DISASTER RISK REDUCTION
SDC POSTER EXHIBITION WITH ADDITIONAL INFORMATION
RISK REDUCTION MATTERS

THE NEED FOR ACTION

In the last 10 years natural disasters claimed 1 million lives, affected 2 billion people and caused economic losses estimated at US$ 700 billion.

World-wide, damages from extreme events increase dramatically. More people become more exposed to natural risks.

Disasters are a major drawback for sustainable development, the poor suffering the most severe consequences.
Disasters on the rise
Natural disasters affect millions of people each year. In the last ten years, catastrophic events claimed approximately 1 million lives, affected 2 billion people and caused economic losses estimated at US$ 700 billion. Catastrophic events are on the rise, both in number and in terms of people affected. The economic damage is increasing as well. While extreme events with a high number of casualties – like the earthquake in Indonesia in May 2006 – attract the attention of global media many disasters, especially slow onset disasters such as droughts, are barely noticed.

Poor disproportionately affected
The impact of natural disasters is not evenly distributed: the poor suffer the most. Casualties (people killed and people affected) are considerably higher in less developed countries than in the so-called developed world, where economic losses are highest. Disasters constitute a major drawback for economic growth in less developed countries due to the fact that money is often invested in emergency and recovery actions rather than in development. Consequently, the lack of resources makes the poverty situation even worse.

Vulnerability as key factor
Vulnerability to natural disasters is dramatically increasing in most societies (e.g. due to population growth, urbanisation, concentration of values, higher susceptibility, increased use of marginalized and high-risk areas). Parts of the increase roots in inappropriate, non-disaster-resilient development. Also land degradation and environmental changes contribute to increased risks. Global warming can have severe consequences, for instance desertification, increase of droughts and subsequent famine.

Therefore, it is indispensable to prevent a further build-up of risk factors and reduce existing risks, with a special focus on the reduction of vulnerability. Poor societies are of special concern because vulnerability and poverty are closely interlinked.

<table>
<thead>
<tr>
<th>Country</th>
<th>Disaster</th>
<th>Deaths</th>
<th>Damage</th>
<th>GDP</th>
<th>Damage/GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honduras</td>
<td>Hurricane Mitch</td>
<td>7000</td>
<td>$ 4.0 b</td>
<td>$ 5.0 b</td>
<td>0.8</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Earthquake 2005</td>
<td>73'000</td>
<td>$ 5 b</td>
<td>$ 89.5 b</td>
<td>0.06</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>Flood 1992</td>
<td>1350</td>
<td>$ 0.3 b</td>
<td>$ 0.3 b</td>
<td>1.03</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Storm Lothar 1999</td>
<td>14</td>
<td>CHF 1.8 b</td>
<td>CHF 390 b</td>
<td>0.005</td>
</tr>
<tr>
<td>USA</td>
<td>Hurricane Katrina 2006</td>
<td>1300</td>
<td>$ 125 b</td>
<td>$ 12'490 b</td>
<td>0.01</td>
</tr>
</tbody>
</table>

The table impressively shows that the impact of natural disasters exceeds the (financial) coping mechanisms of less developed countries. The economic damage versus gross domestic product is 10 to 100 times bigger than in the developed world.

Further information
ReliefWeb, an on-line gateway to information on humanitarian emergencies and disasters, administered by the UN: www.reliefweb.int
Disaster risk reduction and emergency assistance are main SDC priorities.

Prevention and mitigation, essential for development and poverty alleviation, receive an ever-increasing attention.

Disaster risk reduction is systematically integrated into development cooperation and humanitarian aid.
COMMITMENT
Disaster risk reduction, a long-term focus

Long tradition
The Swiss Agency for Development and Cooperation (SDC) is Switzerland’s international cooperation agency within the Swiss Foreign Ministry. SDC has been active in the field of disaster risk reduction for many years, reflecting the strong sense of solidarity and responsibility of Switzerland towards those affected by conflicts, crisis and disasters. While development cooperation strives to improve life and livelihood of the poor, the aim of humanitarian aid is to help preserve the lives of human beings who are in danger from natural disasters or armed conflicts and to alleviate suffering through preventive and emergency aid measures.

Development and disaster risk reduction are interlinked
Emergency assistance has been a focal point of SDC by addressing natural disasters such as earthquakes, floods and cyclones and their devastating effects. Since the vulnerability of people at risk is nonetheless growing, prevention and mitigation of disasters have taken on increasing priority. Natural disasters can substantially impair investments in development, thereby hampering sustainable development and poverty alleviation. It is obvious that disaster risk reduction has to be systematically integrated into development cooperation and humanitarian aid. SDC is aware of the importance of prevention as an integral part of sustainable development and aligns its activities with this principle.

Strong presence in the field
SDC is active in many regions of the world, in cooperation with local partners and together with international organisations. Development cooperation is focussed on 24 countries and regions of the south, and 12 of the eastern hemisphere. Humanitarian aid is provided worldwide. At present it is strongly involved in 8 geographic regions.

International disaster reduction efforts
SDC
■ supports relevant partner organisations and multilateral initiatives with strategic and organisational input and by providing specialised expertise,
■ disseminates its prevention and preparedness frameworks widely among partners, promoting their application as working instruments,
■ promotes greater strategic and financial commitments by the multilateral community to address natural disasters and mitigate their effects.

Further information
Solidarity alive: Humanitarian Aid Strategy, SDC 2005
SDC Strategy 2010, SDC 2000
SDC Guiding Principles, SDC 1999
www.unisdr.org/eng/hfa/hfa.htm
Risk reduction is a systematic procedure to deal with natural hazards and technological risks.

What may happen? Risk assessments analyse hazards, vulnerabilities and coping mechanisms.

What is acceptable? Risk evaluation addresses the balance of risks and opportunities.

What has to be done? Measures are designed according to the principle of sustainability.
SDC’s risk reduction efforts follow a methodological risk concept. Risk is expressed as a potential damage per year in terms of economic losses or casualties.

A systematic procedure to deal with risks from natural events on an operational level comprises a sound risk assessment, a comprehensive risk evaluation and the integral planning of measures.

**Risk assessment**
includes the analysis of all prevailing hazards (natural, technological) with their probability and intensity, and the respective vulnerabilities. Furthermore it covers the coping mechanisms of the concerned institutions as well as the population. Hazard, vulnerability and risk maps are appropriate instruments to visualize the local conditions.

**Risk evaluation**
deals with the question: what risk is acceptable? It is a socio-political process weighing the risks that emanate from natural processes against other risks and against opportunities. The concerned community evaluates how much risk it is able and willing to bear. Risk evaluation, therefore, is based on livelihood conditions, values and beliefs and personal or community experience.

**Measures**
are designed according to the principle of sustainability: environmentally sound, based on societal preferences and cost-effective.

To reduce risks to an acceptable level, various methods are applied:

- Avoiding: eliminate the hazard as well as avoid dangerous areas.
- Mitigating: decrease either the intensity or the effects of hazardous processes or reduce the vulnerability.
- Responding: cope effectively with an event and reduce further damage.
- Transferring: distribute the risk to a larger community.
- Carrying: deal with the remaining risks.

### Methods to reduce risks to an acceptable level

<table>
<thead>
<tr>
<th></th>
<th>Avoid hazards</th>
<th>Mitigate impact, adverse effects</th>
<th>Respond to adverse effects</th>
<th>Transfer risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Unavoidable risks</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Remaining risks</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Risks out of reach of response</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Risks not transferable</td>
<td></td>
<td></td>
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</tbody>
</table>

**Preventive measures:**
Prevent or mitigate the impact of an event.

**Preparedness measures:**
Be ready to cope with the consequences of an event.

**Bear the risk:**
Residual risk

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**Further information**
SDC Guidelines on Disaster Risk Reduction, SDC 2007
Vademecum: Hazard Maps and related Instruments – The Swiss System and its Application Abroad, SDC 2005
SDC publications can be ordered or downloaded from the SDC website, www.deza.ch
INTEGRATED APPROACH

PRINCIPLES OF SDC’S WORK

Risk reduction processes integrate mitigation, response and recovery. All three dimensions are given equal importance.

The overall goal is to prevent further build-up of risk factors and reduce existing risks.

Disaster risk reduction concerns the sustainable use of natural resources and sustainable development at large.

Risk dialogue allows all actors concerned to participate in shaping decisions.
INTEGRATED APPROACH
Principles of SDC’s work

SDC follows the conceptual framework of risk management as proposed by the Hyogo Framework for Action. It gives mitigation, response and recovery mechanisms equal weight.

SDC seeks to minimise the effects of natural disasters by implementing all three mechanisms:
■ Through preventive measures like the appropriate use of natural resources, the set-up of protection measures or the strengthening of the local coping capacities.
■ In response to an event, SDC provides search and rescue means as well as general humanitarian aid to those affected.
■ Disaster-resilient reconstruction is a focus for SDC in the recovery phase.
■ Special attention is paid to the close interrelation of the three mechanisms.

Promotion for a sound approach
SDC applies this approach to own activities as well as to cooperation with partners. A new challenge is the systematic integration of disaster risk reduction into development cooperation and humanitarian aid.
SDC sensitises its partners to the conceptual framework through awareness building and training at the project level but also by jointly implementing preventive and preparedness measures.

All actors addressed and included
Disaster risk reduction is an important task which involves many actors. Only a joint effort guarantees success, including national and local authorities, private sector entities, civil society, international organisations and the public at large. In its projects, SDC enables all actors concerned to participate in a risk dialogue.

Sustainability of efforts
Disaster risk reduction is part of the sustainable use of natural resources and of sustainable development at large. Therefore, making SDC’s projects disaster-resistant is considered a cross-cutting issue of paramount importance. A disaster-resilience check will be mandatory for all SDC projects which are related to land-use and land management.

Example for SDC’s implementation of an integrated approach
The Swiss Disaster Reduction Concept for Central America 2005-2007 is a bilateral programme that is directed mainly at capacity building, i.e. at the exchange of knowledge, know-how and experiences in risk management. The programme considers the various natural risks in local planning and in the development of settlements. Thereby, the integrated approach is the key element.

Further information
SDC Guidelines on Disaster Risk Reduction, SDC 2007
Swiss Disaster Reduction Concept for Central America 2005-2007, SDC 2005
www.unisdr.org/eng/hfa/hfa.htm
Mitigation is an ongoing process followed to avoid or limit the adverse impacts of natural disasters.

The main goal is to reduce the build-up of new risks, e.g. by settlements in high-risk areas.

Together with a variety of partners, SDC implements a wide range of projects.

Topics include legislation, land-use zoning, policy dialogue, flood protection plans, . . .

MITIGATION TAKING PREVENTIVE MEASURES
Mitigation covers all activities and measures taken to avoid or limit the adverse impacts of natural hazards. It also addresses the build-up of further risks like new settlements in flood-prone areas. Mitigation is a permanent process, which has to start long before an event occurs. Sustainable use of natural resources including farming and forestry also contribute to disaster prevention.

Based on a sound risk assessment, measures are undertaken to reduce the intensity or the impact of a hazard; e.g. dikes along rivers that protect adjacent areas against flooding. The vulnerability can be minimised as well: the population may avoid dangerous locations or reinforce their houses. Disaster prevention includes structural (engineering) and non-structural measures.

Together with its partners, SDC is active in planning and implementing various mitigation projects, for instance:

- In Nicaragua and El Salvador, hazard specialists together with the local authorities elaborate hazard maps that are used for land use zoning in many municipalities.
- Seismic microzonation, performed in Turkey and Jordan, serves as a basis for urban planning and land-use management.
- The new building codes in Turkey regulate appropriate construction in areas at risk from earthquakes.
- Reforestation stabilises slopes and consequently contributes to reduced floods and landslides. In the Ukraine, FORZA tests close-to-nature silviculture, which does not involve clear-cutting, thus the protective functions of the forest are ensured.
- In Bolivia, SDC provides support for watershed management and the sustainable use of natural resources within the PROMIC project, thus contributing actively to disaster risk reduction in Cochabamba valley.
- While the river bank project in Tajikistan consists of the construction of dikes and sediment retention basins in mountain torrents, SDC financed and accompanied the reconstruction of dikes and bank protection structures along the river Tisza in the Ukraine.
- After the 2002 floods in Germany, detailed analysis of flood and sediment transport processes and of the existing damage potential were carried out, providing the basis for flood protection concepts. Furthermore, the findings of the analysis were integrated into the water legislation of Saxony.

Further information
SDC Guidelines on Disaster Risk Reduction, SDC 2007
Konzept Prävention. SDC/Humanitarian Aid, 2001 (German only)
Swiss Disaster Reduction Concept for Central America 2005-2007. SDC 2005
SDC Project FORZA (Swiss-Ukrainian Forest Development Project in Zakarpattya) and SDC Project River Maintenance in Ukraine. www.swisscooperation.org.ua
SDC Project PROMIC (Programa Manejo Integral de Cuencas) in Bolivia. www.promic-bolivia.org
Event Analysis – August 2002 flood in the watercourses of the Ost-Erzgebirge mountains (German only; Management Report also in English). Saxon State Agency for Environment and Geology 2004. Can be requested at info@deza.admin.ch
PREPAREDNESS

BE AWARE, BE PREPARED!
The overall goal is to help initiate timely and appropriate rescue, relief and rehabilitation measures. SDC addresses different levels and a multitude of aspects:

Community: risk awareness, responsibility of stakeholders.

Operational level: training of emergency services, early warning systems.

Management: capacity building, risk-sharing mechanisms.

Politics: legal frameworks, decision-making.
Preparedness includes all activities and measures taken to ensure an effective response to disasters. Plans and procedures for the management of an emergency help to initiate appropriate rescue, relief and rehabilitation actions on different levels. Consequently, the impact of a disaster can be reduced.

As the following examples show, SDC efforts to improve the preparedness for emergencies address different levels and cover various aspects like:

**Community level**
Families in villages of Honduras get and maintain higher risk awareness by elaborating emergency plans for their neighbourhood ("auto-mapeo comunitario").
In Turkey, a network of neighbourhood volunteer groups were equipped and trained for light rescue work immediately following an earthquake or any other disaster.

**Operational level**
SDC establishes, equips and trains emergency services like fire brigades in Belarus or urban search and rescue teams in Turkey.

SDC supports the development of early warning systems like the flood forecasting project in the region of the Three Gorges Dam in China. Special attention is paid to the fact that early warning systems need a strong and permanent structure where information is gathered, processed and disseminated in a way understandable to the local people.

**Management level**
SDC launched a project for capacity building at the Tajik Ministry of Emergency Situations and Civil Defence, the leading national organisation in the disaster reduction sector with highly dedicated staff but lacking equipment for and training in disaster management.
SDC promotes the establishment of risk sharing mechanisms, for instance in Southern Africa: Drought-resistant maize ensures food security in case of a regional drought with food shortage.

**Political level**
The legal framework and appropriate political structures on the national level ensure the implementation of any type of preparedness measures.

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**Further information**
- Konzept Preparedness. SDC/Humanitarian Aid 2001 (German only)
- SDC Guidelines on Disaster Risk Reduction. SDC 2007
- Coping with Drought (also available in French and Spanish). SDC 2006
- Swiss Disaster Reduction Concept for Central America 2005-2007. SDC 2005
RAPID, COORDINATED, EFFICIENT RESPONSE

SDC may deploy highly specialised Rapid Response Teams to assess needs and provide immediate assistance on the ground.

Cooperation with governments of affected countries and coordination of aid efforts with the UN and other partners are essential.

Swiss Rescue, the Urban Search and Rescue Unit, counts on 100 specialists, 18 search dogs and 16 tonnes of materials and can depart within hours.
Natural disasters often occur unannounced and can be of a magnitude that overwhelms local coping mechanisms. International assistance for those affected is indispensable. SDC provides emergency aid, saving lives and covering the basic needs of victims. Damages are repaired as quickly as possible and additional immediate steps are taken to help victims survive. Response actions include the deployment of specialists, deliveries of food and aid supplies (e.g. clothes, blankets, tents, medical care) and financial contributions to international humanitarian aid organisations.

**Personnel resources**

In the case of a major earthquake, SDC can mobilise Swiss Rescue, SDC’s urban search and rescue unit. It is deployed within one day to search and rescue persons trapped in collapsed buildings. In order to react rapidly and appropriately to disasters, SDC deploys Rapid Response Teams. These highly specialised teams assess the situation and initiate first activities, in close cooperation with the government of the affected country and the UN.

Swiss Rescue brings together private and public, civilian and military partner organisations, coordinated by the Swiss humanitarian aid. Swiss rescue includes about 100 persons (generalists and specialists like dog handlers, rescuers and emergency doctors), 18 search dogs and 16 tonnes of material.

**Examples of SDC missions**

**TSUNAMI IN SOUTH ASIA, 26 DECEMBER 2004**

After the Tsunami, a team of four logistical, medical and reconstruction experts was immediately sent to Sri Lanka to evaluate the most urgent needs, provide immediate assistance on the ground, coordinate aid efforts with other partners and finally initiate recovery projects. Another four-person team served in Phuket/Thailand to backup the Swiss staff responsible for consular protection and the repatriation of Swiss tourists.

**EARTHQUAKE IN BAM/ IRAN, 26 DECEMBER 2003**

In just a few seconds, the town of Bam and its historic citadel were almost completely destroyed. Close to 30,000 people perished beneath the rubble of their former dwellings and another 30,000 were injured, 75,000 were made homeless. A search dog squad of six specialists with four dogs – together with other experts – was on the spot within 24 hours, ready to start rescue operations.

**Coordination of relief efforts**

The scale and complexity of needs after a disaster is often of such magnitude that only the multilateral system can provide the financial resources, capacities and expertise required; coordinated intervention can ensure rapid and focused response. Among other activities, SDC contributes to the Central Emergency Response Fund (CERF), which is a revolving cash flow mechanism to provide advances to organisations of the UN system for emergency assistance.

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**Further information**

Solidarity alive, Humanitarian Aid Strategy 2005. SDC 2005
Rettungskette Schweiz: Handbuch (German only). SDC 2005.
UN Central Emergency Response Fund: http://ochaonline.un.org
Recovery efforts must avoid creating new risks and exacerbating existing ones.

A range of methodologies is applied: Event analysis, disaster-resilient reconstruction, land-use plans, risk transfer systems, . . .

SDC requires a disaster-proof check for recovery projects.

Transition from emergency relief to sustainable development is complex and must be handled with great care.
Recovering from a disastrous event, the people affected take first steps towards a safer future. In this process, SDC encourages them to assume self-responsibility. During rehabilitation and recovery, lessons learnt from past events need to be considered in order to prevent the build-up of new risks. Vital infrastructure like schools, hospitals or telecommunication facilities must be protected from damage as far as possible. SDC therefore requires a disaster-proof check for recovery projects. In hazard-prone areas, protection of new investments must also be considered, a process that benefits from guidance provided by major financial institutions.

SDC is aware that transition from emergency relief to sustainable development can be complex. Therefore, important aims are to bridge the gap between differing policies and to collaborate with those involved in humanitarian aid and in development cooperation, with donors and local partners.

SDC’s recovery efforts cover the following aspects:

- **Event analysis**
  Evaluating disasters helps to understand the evolution of hazardous processes, while the assessment of damage to buildings and infrastructure indicates their vulnerability. The analysis of the emergency management also contributes to the “lessons learnt process”. An event analysis like the one carried out in Germany after the 2002 floods provides an important basis for reconstruction and implementation of preventive measures.

- **Risk assessment**
  The earthquake in Northern Pakistan on 8 October 2005 triggered widespread slope instabilities and rock falls resulting in destroyed roads and clogged rivers. Analysis of such remaining or secondary risks is crucial for recovery activities.

- **Adaptation of land-use plans**
  After the tsunami 2004, several fishing settlements in Sri Lanka were relocated to a safer area.

- **Disaster-resilient reconstruction of infrastructure**
  Reinforcement of buildings in Turkey minimises potential earthquake damage.

- **Promotion of risk transfer systems**
  Mechanisms like village funds, insurances, systems of microcredit contribute to the resilience of communities. “Cash for Host Families” in Indonesia provides financial support for those hosting homeless people after the tsunami 2004.

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**Further information**

Prevention and Preparedness Measures in Reconstruction following the 2004 Tsunami Disaster in South Asia (leaflet, also available in German and French). SDC 2005

“Cash”-Projekte in der humanitären Hilfe: eine Form der Direkhilfe (factsheet, German only). SDC 2005. cash.program@deza.admin.ch


Event Analysis – August 2002 flood in the watercourses of the Ost-Erzgebirge mountains (German only; Management Report also in English). Saxon State Agency for Environment and Geology 2004. Can be requested at info@deza.admin.ch
A major part of SDC’s contribution to Disaster Risk Reduction and response to catastrophes is implemented through international cooperation.

SDC actively strengthens international cooperation, notably thematic policy dialogue at global, regional and national levels.

Geneva, seat of a multitude of organisations, is recognised as a global hub for Disaster Risk Reduction.
International solidarity
A major part of SDC’s contribution to disaster risk reduction and coping with catastrophes is implemented through international cooperation. However, effective coordination is crucial for efficient action. SDC has been active in strengthening international cooperation efforts, notably in supporting thematic policy dialogue at global, regional and national levels.

Geneva – world competence centre for disaster risk reduction
Since the International Decade of Natural Disaster Reduction (1990-1999), Geneva has gained international recognition as a global centre for disaster risk reduction. This trend has been confirmed in the new architecture of the International Strategy for Disaster Reduction (ISDR). Within the UN system, its Secretariat serves as a hub for the coordination of strategies and programmes. The main focus of its work lies on the integration of risk reduction into sustainable development. SDC has been one of the key supporters of the Secretariat during the past years.

SDC cooperates with numerous international agencies, organisations and networks, among them:
■ International Federation of Red Cross and Red Crescent Societies (IFRC)
■ United Nation Development Programme (UNDP)
■ World Bank
■ United Nations Office for the Coordination of Humanitarian Affairs OCHA (with UNDAC and INSARAG mechanisms)
■ ProVention Consortium (a network of governments, international organisations, international financial institutions, academic institutions and representatives of the private sector and civil society)

SDC has built close relationships with its partners at three complementary levels: i) financial contributions, ii) exchange of skills and experience (through secondments of personnel and experts), iii) in-kind donations.

SDC has also been following the activities of the International Risk Governance Council, in particular with the participation in its Board by SDC Director-General, Mr. Walter Fust. The Council is dedicated to understanding and managing global risks that impact human health and safety, the environment, the economy and society.

International conferences
SDC played a prominent role in the preparation for and the holding of the World Conference on Disaster Reduction (Japan, January 2005). The Deputy Head of the Humanitarian Aid Department, Dr. Marco Ferrari, chaired the Conference’s Drafting Committee, which finalised the “Hyogo Framework for Action 2005-2015”. This framework, which is based on an international consensus, serves as a road map for global disaster reduction efforts.

International conventions
SDC supports developing countries and countries with economies in transition in the implementation of international conventions on climate change or biodiversity. Furthermore, SDC serves as national focal point for the Desertification Convention. These international legal instruments include relevant aspects of disaster risk reduction insofar that the management of natural resources strongly contributes to a safer environment and to the promotion of sustainable development in all its dimensions.

Further information
Humanitarian Aid of the Swiss Confederation: A conceptual framework for multilateral commitment. SDC 2005
Addressing Climate Change through Development Cooperation (factsheet). SDC 2005
Coping with Drought (also available in French and Spanish). SDC 2006
Convention on Biological Diversity. www.biodiv.org
UN convention to combat Desertification. www.unccd.int