Contributions to the World Conference on Disaster Reduction
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Abbreviations
Every year people lose their lives, their possessions or their livelihoods in natural disasters. Poorer countries in particular are often set back years in their development by these terrible catastrophes. And we have reason to fear that in the future the destruction caused by extreme weather events will increase.

We do not have to accept these disasters as being unavoidable and cannot allow ourselves to do so. For they arise only when natural factors converge on an especially susceptible area. Often only human error or neglect turns a natural event into a natural disaster which brings great destruction in its wake.

By improving preventive measures we can protect human life and preserve material goods, facilitate growth, foster the wise use of natural resources and promote just social development.

The Federal Foreign Office has long been committed to encouraging academics and practitioners as well as politicians to make disaster reduction a particular focus of their attention and promotes exchange among the relevant players. In October 2003 Germany organised the Early Warning Conference II (EWC II) in Bonn. We are pleased that the international early warning platform proposed there commenced operations in Bonn in 2004. The Federal Government is providing financial support for its activities. Now the findings from EWC II must become even more firmly anchored in international debate and be implemented specifically. This requires changes in legislation, the use of resources, education and business.

The Federal Foreign Office sponsors a large number of disaster reduction projects. They show that simple means can often result in considerable improvements, particularly in rural areas.

To ensure that disaster reduction is sustainable we need a long-term approach. The Federal Foreign Office will continue to support preventive measures and by funding pilot projects will help find new effective ways to protect people and their property.

The World Conference on Disaster Reduction in Kobe offers us the chance to take stock of international efforts in disaster reduction and to elaborate a plan of action for the next decade. Germany wants to grasp this opportunity. We intend to do what we can in future to reduce human suffering caused by natural disasters and their consequences.

The Federal Foreign Minister
Joschka Fischer
Hurricanes, earthquakes, floods and volcanic eruptions. Observers are always astounded by these spectacular images of nature’s violent forces being unleashed. Yet as the countless victims, the depth of human suffering and the devastating physical destruction caused by natural disasters gradually come into focus, this sense of astonishment turns into a feeling of perplexed powerlessness.

Whereas in the industrialised countries the physical damage is largely covered by insurance companies, government support and a national willingness to donate generously, developing countries are in most cases unable to manage the emergency unaided. The immediate damage is only the first link in a chain of negative impacts suffered by a vulnerable society. Natural disasters can cause – or exacerbate – poverty, under-nourishment, homelessness, epidemics and even armed conflicts. Disasters and crises often destroy years of development efforts, and constrain economic development. At the same time, poor economic development makes countries and societies all the more prone to disasters and conflicts. The link between disasters and development is now becoming increasingly clear. In many countries, natural disasters will hamper the achievement of the Millennium Development Goals (MDGs).

Yet in all these tragedies root causes often become apparent and it is now emerging that disasters are not inevitable. Often it is also human impact that leads to disasters, such as extreme urbanisation, deforestation and soil erosion, or lack of knowledge and awareness of the risk factors. This is where the activity area of disaster risk management comes in. Disaster risk management measures help protect people and property, improve chances for economic growth, and preserve natural resources.

The Second International Conference on Early Warning, hosted by the Federal Republic of Germany in Bonn in October 2003, discussed the need for improved early warning systems. As the Conference noted, in addition to improved technical measures, it is mainly socio-economic measures that can significantly reduce a society’s vulnerability.

German development cooperation has recognised this extremely important point of departure. We consider disaster risk management a cross-cutting task of development cooperation. Sustainable development can only be achieved by making disaster prevention an integral component of poverty reduction. And here too, as with crises caused by other factors, the principle applies that vulnerable societies can only develop true strength from within themselves. We have therefore made it our task to help facilitate and promote such processes. Through a consistently participatory approach, all actors and stakeholders are involved in planning and implementing a joint path forward. This often goes hand in hand with an overarching goal of political and social transformation.

The slogan of the World Conference on Disaster Reduction, to be held in Kobe in January 2005, is “A safer world for all”. This goal can only be achieved through joint efforts by poor and rich countries. The present brochure reflects the diversity and wealth of ideas that shape German development cooperation’s support for disaster risk management. Expect no spectacular images. This work requires cautious and persistent work. It will have succeeded if these images are not there to be seen.
The first World Conference on Disaster Reduction, which took place in Yokohama 1994, was a milestone event and represented a midterm review in the International Decade for Natural Disaster Reduction. The conference drew the attention of scientists, practitioners and policy makers to the fact that social aspects of human society are key factors to be considered when dealing with disaster reduction. In the following ten years the focus moved from preparedness towards long-term mitigation activities and from the focus on hazards to a discussion about the vulnerability of societies. The World Summit on Sustainable Development in Johannesburg (2002) and its outcomes clearly made a link between the achievement of sustainable development and the implementation of effective disaster reduction.

At the second World Conference on Disaster Reduction experts, policy makers and representatives of civil society are gathering from all over the world to review the achievements made since Yokohama and to set out a new strategy for the next decade. The international community has realised that many aspects of the Yokohama Strategy and Plan of Action for a Safer World still remain to be implemented. However, while some progress has been made during the past decade, figures showing increased losses associated with natural disasters clearly indicate that we are not moving fast enough. The vulnerability of human societies is increasing rapidly, not only in developing countries but also in industrialized countries. This trend might even be exacerbated by the effects of climate and global change.

While we know a lot about the underlying causes of human vulnerability and the options available for reducing the threats, very little has been implemented so far.

This was what prompted German institutions and organisations such as the Federal Office for Civil Protection and Disaster Response (BBK), the Federal Institute for Geosciences (BGR), the Global Fire Monitoring Center (GFMC), the Geo Research Center (GFZ), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), InWEnt and their partners all over the world to join forces and focus their contributions on the topics of resource development and governance. Their efforts have been coordinated by the German Committee for Disaster Reduction (DKKV) and supported by the German Federal Government. Following the example of the Second International Conference on Early Warning, these activities are designed to implement disaster reduction and integrate it into public policy.

The World Conference on Disaster Reduction in Kobe provides a unique opportunity to create the momentum for political commitment to implementing disaster reduction strategies.

We hope that the Conference will endorse realistic, concrete and measurable targets for the necessary follow-up. At the upcoming major event on the implementation of the Millennium Development Goals (MDG) in autumn 2005 the outcomes of Kobe could pave the way to inherently interlinking disaster reduction and establishing it as a cross cutting issue, thus providing a prerequisite for the successful implementation of the MDG.

We are pleased to present the summaries of the different contributions provided for the World Conference on Disaster Reduction by various organisations and institutions of Germany.

We trust that our inputs will contribute to the success of the conference.

Dr. Irmgard Schwaetzer
Chairperson
DKKV
German organisations and institutions working in the field of disaster risk reduction responded very positively to the announcement for the World Conference on Disaster Reduction (WCDR). The Federal Foreign Office called for a first preparatory round table meeting in April 2004. Representatives of the relevant ministries, governmental and non-governmental organisations and scientific institutions were invited.

The participants agreed upon a coordinated approach to develop a coherent presentation of the German contribution to disaster reduction for the WCDR. The German Committee for Disaster Reduction (DKKV) – the National Platform for Disaster Reduction within ISDR – was asked to serve as coordinating entity.

The outcome of this coordinated effort is unique. Eight organisations and institutions actively working in disaster risk reduction at national and international level – including academia – with more than 35 contributing experts from Afghanistan, El Salvador, Germany, Honduras, India, Indonesia, Mozambique, Peru, Tanzania, Thailand and Zimbabwe prepared their presentations coherently and collaboratively thanks to the financial support of the Federal Foreign Office and the Federal Ministry for Economic Cooperation and Development.

The projects presented to the public in the Open Forum include
- posters and publications
- an exhibition booth, run jointly by all partners
- a workshop on human resource development and the utilization of technology for disaster risk reduction, presenting capacity building practices from five countries.

Thematic Sessions on
- National Platforms within ISDR
- Local Governance and its relevance on disaster risk reduction
- Cost benefit analysis
will be organised and presented in the Thematic Segment.

Individual contributions on
- The Global Wildland Fire Network
- Risk Monitoring
- Early Warning
- Critical Infrastructure
are part of sessions organised by agencies like the United Nations University and the ISDR Platform for the Promotion of Early Warning. Altogether organisations from Germany are contributing to more than ten panels and sessions at the World Conference on Disaster Reduction. Inputs are provided to four of the five thematic clusters.

The thematic sessions and the public forum workshop are organised in cooperation with partner institutions from developing countries. In many cases, the sessions are organised by a lead agency, but represent the know-how and the expertise of the other partners as well.

On the following pages of this publication, which was produced thanks to the financial support of the Federal Foreign Office, the reader will find more detailed outlines on the workshop, the sessions and the posters. The views expressed in this publication are the ones of the agencies preparing the respective sections and do not necessarily reflect the views of the German Committee for Disaster Reduction or the Federal Foreign Office.
**Background**

For large parts of the world’s population, natural disasters lead to crises with dire consequences. Decades of development efforts can be ruined in the shortest time. In terms of loss of human life, 97% of natural disaster damage arises in developing countries.

It is not appropriate to concentrate only on impact mitigation. Efficient **disaster reduction** is the only way to counter such developments. By launching its International Strategy for Disaster Reduction (ISDR) in 1999, the United Nations has underscored the international importance of disaster reduction. Germany, represented by its Foreign Office, has formulated its objectives at the national and international level in its “Concept for disaster reduction after the IDNDR decade”.

The Review of the Yokohama Strategy and Plan of Action for a Safer World emphasizes the importance of **capacity development**: “Capacity-building features in many commentaries as another crucial element for realizing disaster reduction objectives.”

Disaster reduction is an integral part of several of InWEnt’s capacity building areas, such as Crisis Reduction and Peace Keeping, Health (esp. HIV/AIDS), Good Governance, Natural Resources Management and Food Security. The development of dialogue and capacity development strategies is derived from comprehensive and participatory needs assessments. Training needs are translated into training modules. InWEnt’s human resources development programmes for disaster risk reduction aim to build the institutional capacities of the authorities and institutions that are directly or indirectly responsible for disaster reduction and management. Training, seminars and structured dialogue are designed to enable them to prevent catastrophic impacts of extreme natural events, protect human lives and minimize environmental and material damage.

Capacity Development stands for human resources and organisational development. Processes of organisational and institutional change towards greater effectiveness in the field of disaster management and reduction are supported through dialogue, training and advice for professional and management staff at individual, organisational and societal level.

Capacity development can also take the form of the transfer of technological know-how and related technology to disaster-prone regions. A presentation and discussion of the possible contribution of technology, the use and implementation of technological know-how by national and regional disaster reduction initiatives/networks in developing countries, focusing on the example of Thailand, will illustrate this point. One key question is how technological know-how and technology can be integrated into local concepts. The broad variety of aspects included under the heading of capacity development is demonstrated by the different stakeholders of the session.

Any form of capacity development in disaster risk reduction should contribute to the reduction of the vulnerability of the respective society and increase its resilience. Thus, capacity development is an important instrument for the implementation of effective disaster reduction measures at all levels. This importance is reflected by several references made in preparatory documents to the conference, especially those linked to the thematic clusters “Governance: institutional and policy framework for risk reduction” and “Knowledge management and education: building a culture of resilient communities”.

*Policy Dialogue Januar 2004 in Kunduz*
Structure of the Side Event
After a short introduction, representatives from different organisations and levels will present country experiences and experiences gained in regional networks for disaster risk reduction. The different backgrounds and settings of participants will provide an extensive overview of approaches for capacity building initiatives in disaster management from different country and institutional perspectives. The experts will discuss appropriate strategies, instruments and indicators for sustainable human resource development and capacity building.

Some key questions are:
- What do we understand by Capacity Development and Human Resources Development in Disaster Risk Reduction?
- What are the main requirements and challenges: Where and why is capacity development needed for disaster management?
- What are the existing human resource development initiatives or concepts in the different countries represented by experts?
- What is the framework for their implementation?
- What is required on the technical and the political level to implement effective capacity development programmes?
- What are the special requirements at the local, provincial, national or international level (e.g. integration of traditional knowledge, policy dialogue, etc.)?
- How can the international development community support the less developed countries in developing effective disaster risk reduction by capacity building?

Panel participants:
Good practice examples

Dr. Langa, National Director, INGC, Mozambique
INGC – National Disaster Management Institute – is the main coordinating institution for disaster reduction and disaster management in Mozambique at national and provincial level. Since 2002 it has been implementing a broad capacity building programme for human resources development from national and provincial down to district level, involving INGC staff, members of the Technical Council (representatives of the ministries) and representatives of NGOs, supported by UNDP and InWEnt. The major training programme includes training in awareness-raising for disaster risk reduction, information management, the role of the media, data management, national contingency planning and dialogue. INGC has experience in extending a national HRD programme to a regional/international level.

Rakesh Dubey, Director of the Disaster Management Institute (DMI) in Bhobal, India:
Education, training and consultancy are the main activities of the Disaster Management Institute, Bhobal. The Institute is working with foreign donor agencies like NORAD, GTZ, InWEnt, UNICEF, World Bank, etc.

In November 2002 the Ministry of Environment & Forests, Government of India selected the Disaster Management Institute Bhobal as an ENVIS (Environ-
Prevent man-made and natural disasters. The main function of the Civil Protection Unit is to coordinate preparedness for natural disasters, to react in the event of emergency and also to implement measures for reduction and mitigation of extreme natural hazards.

Experiences from a quite advanced civil protection system in Zimbabwe, as well as experience in regional approaches and network building will be presented. The institution also takes part in the regional network and SADC working group for human resources development coordinated by InWEnt and INGC.

**Maria Bilia, Prime Ministers Office, Department for Disaster Management, Tanzania**

With UNDP assistance, Ms. Bilia’s department has developed a national disaster management policy and facilitated a legislative act. The Department for Disaster Management (DDM) carried out a training needs assessment and risk assessment/vulnerability analysis and developed a framework for a disaster management plan. The DDM also has wide experience with public awareness programmes.

The contribution will highlight requirements for disaster management in Tanzania, including strengthening the Disaster Management Department through training, preparing sectoral, regional and district-level disaster management plans, inventorying resources; mapping temporary shelter areas and sources of relief goods; public awareness, and establishment of national and regional emergency committees. Information on the SADC working group established in Pretoria in August 2004 for the development of a trans-boundary training programme for the SADC region in information management in cooperation with InWEnt and INGC will be provided.

**M.S. Pawadyira, Director Civil Protection Unit, Zimbabwe**

As Director of the Civil Protection Unit, Mr. Pawadyira has substantial experience in disaster management at the national and regional level. The principal task of the Director, authorised by the Civil Protection Act, is to take responsibility for national contingency planning, disaster management and activities to prevent man-made and natural disasters. The main function of the Civil Protection Unit is to coordinate preparedness for natural disasters, to react in the event of emergency and also to implement measures for reduction and mitigation of extreme natural hazards.

Experiences from a quite advanced civil protection system in Zimbabwe, as well as experience in regional approaches and network building will be presented. The institution also takes part in the regional network and SADC working group for human resources development coordinated by InWEnt and INGC.

**Dr. Nadjib Yussufi, Political Adviser, Germany/Afghanistan:**

Mr. Yussufi is an experienced political adviser in the Human Resource Development Programme in Disaster Reduction for Afghanistan, implemented by InWEnt and in co-operation with UNAMA. He is experienced in policy dialogue at the national and provincial level.

Policy dialogue is a fundamental part of the Capacity Building Programme for Disaster Reduction in Afghanistan: Building national networks that bring together representatives from all DRM-related institutions from the national and sub-national level, as well as academic and training institutions, bilateral and international organisations and related NGOs is one of the major challenges for the establishment of an effective disaster management and disaster reduction system. The focus will be set on the experience gained in supporting the establishment of a national disaster management and reduction sector in a country that has been hard hit by a long history of wars. The disaster management sector practically has to be re-established starting from scratch.
Mrs. Jozcabet Guerrero, GTZ-Trifinio, El Salvador
Mrs. Jozcabet Guerrero is an expert in disaster risk management. She has worked in the field for many years – especially for GTZ. Her focus is on raising public awareness and on training experts at the local and sub-national levels. To spread and share her extensive experience she has undertaken consultancy work in Mozambique and other countries. Mrs. Jozcabet Guerrero will contribute to the panel discussion by stating the challenges and demonstrating good practice examples in capacity development at the local level. Furthermore, she will highlight similarities and differences between capacity development in El Salvador and countries with other social and political backgrounds.

Mr. Aloysius Rego, Asian Disaster Reduction Center (ADPC), Thailand
Mr. Rego has been head of the Disaster Management Systems Division at ADPC since November 1999. The DMS Unit is currently implementing a programme for Capacity Building in Disaster Preparedness within the context of GTZ support to the Flood Management Programme of the Mekong River Commission (MRC) in Laos, Vietnam and Cambodia.

Prior to his current post, Mr. Rego served as a Senior Manager of ADPC Learning and Professional Development activities and managed ADPC’s technical assistance programmes for countries of the region.

Mr. Worawoot Tantiwanit, Department of Mineral Resources (DMR), Bangkok, Thailand
The Department of Mineral Resources represents a government agency applying geo information and geological knowledge to help improve quality of life and economic and social development. The DMR serves the country by preservation, conservation, rehabilitation and management of geological and natural resources via geological and mineral resources exploration and evaluation, defining and managing mineral resource preservation and conservation areas.

The presentation will discuss the ongoing Thai-German cooperation to introduce advanced remote sensing techniques. One successful activity arising from the Thai-German cooperation and integration was the development of “Landslide Hazard Maps” for the whole country. Furthermore, the Thai experience concerning the translation of expert knowledge into effective directives and guidelines for the population in risk areas will be presented.

Prepared by: InWEnt
Dr. Christina Kamlage, Susanne Breuer
www.inwent.org
National Platforms within ISDR

Rationale
At the World Conference on Natural Disaster Reduction in Yokohama in 1994, during the midpoint assessment of the International Decade for Natural Disaster Reduction (IDNDR), it was stated: “Equally, the creation of the organisational framework called for by the General Assembly, which includes National Decade Committees ..., has laid the basis for an intensified preventive and preparedness effort in the second half of the Decade;” (see: Yokohama Strategy and Plan of Action for a Safer World B. Assessment of the status of disaster reduction midway into the Decade, 3).

The Plan of Action recommended: “As appropriate, establish and/or strengthen National Committees for the Decade ...” (see: Yokohama Strategy and Plan of Action for a Safer World II. Plan of Action 11.5.).

At the end of the IDNDR when the successor arrangement, the International Strategy for Disaster Reduction (ISDR) was established, the Secretary General of the United Nations requested “Governments to maintain and strengthen established national and multi-sectoral platforms for natural disaster reduction in order to achieve sustainable development goals and objectives, with the full utilization of scientific and technical means.” He also stated in his report that: “Given the success of national committees and focal points for the Decade in a large number of countries, the Secretary General strongly encourages all Governments to take the necessary measures to implement this appeal. ...” (See Secretary General’s Report to the UNGA, 1999, A/54/497, para. 32). In GA Resolution 58/215 (27 February 2004) governments were encouraged “to establish national platforms or focal points for disaster reduction, and to strengthen them where they already exist”.

A key goal for ISDR, which generally aims to reduce the impacts of natural and related technological and environmental hazards, is the development of multi-sectoral and multi-stakeholder national platforms for disaster risk reduction (DRR).

The establishment and evolution of such platforms can serve to demonstrate political commitment and provide a basis for wider institutional involvement in making disaster risk reduction a relevant national interest.

National Platforms for Disaster Reduction in Europe
National Platforms are indeed concrete manifestations of political willingness and institutional recognition of disaster risk reduction as a relevant issue within the framework of national interests. National Platforms can work to involve different players in ISDR activities. For instance, the various ministerial departments, agencies, institutions, organisations, civil society and individuals working for the advancement of disaster reduction can be drawn into the process, so that each Member State is able to play an ever-increasing role in connection with the ISDR’s work, particularly in the formulation and execution of its programmes.

The way National Platforms are organised and the way they are operating varies considerably. In some instances, national platforms play a major role in promoting DRR as an international issue (Germany). In other cases, they play a major role in addressing the needs for DRR within their own countries (as in many developing countries). In some countries there is a combination of these roles focusing on national and international issues (Switzerland and France) and some countries focus on cooperation and coordination.

Each country needs to determine the best approach for its national platform for disaster risk reduction. The aim of this platform, depends on the
prevailing economic, social, political and ecological circumstances in that particular country.

At the European level, where several National Platforms for Disaster Risk Reduction exist, the National Platforms have begun to establish networks with each other in order to make use of synergies and to coordinate their activities at the regional and sub-regional level, and through bilateral and multilateral cooperation in disaster reduction, particularly through the joint formulation and execution of programmes.

The National Platforms for Disaster Reduction (within ISDR) in Europe recognize that there will be only one officially designated National Platform per country according to the regulations of the International Strategy for Disaster Reduction.

They recognize that the officially designated National Platform is the focal point for all aspects related to disaster risk reduction in the given country.

**Added Value**

The overall structure of the International Strategy for Disaster Reduction has the potential to generate added value because of the inherent link between the United Nations system and national and governmental structures. The structure combines contacts within the UN with direct links to governmental systems at the national level. By creating these links, the National Platforms can generate mutual benefits, primarily in the areas of advocacy, fundraising and partnerships.

Models of cooperation and coordination can be developed within the framework of the global strategy suggested above. In 2003 national platforms not only brought about the organisation of major events – in close cooperation with UNISDR – (Euro Mediterranean Forum on Disaster Reduction, Madrid; International Early Warning Conference II, Bonn), but also mobilised remarkable amounts of additional financial support for the events, thus underlining the potential of such cooperation.

National Platforms can serve to provide the fora for a broad based dialogue among the relevant sectors, public agencies and civil society as well as for policy coordination at the national level. Networking among national platforms provides an added value by increasing the lobbying capacities within the region through direct access to regional political structures.

**National Platforms of ISDR within Europe call for:**

- Governments to establish and/or strengthen national platforms as part of regional networks as intersectoral, interdisciplinary and interministerial structures in each Member State by 2015.
- Governments to provide the necessary resources to support the implementation of the Work Plans of National Platforms.
- The ISDR to develop a global strategy for national platforms, that is not only based upon the development of relevant regional structures but also works in close cooperation with existing national platforms.
- National Platforms to increase information exchange and to establish regional networks of national platforms in every region by 2015.

*Prepared by: DKKV  
www.dkkv.org*

*Floods frequently destroy rice crops and thus threaten the basis for living of farmers in the lower Mekong Basin*
Local Governance: Preconditions for Effective Disaster Risk Management

Background
Good Governance is a precondition for effective disaster risk management. Good Governance provides the foundation for disaster risk management becoming a sustainable process and also an effective instrument for poverty alleviation and to achieve the Millennium Development Goals. Good Governance not only concerns the national level, but also the regional and the local level. Concerning disaster risk management, local stakeholders are increasingly involved and local actors are getting more and more responsibilities. Therefore, the session addresses the issues Local authorities and municipality policies for risk reduction, Community action and participation and Transparency and accountability.

The session will:
• present and discuss key elements for municipal responsibility (Local Good Governance) in favour of effective Disaster Risk Management
• present good practice examples to foster Local Good Governance for disaster risk management
• identify future challenges and aspects requiring further discussion

Structure
The session will analyse which elements of Local Governance are of special interest for disaster risk management and will present good practice examples, from the municipality, national and NGO points of view.

After a short introduction representatives from different organisations and levels (municipality, NGO, national institutions) will present best practice examples from Africa, Asia and Latin America on how to improve Local Good Governance for disaster risk management. Each contribution will focus on a different aspect or point of view and be followed by a brief discussion.

Some of the discussed aspects include:
• Municipal responsibility for DRR aiming at a sustainable development and poverty alleviation
• Participation of community, civil society and private sector in order to foster transparency and accountability for decision making and implementation processes
• Integration of risk management in municipal development (legislation, assignment of responsibilities and resources)
• Integration of local disaster risk management into the national institutional and political framework

Burned area close to Pinheiro Grande, Central Portugal, mapped by IKONOS on August 17, 2003
Planned contributions

Adress of welcome
Mr. Horst Müller, Head of Division Emergency Aid, German Ministry for Economic Cooperation and Development (BMZ)

Thematic Introduction

Mrs. María Olga González, Bureau for Crisis Prevention and Recovery, United Nations Development Programme (UNDP-BCPR)
The introduction addresses, the main responsibilities of local governments concerning disaster risk management. The necessity for Local Good Governance is explained. The main obstacles will be mentioned and the essential questions for the session presented.

Good practice examples

Mr. Lucas Renço, District Administrator of Búzi District, Mozambique
Mr. Renço will present the process of introducing disaster risk management in his district since the disastrous floods of 2000 and 2001. He will describe the role and – formal and informal – responsibilities the local authorities has in order to achieve an effective and sustainable disaster risk management at the local level.

Mr. Oscar Alcántara, Civil Society, Atlántida departamento, Honduras
In Atlántida in Honduras, disaster risk management is introduced at the local level using a highly participative approach. Mr. Alcántara will present the advantages of a broad participation in Early Warning and other risk reducing measures and the demands for Local Governance, seen from the civil society point of view.

Mr. Mohammed Pashtun, Governor of Kandahar Province, Afghanistan; former Minister for Urban Development
Local Governance for disaster risk management cannot be seen in an isolated way. It is essential that local disaster risk management is forming part of a national system which provides a nationwide legal framework and support. Mr. Pashtun, who is familiar with disaster risk management at the national, provincial and local level, will present how Local Governance for disaster risk management is seen and fostered in Afghanistan.

Prepared by: GTZ
www.gtz.de/disaster-reduction

A collapsed house in the surroundings of Kabul.
Building a culture of prevention is not easy. While the costs of prevention have to be paid in the present, its benefits lie in a distant future. Moreover, the benefits are not tangible; they are the disasters that did NOT happen. (Kofi Annan 1999)

**Background**

The economic efficiency of disaster risk management measures and the allocation of resources is a vital issue for moving disaster reduction forward. Cost-benefit analysis is a useful tool to measure the possible impact of disaster risk management scenarios. Consequently, the cost benefit ratio of different disaster mitigation options can be assessed to identify the most efficient option. By analysing where the costs and benefits occur it is also possible to identify the appropriate allocation of resources.

In general, investment in disaster risk management (DRM) shows comparatively high returns at the micro, meso and macro level. Disaster prevention measures, mitigation and risk transfer reduce not only the direct effects of disasters, like destruction, damage and loss of goods, but also the indirect effects, such as discontinuity of production, poor services, vulnerability, protracted relief and conflicts. Therefore, the losses that could have been prevented by disaster risk management measures can be seen as benefits and as return from the investment into preventive measures. GTZ has developed a methodology to establish guidelines for conducting a cost benefit analysis for disaster risk management and particularly to determine the cost benefit ratio. This approach has already been field tested in Peru and Indonesia where several mitigation measures have been evaluated.

Cost-benefit analysis in the context of disaster risk management is a new and very sophisticated tool. This session provides the opportunity to discuss the methodology and guideline with an expert from the International Institute for Applied Systems Analysis in Austria and practitioners from Indonesia and Peru.

**Structure**

In the session the methodological approach for the cost-benefit analysis will be introduced (preconditions, scope, options), project examples from Indonesia and Peru will be presented and findings and lessons learned discussed, focusing on developing countries. The session will

- raise awareness for economic rationality in disaster risk management
- outline the potential of integrating disaster risk into economic project appraisals by cost-benefit analysis and
- demonstrate the possibility of prioritisation of different preventive measures by means of cost benefit analysis.

**Planned contributions**

**Thematic Introduction:**

Mr. Reinhard Mechler is an economist and research scholar at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. His research focuses on the impacts and costs of natural disasters in developing countries and strategies to reduce these costs by prevention and risk transfer.

Quick and easily understood early warning messages can save lives
In 2004 Mr. Mechler elaborated the tool “Cost Benefit Analysis” for the GTZ advisory project Disaster Risk Management in Development Cooperation. In the session Mr. Mechler will focus on the methodological approach towards measuring the potential economic impacts of disasters. There are different methods which require specific data concerning the hazard (like magnitude, recurrence rate) and the potential loss. Therefore, the method has to be adapted to the given conditions within a specific area. The same applies to the evaluation of the costs of preventive measures. Thus, the value and significance of the comparison between cost and benefit (prevented losses) varies due to the data quality.

**Partners and their contributions:**

**Mr. Milton von Hesse la Serna** is Director General for Public Sector Planning in the Ministry of Economics and Finance in Peru.

The objective of the presentation of Mr. von Hesse is to demonstrate how issues of economic efficiency are integrated into investment decisions made by the Peruvian government. He will highlight the importance of the tool cost-benefit analysis for the best allocation of financial resources, also in the context of disaster risk management. He will also speak about the preconditions and the limitations of integrating the results of the economic assessment into political decisions.

**Mr. Sugeng Triutomo** is head of the Natural Hazard Management Office in the National Coordination Board for Disaster Management (BAKORNAS PBP) in the Ministry of Social Welfare. BAKORNAS is the governmental coordination board for disaster management activities, also focusing on disaster prevention.

Mr. Triutomo will present the findings of the cost benefit analysis conducted in Semarang, Indonesia. Different risk reduction options that could prevent the city from steady flooding due to land subsidence were analysed for their cost benefit ratio. Mr. Triutomo will also address the challenges and opportunities which cost benefit analyses face as a decision support tool in natural hazard management. He will provide recommendations for implementing the results of the analysis into the decision-making process.

The **ProVention Consortium** intends to contribute to the session by presenting the new study “Measuring Mitigation: Methodologies for Assessing Natural Hazard Risks and the Net Benefits of Mitigation – A Scoping Study” elaborated by Charlotte Benson and John Twigg.

**Prepared by:** GTZ

[www.gtz.de/disaster-reduction](http://www.gtz.de/disaster-reduction)

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*Adaption of crop to extreme seasons reduces the vulnerability*
Vulnerability of Modern Societies to Natural Disasters: the Impact on Critical Infrastructures

Critical infrastructures (CI) are organisations and facilities that are important for the national community and whose breakdown or degradation would result in sustainable supply shortages, considerable disturbances of public security or other dramatic consequences.

The most important CI are energy, water and food supply, information and communication technology, health care and traffic systems, economy and commerce, administration services and important buildings.

Natural disasters can affect humans and damage or demolish buildings and infrastructure. The amount of damage depends on the extent of the event, the effectiveness of preventive measures and the degree of vulnerability.

Modern societies are entirely based on well-functioning infrastructure networks. All cornerstones of public life are designed to accommodate a forecasted demand, but both performance and demand may be affected by natural disaster consequences. The vulnerability of CI is caused mainly by large supply networks and strong interdependencies.

Examples from Western Europe, especially Germany, like the hurricane “Lothar” in December 1999, the “Elbe flood” in August 2002 and the “summer heat wave” in 2003 show those impacts.

For about two weeks the hurricane “Lothar” caused energy and telecommunication breakdowns for more than 100,000 people in Southwest France. The restoration of the energy infrastructure and power lines in France cost 2.5 billion euro. In Southern Germany, the hurricane destroyed huge forest areas, but did not hit CI. Successful construction norms (DIN) led to only minor damages to buildings.

Due to the “Elbe flood” energy and telecommunication broke down for several days in parts of Eastern Germany, especially in the city of Dresden. Several hospitals had to be evacuated. Shortages in drinking water and food supply occurred. The water supply could only be managed due to redundant systems. The railway system was severely damaged, which led to breakdowns of the public transport system for several weeks. The reconstruction of damage to the railway system was estimated at more than 1 billion euros. Preventive measures helped to avoid severe damage to most of the important cultural buildings in Dresden.

The heat wave in 2003 had several impacts on CI in Western and Southern Europe: extremely low water levels of rivers restricted shipping, leading to a drop in trade. Water temperature of many rivers became too warm to efficiently supply the cooling systems of power plants. In some areas where surface water is used for generating drinking water, the availability was limited and quality decreased. Additionally, the demand for water and energy increased dramatically due to the intense use of air conditioning systems and water consumption for gardening. Breakdowns of energy supplies occurred in several countries, like Switzerland and Italy.

The examples concerning Europe and especially Germany show how vulnerable modern societies and their sophisticated but sensitive CI are to natural disasters. National prevention measures for preparedness and for reducing are needed. Various approaches for protecting CI have been started nationwide to address this new national priority.

Prepared by: Federal Office for Civil Protection and Disaster Response www.bbk.bund.de

Elbe flood extent near Torgau (Germany)
The dramatic increase in worldwide losses due to natural disaster shows that disaster risk is a dynamic parameter, which may change significantly within a few years. Thus, any economically warrantable measure of protection and any regional planning, especially in fast growing urban areas, has to be based not only on existing quantitative risk assessment, but also on risk monitoring and prediction of its future development.

Risk results from the interaction of hazard and vulnerability, where hazard represents the likelihood of occurrence and potential severity of a natural extreme event and vulnerability is a measure for our society’s social, economic, political and physical susceptibility to the event. While quantitative mapping of natural hazards has been pushed ahead to a certain extent during IDNDR, comparable efforts have not been made with respect to assessing vulnerability and the resulting natural risks. However, their drastic increase, especially in developing countries as a consequence of rapid population growth and urbanization, is the most important reason for the observed explosion of damage due to natural disasters worldwide. We therefore suggest that within the framework of ISDR each country should provide step-by-step measures, not only for quantitative assessments of natural risks but also for mechanisms of risk monitoring and prediction of future risk development. This activity could be promoted by integrated modeling platforms to be established for sustainable country and/or city development. In order to homogenize this process on a global scale, the activity should follow international guidelines to be worked out in with the framework of ISDR. We suggest that the newly established International Early Warning Platform of ISDR should act as a focal point for this task.

Prepared by: GFZ Potsdam
Prof. Jochen Zschau
www.gfz-potsdam.de

Training of project staff and local institutions
Investigation of Mud Flows: Test Site in Kazakhstan

Debris flows are among the most dangerous and destructive natural hazards that affect the population and infrastructure. They consist of a mixture of poorly sorted rocks, mud and water that can flow like liquids downslope. Wherever they occur, they cause fatalities, damage structures and diminish land productivity.

Unfortunately, the physics of debris flows is incompletely understood and has to be further investigated in order to improve hazard assessment and mitigation.

One feasible protection method is to keep endangered areas free of buildings and infrastructure. For existing settlements a second approach includes the construction of barriers to stop or deflect debris flows. The knowledge of the forces and properties involved in debris flows is a prerequisite for properly constructing such barriers.

In 2003 the Emergency Agency of the Republic of Kazakhstan reopened a test field in mountainous terrain near Almaty for the artificial initiation of debris flows with a volume of about 100 m³ per second. This unique field allows scientists to devise special tests to study the physics of debris flows.

In 2003 the Emergency Agency of the Republic of Kazakhstan reopened a test field in mountainous terrain near Almaty for the artificial initiation of debris flows with a volume of about 100 m³ per second. This unique field allows scientists to devise special tests to study the physics of debris flows.

The Federal Institute for Geoscience and Natural Resources (BGR) participates in these tests and develops specially designed instruments. An artificial boulder, filled with special sensors, is under development and will be incorporated into these debris flows to measure the forces involved.

First field tests have been accomplished in the Schesa Tobel of Austria. The test results implicated necessary modifications regarding data storage and recovery of the artificial boulder which are currently being implemented.

Prepared by:
Federal Institute for Geoscience and Natural Resources (BGR)
www.bgr.de

Opened artificial boulder with the central unit
The Department of Mineral Resources (DMR) of Thailand and the German Federal Institute for Geosciences and Natural Resources (BGR) have been collaborating since the mid 1970s. The current Thai-German technical cooperation project “Environmental Geology for Regional Planning” covers various geological issues, such as severe environmental problems caused by progressing soil salinity in Northern Thailand, hazards caused by flooding, and hazards due to land subsidence in the greater Bangkok area. In addition to mapping and monitoring, major tasks of the projects involve capacity building. This includes setting-up state-of-the-art facilities for handling, processing and interpreting remote sensing data, as well as training the staff of the counterpart organisation.

The BGR’s contribution to the public forum refers to selected subjects of this technical cooperation with Thailand. These technical topics are:

- Using Differential Interferometric Synthetic Aperture Radar (D-InSAR) based on ERS-1/2 satellite data for detecting land subsidence in the metropolitan area of Bangkok.
- Using Landsat 7 satellite imagery and elevation data provided by the Shuttle Radar Topography Mission (SRTM) for mapping flood-prone areas in the Greater Nahkon Ratchasima city area.
- Using Landsat TM/ETM and ASTER satellite data for detecting and mapping soil salinization in NE-Thailand, which severely affects the environment and economy.

The output data are used to improve detection and management of these hazards, to support land planning in hazardous areas and to develop appropriate mitigation measures.

Prepared by:
Federal Institute for Geoscience and Natural Resources (BGR)
www.bgr.de

The Landsat TM satellite image covers an area of about 50 by 60 km in northeast Thailand and shows large part of the flooded area (dark color).
Gunung Iya is an active volcano (A-type) located on a peninsula only a few kilometers south of the city of Ende on Flores Island, NTT. Although the 50,000 inhabitants of Ende are well protected from pyroclastic flows by natural barriers, ejectives and heavy ash fall might still endanger large parts of the city, as happened during the last major eruption in 1969.

In addition, a geology team identified a significant crack that runs all around the active crater, which indicates the unstable portions of the volcano. It is feared that in case of an eruption, this part of the mountain might slide into the sea, causing a giant Tsunami endangering the low lying parts of the Flores south coast as well as nearby Pulau Ende.

In order to quantify the risk for the local population, a computer simulation of a collapse of the mountain was run: It appears that about 150,000,000 tons of rocks are prone to slide into the sea. As a consequence, a Tsunami wave several tens of meters high might reach the west coast of Pulau Ende.

Likewise, the likely extent of ash fall was modeled. Based on this approach a map was drawn which indicates the extent of risk affecting different areas.

Probably the most important step to reduce the risk for the population of Pulau Ende is to inform local decision makers and the population about the situation they are living in. Also a clear strategy for the case of emergency has to be developed and trained long before a disaster occurs. Many examples from all over the world show: only this proactive disaster management together with a well organised early warning system can help to reduce the community’s vulnerability.

Prepared by:
Federal Institute for Geoscience and Natural Recourses (BGR)
www.bgr.de
Background
The Center for Disaster Management and Risk Reduction Technology (CEDIM) was founded in December 2002 as a virtual institute of the GeoForschungs-Zentrum Potsdam (GFZ) and the Universität Karlsruhe (TH).

The participating scientific disciplines include meteorology, water management, civil engineering and geophysics, economics, insurance science, geoinformatics and risk management.

It is a contribution to bridging the gap between science and application in disaster management and if focuses on user oriented and scientifically founded strategies for strengthening disaster prevention. With the "Risk Map" CEDIM has started developing the methodology for quantitative risk assessments which take into account natural and man-made hazards as well as the vulnerabilities of infrastructure and risks to the economy and society in general.

Solution approaches:
In a first step the scientists develop methods to assess monetary losses in direct damage due to an event. Later on indirect damage, like losses due to business interruption, will also be analysed.

Different types of data are used as input: geodata, statistics concerning land use, population density, quality of building structures, gross value added, spending power, etc. The analysing and modelling is conducted for natural hazards like floods, storms or earthquakes as well as for man-made hazards.

Whereas the teams focusing on natural hazards have access to historical data and time series analyses for their modelling, the man-made hazards team is developing scenario approaches.

After nearly two years of research the different projects presented first results.

The team concerned with earthquake hazards has produced the map “Estimated Risk Potential”, which covers the whole of Germany. Here the risk potential is mapped in euros. They also generated earthquake scenarios for selected regions, to assess possible damage to residential buildings caused by seismic activities.

The “Storm risk” team produced first approaches for modelling possible damage to residential buildings for a selected region in Germany (in euros).

Concerning the flood risk the scientists analysed past events, and are now able to deduce losses of possible future events.

All other subprojects have also produced valuable results.

Outlook
Parallel to the work in the subprojects a discipline-spanning comparison of the results is developed so that the user can compare the risks due to floods, storms, earthquakes or man-made hazards.

Since this is a very complex field, interdisciplinary focus groups were established concerning the asset estimation approach and the comparability of risks.

There are plans to transfer the methodologies to all hazard prone areas in Germany and abroad; obviously one has to modify and evaluate the methodologies.

Prepared by:
CEDIM, Universität Karlsruhe (TH)/Geo-ForschungsZentrum Potsdam
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www.cedim.de
German Committee for Disaster Reduction (DKKV): A National Platform within the International Strategy for Disaster Reduction

The German Committee for Disaster Reduction provides a national platform for disaster reduction within the ISDR in Germany. It is a non-governmental, non-profit association. The committee consists of four bodies: a members’ assembly, an executive board, a scientific advisory board and an operational advisory board. The bodies meet on a regular basis to exchange ideas on national and international disaster reduction activities. Temporary inter-disciplinary working groups have proved to be an effective instrument for addressing current issues.

The DKKV currently has 40 members representing a broad range of actors, ranging from those involved in science and technology to relief agencies and development cooperation organisations. Some members come from the media or the private sector. Thanks to the continuing commitment and support of the Federal Foreign Office to disaster reduction the National Platform in Germany was able to continue its activities since the beginning of the IDNDR.

DKKV’s prime objective is to raise public awareness and to integrate the disaster reduction agenda into society and, more specifically, into land use planning, urban development and environmental policy. Other programmes are aimed at developing countries in order to include disaster reduction into the education sector and into poverty reduction programmes.

DKKV has special strengths in the following areas.

- Linking science (theory) and practice
- Linking national and international activities
- Linking public and private sector initiatives

Our workshops and publications focus on particular disasters (e.g. the winter storm Lothar in 1999 and the Elbe Flood in 2002). Shortcomings are discussed and recommendations for future actions developed. The workshops and publications are designed to address policy makers, journalists, experts and the general public. DKKV publications are also cited abroad (e.g. PLANAT, report of activities 2001–2003). In 2003 more than 65,000 copies of DKKV publications were downloaded from our website.

Early Warning is one of the most effective instruments for reducing loss of life and property caused by natural disasters. It is a prime example of how activities can be interlinked at national and international level and is a multi-annual activity of the Committee. Since the early 1990s the DKKV has been actively promoting Early Warning. DKKV seized the initiative by calling for an international effort to promote Early Warning and secured the support of a large international community, including the UN system.

The first international Early Warning Conference brought together a multi-disciplinary range of users and providers of Early Warning Systems. The second international Early Warning Conference in 2003 in Bonn/Germany focused on implementing and integrating Early Warning into public policy.

The International Early Warning Programme adopted at the conference and the guidelines for policy makers: “Integrating Early Warning into Relevant Policies” are the result of the long-term efforts of numerous actors, including the DKKV and its members.

Prepared by: German Committee for Disaster Reduction www.dkkv.org
buring and its adverse impacts. The development of informal partnerships, joint projects and formal agreements among governments and between government and non-governmental institutions is essential to enable nations to develop sustainable fire management capabilities.

Given the diversity of sectoral responsibilities within the UN system, an interagency Working Group on Wildland Fire was established in 2001 to facilitate a common policy dialogue. The working group was set up within the ISDR Inter-Agency Task Force for Disaster Reduction, aimed at promoting assistance and technology transfer for sustainable fire management in developing countries. Support from governments and non-governmental organisations, including bilateral and multilateral cooperative efforts, is received.

In 2003 the Global Wildland Fire Network was established as an outreach programme under the ISDR. Regional Wildland Fire Networks are facilitating the dialogue between specialists and government agencies of neighbouring countries. The Global Fire Monitoring Center (GFMC) is facilitating the harmonization of a global dialogue and the development of an international agreement on cooperation in wildland fire management. The GFMC is conducting pilot outreach programmes in capacity building ranging from local actors (Community-Based Fire Management) to national and regional policies.

Enabled Local Communities under a Global Accord

By the end of 2004, Regional Wildland Fire Networks have been established covering almost all critical countries throughout the world. Regional consultations in 2004 came up with recommendations directed at a ministerial conference at the Food and Agriculture Organisation (FAO) (Rome, March 2005) to formulate an International Wildland Fire Management Accord. Meanwhile the global wildland fire community has demonstrated its ability to support cooperative and community-based fire management throughout many countries of Africa, Asia and the Americas. Working from people to people in wildland fire risk reduction requires networking and exchange of information, data and resources – from global to local – and vice-versa.

The GFMC and its global programme is a contribution of Germany to the ISDR. Prepared by: www.gfmc.org
25 Years International Training Courses on Seismology and Seismic Hazard Assessment

Part 1: Introduction
The GeoForschungsZentrum Potsdam (GFZ) organises annually international training courses on “Seismology and Seismic Hazard Assessment”. They provide theoretical fundamentals and practical training in applied seismology, especially for geoscientists and technicians from developing countries. The programme is particularly useful for seismological station and network operators, data interpreters and those concerned with seismic zoning and hazard assessment. These postgraduate crash courses are part of the educational and training programme of the UNESCO in the field of geosciences and disaster mitigation.

Part 2: Course Topics and Didactic Approach
The international training courses aim at providing problem awareness, interdisciplinary problem understanding, applicable knowledge and basic skills. Their main goal is the development and strengthening of self-aid capacity in developing countries by way of “on-the-job” training leading to:
- improved planning, setting-up and effective use of seismological, volcanological and tsunami monitoring and early warning systems
- more qualified analysis of seismic records and of other earthquake data for research and practice;
- more realistic assessment of seismic, volcanic and tsunami hazard, vulnerability and risk and understanding of their causes.

The courses are integral part of the R&D plan of the GFZ. Since 1992 these five-week courses are held alternately as world-wide open courses in Germany or as regional courses in earthquake-prone developing countries for participants from Africa, Asia or Latin America. The main topics of the courses provide a systematic introduction into the fundamentals of seismology, seismic hazard assessment and risk reduction. Additionally, complementary topics differ from course to course. They are tailored to the prevailing hazards, training needs and expertise existing in the developing countries/regions which host the course.

The GFZ provides the main personnel, financial, organisational, scientific-technical and logistic support to the courses. Regular Sponsors are the German Federal Foreign Office, InWEnt, Berlin, UNESCO, Paris, and OCHA, Geneva.

Additional ad-hoc sponsors are mainly from the hosting institutions and governments in developing countries.

Part 3: Results and Impact
The main target group of the GFZ international training courses are young postgraduate geoscientists, engineers, and disaster managers working in seismological observatory practice or earthquake zonation, microzonation and hazard assessment. 608 participants from 96 countries, amongst them 117 female participants, attended the courses between 1980 and 2004. The table shows the total number of course attendants from different countries. At the outset of each course questionnaires are handed out to participants. The actual overall response, the summary assessment for documents and effectiveness with respect to the work of the participants, grasp of the subject by the lecturers and subjects covered by the documents and exercises is evaluated at the end of each course. This feedback helps to improve the next International Training Courses.

Prepared by: GFZ
www.gfz-potsdam.de
The increasing number of natural events and their impacts present serious obstacles, particularly to developing nations: every year thousands of people die of disasters or lose their basis for living. On the national scale the negative impacts can trigger financial crises, as Hurricane Mitch did in Central America in 1998. In the light of the increasing economic damage, sustainable development is almost inconceivable in many areas of the world unless it is accompanied by a disaster-reducing approach.

Objective and Approach
Due to its commitment to sustainable development, GTZ promotes disaster risk management on behalf of the German government in order to
• reduce the risk of disasters that interrupt sustainable socio-economic and ecological development
• assure the long-term positive effects of development efforts
GTZ follows a multi-level approach. Locally based activities are integrated into GTZ supported regional processes and national reforms.

Risk analysis:
To draw up a risk analysis the hazard and vulnerability of a society are analysed on the basis of gathered data sets which combine scientific and local knowledge. Risk maps illustrate the disaster risk and serve as an important tool for awareness-raising and decision making.

Technical prevention measures:
Adjusting infrastructure to anticipated events is important to reduce or minimize disasters. This includes raising the heights of bridges, retrofitting buildings, and drainage and irrigation systems.

Spatial planning with focus on disaster risk management:
The integration of disaster risk management in spatial planning is promoted through land management measures.

Early warning systems:
To save lives sustainable ways of implementing early warning systems (technical equipment and know-how) are identified.

Rehabilitation and reconstruction:
After natural disasters have occurred, awareness of vulnerability provides good opportunities for integrating disaster reduction measures into rehabilitation and reconstruction.

Prepared by: GTZ
www.gtz.de/disaster-reduction
Integration of Disaster Risk Management in Local Development Planning in Guatemala

Problem
Parts of Guatemala are seriously affected by floods, bush fires and droughts, which afflict these areas frequently. However, risk management is rarely considered in development planning as a cross-cutting issue. This is mainly due to the following factors:
- Lack of a legal, regulatory and institutional framework
- No simple and comprehensive methodologies and instruments for integrating disaster risk management into development planning
- Insufficient capacities for disaster prevention planning

Objective and Approach
Within the “Decentralization and Promotion of Municipal Governments” (DDM) programme, which is supported by GTZ, the “Environmental and Risk Management” unit advises local partners and national institutions in Guatemala, such as the Ministry of Environment and Natural Resources (MARN) and the National Coordination for Disaster Reduction (CONRED), as well as the National Forest Institute (INAB). This contributes towards establishing a more effective disaster risk management through strengthening and decentralising organisational structures.

The integration of disaster risk management into local development planning is crucial in communities that are mainly based on subsidiary agriculture, where environment and risk management are very much inter-related. It therefore plays a vital role in formulating sector development strategies.

Within the framework of an overall programme policy, all interventional measures are designed together with national counterparts, local governments and partners, such as universities and NGOs.

Activities
- Advising the Guatemalan partners on a policy for integrating disaster risk management in a tri-national programme (Guatemala, Honduras, El Salvador) for the sustainable management of the upper watershed area of the Rio Lempa.
- Developing legal, regulatory and institutional framework conditions.
- Promoting traditional agro-forestry systems to reduce vulnerability in drought prone regions.
- Constructing retention basins for irrigation and installation of simple irrigation systems, combined with reforestation measures in the upper watersheds, in order to ensure sustainability of the water supply.
- Supporting training and workshops for technical staff of municipal planning offices
- Establishing appropriate databases at municipal and departmental levels for analysis, decision making and monitoring.
- Establishing a network between 14 municipalities and a regional university in the context of a geographical information system (GIS) for exchanging data, for capacity building measures and for sharing services and infrastructure.

Prepared by: GTZ
www.gtz.de/disaster-reduction

Well adapted agriculture is a key factor for sustainable rural development.
Local and Participative Disaster Risk Management in the Watershed Area of the San Pedro River, Bolivia

Problem
The already precarious nutrition situation in the watershed area of the San Pedro River is aggravated by landslides, erosion, droughts, cold waves and hail storms. These hazards exceed the capacity of the population to protect their fields and their food requirements by their own means. Disaster risk management therefore plays a crucial role in the development of this region.

Objective and Approach
Integrating local perceptions and knowledge in order to build up and strengthen capacities for an effective approach proved to be very important. GTZ therefore supports disaster risk management of local communities in the watershed area of the San Pedro River on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The approach is based on a social process which begins with a participative risk analysis. This analysis takes into account the particular Andean culture, local knowledge and existing coping and disaster prevention strategies. The intention is to seek a dialogue between technical and traditional knowledge.

Activities
a) Participative disaster risk analysis at the communal level must consider mainly social information. This information is expressed through the historical memory and local perception in relation to historic events that produced damages. Although subjective, this information allows one to judge the risks to which the local population is exposed and to plan activities of disaster risk management at the local level.

b) Municipal development plans constitute an opportunity for local entities to reflect on the conditions of their surroundings (risks, hazards, vulnerability and the capacity to respond), identify viable alternatives and finally to take decisions in order to prevent disasters.

c) Implementation of prevention measures: Based on risk analyses and municipal development plans GTZ supports the
• implementation of soil conservation measures to protect communities from landslides
• development of communal irrigation systems and diversification of food production in order to improve the availability of food during the »hunger season«
• promotion of adapted crop variety to extreme dry and wet seasons
• elaboration of disaster preparedness plans.

d) Support of national strategies: The experiences gathered at the local level are integrated into national strategies of disaster risk management. These strategies are elaborated together with the Ministry of Planning, international organisations (UNDP, WHO, WFP, EU, IADB), and NGOs, in order to foster a coherent development strategy and to implement a jointly agreed legislation.

Prepared by: GTZ
www.gtz.de/disaster-reduction

Education and training is important for a comprehensive understanding of problems and solutions
Problem
Frequent flooding and flood damages in the lower Mekong Basin are a serious development problem for the downstream countries Viet Nam, Cambodia, Laos and Thailand. About 8 million people are frequently affected by floods. As 40% of the population in the affected region live in poverty, the impact of the floods regularly jeopardises the fragile socio-economic livelihood system. Therefore, the national bodies need to be supported to prevent losses, transmit early warning messages or help in case of an emergency situation. The same applies to the trans-national coordination does not function effectively enough to overcome the problem.

Objective and Approach
To overcome these obstacles by adopting a regional approach, the Mekong River Commission (MRC) established an integrated Flood Management Programme in November 2002. It consists of eight components, including planning and infrastructure measures as well as preparedness aspects. On behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), the GTZ supports two components of this transboundary approach through capacity development focusing on disaster preparedness strategies and through taking into consideration flood risks within land management.

The German intervention, carried out in cooperation with ADPC and GFA Terra Systems, is particularly implemented at the transnational level, as well as at the national and provincial level in selected side-areas of the lower Mekong Delta. In eight districts in Viet Nam and Cambodia relevant local partner institutions are advised and supported in their disaster-preparedness and land management activities. Workshops are organised to share accumulated experiences with the local population and also to transfer these experiences to other regions.

Activities
- Preparation and implementation of flood-preparedness plans.
- Preparation of more reliable flood-probability information.
- Implementation of awareness campaigns and training programmes.
- Strengthening of national capacities to support the implementation of preparedness and land management plans.
- Transnational sharing of information and data.

Prepared by: GTZ
www.gtz.de/disaster-reduction

Awareness campaigns are essential for flood preparedness
Disaster Risk Management as Integrated Part of Rural Development in the Buzi River Basin, Mozambique

Problem
Mozambique is one of the countries most vulnerable to disasters. In the past Mozambique has received a substantial amount of relief and rehabilitation aid from the international community, channelled through various projects.

However, an integrated disaster risk management approach supporting institutional capacity at various levels with focus on local communities has not yet been institutionalised.

Objective and Approach
On behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) the GTZ is supporting Mozambican governmental and non-governmental institutions in their efforts to shift from a reactive approach to a preventive thinking and planning approach, in order to avoid the disastrous effects of floods, cyclones, bush fires and drought. The Disaster Risk Management component of the Rural Development Programme PRODER for Central Mozambique assists the district governments, especially in the Buzi River Basin, in their efforts to integrate disaster risk reduction measures into the decentralized multisector district development plans. This contributes towards integrating participatory risk prevention into rural development planning and poverty reduction efforts.

Activities
a) Providing technical and organisational capacity building support to institutions, such as the Mozambican Red Cross, the Buzi District Administration and local disaster risk management community committees.

b) Support of participatory risk mapping with local communities, to identify high and low risk areas.

c) Disaster preparedness exercises (i.e. a simulation of a cyclone-triggered flood with all key actors were staged at local, provincial and national level in Begoja community).

d) PRODER produced two video films to create awareness for disaster risk management and to provide information about the project’s approach.

e) Implementation of prevention and preparedness measures, such as
   • retrofitting of schools and other public buildings against cyclone
   • strengthening of early warning capacities (training, equipment and communication).

Awareness-raising via radio
To raise awareness among the population about the causes of flooding, interviews were transmitted and radio plays were prepared by the local radio station "Radio Comunitario do Buzi". In 2000, the station played an important role for spreading early warning information. The programme is broadcasted in Portuguese and the local language Ndau.

Prepared by: GTZ
www.gtz.de/disaster-reduction

Integration of disaster risk management is crucial to avoid droughts
Disaster Risk Management for Food Security in Arequipa, Peru

Problem
Natural hazards, particularly earthquakes, droughts, landslides and low temperatures, seriously affect livelihoods in the rural areas of the Andean Region of Southern Peru, causing severe food security problems. The people there have little knowledge of how to use natural resources in a sustainable and productive way. Often the population does not know how to protect the vulnerable infrastructure from being destroyed by devastating floods.

Objective and Approach
The main objective of the project is to reduce the vulnerability of the mostly rural population with respect to these hazards, and consequently stabilise food security.

In order to achieve this goal, high priority is being given to mainstreaming disaster risk management in development and sector planning. The GTZ therefore supports effective and decentralized institutions on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). Training of the staff plays a vital role in sustaining these structures. On the one hand, the project is focusing on introducing appropriate agricultural practices and improving irrigation infrastructure for vulnerability reduction and, on the other, it is promoting earthquake-resistant cheap housing and the construction of rural drinking water supply systems.

Raising awareness of the existing disaster risk among the population and the authorities was identified as a prerequisite for the sustainability of preventive measures. Measures that are to be used at the local level are therefore identified, planned and implemented together with the farmers and small entrepreneurs of the region.

Activities
- Participatory and technical risk analysis and mapping.
- Participatory design and implementation of appropriate risk reduction measures.
- Improving irrigation infrastructure and techniques (for instance, water distribution systems, field irrigation techniques), as well as organising water users.
- Introducing improved agricultural practices that contribute to risk reduction.
- Identifying safe zones for housing.
- Designing and constructing affordable, earthquake resistant housing.
- Constructing safe drinking water systems.
- Integrating risk reduction aspects in development and land use plans.
- Designing and implementing contingency plans.

Prepared by: GTZ
www.gtz.de/disaster-reduction

A house destroyed during the 2001 earthquake in southern Peru

Afghanistan is among the countries most susceptible to natural disasters. Earthquakes, sandstorms, flooding, drought, landslides and avalanches pose a permanent threat to Afghani livelihoods. Moreover, environmental damage caused in the wake of war increases the probability of future disasters. The present situation offers a good opportunity to implement preventive measures for disaster management, as Afghanistan’s government – supported by the international community – is in the process of rebuilding and reorganising this sector.

The project, funded by the Federal Foreign Office, aims to improve the competence of Afghanistan’s key institutions in the realm of Disaster Risk Management (DRM) at state and civil society level. The project focuses on risk analyses, early warning systems, and disaster prevention. The objective is to create a network comprising of the government, the academia and civil society. Thus, improving the decision making processes in disaster prevention.

Dialogue and training programmes are implemented in the following sectors:

- **Support in strategy development**
  Working jointly with the United Nations Assistance Mission to Afghanistan (UNAMA) and the Department for Disaster Preparedness (DDP), InWEnt developed a National Disaster Management Plan (NDMP).

- **Strengthening administrative and professional competence**
  Communication skills and management know-how help to foster networking within the DRM sector. This includes training in administrative and professional skills and the use of new methods for communications and knowledge management.

- **Developing training competence in the tertiary education sector**
  In the short term, non-formal and on-the-job training only partially meets the pressing capacity building needs. In the long term, an improvement of formal training in the tertiary education sector is a key requirement.

- **Policy dialogue**
  Promotion of policy dialogue is a key instrument for networking and building sound disaster prevention structures. Such dialogue brings together national and international disaster prevention players with representatives of the provinces and the national commission.

**Outlook**

Efforts to strengthen the institutional capacity of DDP and key government ministries at all levels are continued. Civil society organisations and other stakeholders, and also included in comprehensive training and capacity building programmes. Women are strongly encouraged to participate in all project activities.

For the next two to three years, the project will be conducted within the “Disaster Management Framework for Assistance for Afghanistan” under the auspices of the Afghanistan Emergency Trust Fund (AETF) within the responsibility of UNAMA and with the support of ADPC (Asian Disaster Preparedness Centre). Followed by a five-year “Comprehensive Disaster Management Programme (CDMP)” with multi-donor funding.

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A war-destroyed house in Kabul used as storehouse.
InWEnt –
INGC-Mozambique:
A Human Resource
Development Approach
for Mozambique and
the SADC Region

Southern Africa is vulnerable to natural disasters. Floods, drought, bush fires and tropical storms repeatedly cause very difficult living conditions for the population and place severe constraints on infrastructure, economic productivity and development. Disaster-related policies in the region have largely focused on emergency response, leaving serious gaps in terms of natural disaster prevention and mitigation.

In close cooperation with the National Disaster Management Institute (INGC) Mozambique and under the umbrella of the “UNDP programme for capacity building for disaster management” InWEnt developed a Human Resource Development Programme (HRDP) for Disaster Risk Reduction, implemented on behalf of the Federal Foreign Office, Germany.

The main partners are
• in Mozambique: INGC, the Technical Council with members from all ministries and NGOs working on disaster management;
• in SADC countries: National Disaster Management or Civil Protection Units – and those joining the disaster management system with necessary and complementary functions and
• International stakeholders: ISDR, UNDP-BCPR, USAID and FEWS NET.

The main target groups are personnel from the Disaster Management Units at national, provincial and district levels, NGO representatives and the media.

Training needs for the trans-border HRD and Dialogue Programme arise mainly in the fields of information management and communication, project planning and coordination and management skills.

Training modules focus on awareness raising (e.g. for risk reduction), knowledge transfer, skills training (e.g. data management) and train-the-trainers courses. Development workshops lead to institutional development. Policy dialogue fosters national and regional networks.

At the 2002 WSSD in Johannesburg the HRDP for Mozambique was recognized as a Type II Partnership because of its contribution to sustainable development: Involvement of local partners, support of regional cooperation and international exchange of experience.

Expected results of the regional network for training and capacity building:
• transboundary cooperation in disaster risk reduction
• continuous hazard and vulnerability analysis
• regional and trans-boundary approaches for Disaster Risk Reduction
• transboundary training plan for human resource development in information management
• raising public awareness on disaster risk reduction

Since May 2002 more than 1000 participants have been trained in the above field

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Institutional Capacity Building through Dialogue and Human Resource Development: InWEnt’s Approach for Disaster Risk Reduction

Disaster risk reduction is the focus of several of InWEnt’s capacity development activities like crisis prevention, social development – health (HIV/AIDS) and Environment and Natural Resources Management, especially food security.

Capacity development in this context is the process of strengthening legal, organisational, institutional and intra-institutional capabilities of institutions in charge of disaster management. This process concerns not only one single institution but networks of institutions, including ministries, universities, experts, international organisations and NGOs.

Create awareness – train – inform is our 3-tier system to build individual and institutional competence:

- Increase awareness for natural disasters and institutional strengths and weaknesses.
- Improve structures and procedures for disaster prevention and preparedness by building knowledge and skills in the fields of management, information management, and communication.
- Support the introduction of instruments above and beyond established emergency planning and assist in introducing implementation concepts to strategic discussions.

Sustainability of Human Resource Development is reinforced by:

- Strengthening institutional capacities by developing individual skills.
- Developing training and capacity building infrastructure for permanent learning processes.
- Establishing cooperation networks for training and dialogue. Networks provide exposure to national and international best practice.
- Introducing quality control and assessment mechanisms from the outset.

Examples of InWEnt’s Programmes for Natural Disaster Prevention

Crisis Prevention and Peace Development

As a rule, InWEnt integrates crisis prevention in its programmes. They incorporate peace education, peace development, dialogue in cultural conflicts, security policy, disaster prevention and management, as well as mitigation of resource conflicts.

Social Development - Health

The social and economic impacts of the HIV/AIDS pandemic jeopardize development efforts and heighten people’s vulnerability. InWEnt combats the pandemic with a multi-sector approach: prevention, impact reduction, treatment and aid.

Environment and Natural Resources – Food Security

Increasing pressure on the environment and natural resource depletion aggravates poverty and hunger. Aware that the growing risks of natural disasters and food shortages are inextricably linked, InWEnt focuses on people, their environment, their institutions and the responsible use of natural resources for improved food security.

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