Tetum and English. This was based on an assessment of country needs and country benchmarks proposed by WHO. This manual is meant for use at the community level for immediate action during a disaster. The CEPR manual is expected to be launched in May 2007. It targets community leaders, health-care workers, technical staff involved in EPR from the health and other sectors, as well as local government staff from various agencies, including NGOs.

**FUTURE PLANS OF WHO**

WHO will continue to play a crucial role in providing technical assistance to the MoH for EPR. In doing so, WHO has consulted with the MoH to develop plans for the next biennium which are in line with the Country Cooperation Strategy, 2004–08 between the MoH and WHO as well as with the country benchmarks. The plans for the 2008–09 biennium are as follows:
Timor-Leste: Hazard profile and disaster preparedness

- Strengthening the legal framework in health aspects of EPR
- Enhancing advocacy and awareness on the health aspects of EPR through the development of information, education and communication (IEC) materials for health workers and the general population
- Developing standard operating procedures (SOPs) on the health aspects of EPR for health workers and stakeholders at all levels of health facilities
- Providing technical assistance for the development of IEC materials (booklets, leaflets and posters) for health workers and the general population
- Providing technical support in supervising, monitoring and evaluating EPR activities
- Providing technical assistance to conduct mock drill exercises/simulations on EPR at the community level in disaster-prone areas
- Preparing a national EPR manual and plan for the health sector
- Developing legislation and SOPs on the health aspects of medical EPR by the health and other sectors, as well as stakeholders
- Conducting simulation exercises on medical EPR by the health and other sectors
- Capacity building by providing training/workshops for health staff at all levels of the health system on the various topics mentioned above.

**PRIORITY NEEDS**

- Capacity building in disaster management at all levels of the health system
- Development of legislation/policies
- Development of SOPs and technical guidelines
- Development of IEC materials targeting field staff, health volunteers and the community
- Mock drill/simulation exercises on health sector EPR.
CONTACT DETAILS

WHO Representative
Dr Alexander G. Andjaparidze
UN House, Caicoli Street, Dili, Timor-Leste
Office mobile phone: 00-670-723-1092
GPN Fax: 25003 (WHO Network Only)
Email: whodili@searo.who.int
aowr@searo.who.int

EHA Country Focal Point
Mr Luis Dos Reis
WHO Timor-Leste
Dili
Office mobile phone: 00-670-723-1092
Email: whodili@searo.who.int

---
