



Environmental Sustainability and Disaster Risk Reduction

For consideration at the

10th Special Session of the Governing Council/Global Ministerial Environment Forum
The Principality of Monaco, 20-22 February 2008

Key messages

- **Environment management and ecosystem services are crucial elements to reduce disaster risks and to adapt to climate change.**
- **Healthy ecosystems increase community resilience to natural hazards.**
- **The environment sector should actively engage in shaping the agendas of national platforms for disaster risk reduction.**
- **Disaster risk considerations should be integrated into sustainable development planning.**
- **International agreements specify requirements to reduce disaster risks.**
- **Ecosystem management and environment policies and tools need to incorporate risk reduction principles.**

Environment and disaster risk

The Millennium Declaration¹, the Millennium Ecosystem Assessment² and the Hyogo Framework for Action³ have different focuses but a similar view that environmental degradation, poverty and disaster risk share common causes as well as common consequences for human security and well-being. They also recognize that ecosystem services, environmental management and environmental information offer opportunities to reduce risk, decrease poverty and achieve more sustainable development. Ecosystems are affected by disasters, but also contribute to saving lives and protecting livelihoods.

- Healthy ecosystems provide natural defences, wetland ecosystems for example function as natural sponges that trap and slowly release surface water, while mangroves, dunes and reefs create physical barriers between communities and coastal hazards.
- Conversely, degraded ecosystems reduce coping capacities of communities and social systems. There is a strong causal relationship between poverty, a degraded environment and higher disaster risk. Environmental management, including community based resource management, help to increase community resilience.
- Disaster recovery processes need to take the state of ecosystems and ecosystem services into account to avoid re-creation or exacerbation of pre-existing vulnerabilities.
- In some cases, human activities directly affect the nature of the hazard, in particular through climate change and desertification.

¹ Also known through the Millennium Development Goals (MDGs). See UN General Assembly Resolution 55/2, 8 September 2000: <http://www.un.org/millennium/declaration/ares552e.pdf>

² Millennium Assessment Reports: <http://www.millenniumassessment.org/en/index.aspx>

³ Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters: <http://www.unisdr.org/eng/hfa/hfa.htm>

Climate change, environment and disaster risk

Climate change will generally increase disaster risks, not only through increases in extreme weather events and sea-level rise, but also through increases in societal vulnerabilities to hazards arising from stresses on water availability, agriculture and degrading ecosystems.

Many disaster risk reduction activities contribute directly to climate change adaptation, as recognized in the Bali Action Plan (2007)⁴. These include such things as early warning systems, risk assessment and the sustainable management of natural resources. Environmental issues need to be integrated into these adaptation strategies to ensure that adaptation measures are environmentally sensitive.

Development gains are at risk

Disasters are not random but arise from the convergence of hazards and vulnerable conditions. Disasters not only reveal underlying social, economic, political and environmental problems, but unfortunately contribute to worsening them. Disasters pose serious challenges to development, as they erode hard-earned gains in terms of political, social and educational progress, as well as infrastructure and technological development.

Environmental degradation, settlement patterns, livelihood choices and behavior all influence disaster risk, which in turn adversely affects human development and contributes to further environmental degradation. The poorest are the most vulnerable to disasters because they are often left to settle on the most marginal lands and have least access to prevention, preparedness and early warning.

Poverty reduction strategies, including those developed under Poverty Reduction Strategy Paper (PRSP) processes, need to explicitly include disaster risk reduction as part of their environmental and development objectives.

Primary international mandates that address environment and disaster risk reduction

A number of international agreements emphasise the importance and the linkages of environmental management and disaster risk reduction, and identify responsibilities to reduce disaster risk.

The **Millennium Declaration**, September 2000, recognizes the risk to development stemming from disasters and calls on the global community to “intensify our collective efforts to reduce the number and effects of natural hazards and man-made disasters”.

The **Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters** was adopted by 168 Governments at the World Conference on Disaster Reduction, Kobe, Japan, January 2005, Paragraph 19 establishes the “*Priority for Action 4: Reduce the underlying risk factors*”, which includes:

- “Encourage the sustainable use and management of ecosystems.”
- “Implement integrated environmental and natural resource management approaches that incorporate disaster risk reduction ... such as integrated flood management and appropriate management of fragile ecosystems.”
- “Promote the integration of risk reduction associated with existing climate variability and future climate change into strategies for the reduction of disaster risk and adaptation to climate change.”
- “Incorporate disaster risk assessments into urban development planning and management of disaster-prone human settlements” ... “rural development” ... “major infrastructure” ... “including considerations based on social, economic and environmental impact assessments.”

The **Millennium Ecosystem Assessment**, 2005, identifies natural hazard regulation as an important ecosystem service “in modulating the effects of extreme events on human systems. Ecosystems affect both the probability and severity of events, and they modulate the effects of extreme events.”

⁴ Bali Action Plan, Decision -/CP.13: http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf

The **UN General Assembly resolution 60/195⁵**, March 2006, endorsed the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.

The **Decision 24/16 Updated water policy and strategy of the United Nations Environment Programme⁶**, of the twenty-fourth session of the Governing Council/Global Ministerial Environment Forum, February 2007, requests in paragraph 24:

- *“Extreme hydrological events should be addressed in the context of an integrated approach to water resources management geared towards developing prevention and preparedness measures, together with risk mitigation and disaster reduction strategies.”*
- *“UNEP will contribute within its mandate to implementing the Hyogo Framework for Action.”*

The **Bali Action Plan⁷ adopted at the United Nations Climate Change Conference in Bali, December 2007**, includes risk management, risk reduction strategies and means to address loss and damage associated with climate change impacts as significant elements of climate change adaptation (para.1c). There are also disaster risk implications in respect to policy approaches for reducing emissions from deforestation and forest degradation in developing countries (paragraph 1b).

Reduce disaster risks through ecosystem management and environment policies and tools

The UNEP-led ISDR Working Group on Environment and Disaster Reduction⁸ discussion paper “Environment and Vulnerability”⁹ has made recommendations to environmental authorities to undertake environmental action to reduce disaster risks and support the implementation of the Hyogo Framework. The main activities include:

- Ensure that strategies for environment and disaster risk reduction are compatible and that the relevant managers are fully engaged in both environment and disaster risk reduction mechanisms.
- Include risk reduction criteria in environmental regulatory frameworks such as environmental impact assessment (EIA) and ensure that longer term climate change impacts are considered.
- Engage the scientific community in environmental and disaster risk reduction research and promote innovative environmental technologies and designs for structural defences.
- Facilitate the development and use of new technologies and processes for managing natural resources and risks, including local and new knowledge of the ecological, social and cultural dimensions of resource management and risk associated with natural hazards.
- Integrate environmental and disaster risk considerations in development planning.
- Strengthen environmental capacities for post disaster response and include environmental considerations in post disaster recovery¹⁰.

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For further information please contact ISDR secretariat at: schaerpf@un.org

⁵ http://www.unisdr.org/eng/about_isdr/basic_docs/GA-resolution/a-res-60-195-eng.pdf

⁶ Decisions adopted by the Governing Council/Global Ministerial Environment Forum at its twenty-fourth session: http://www.unep.org/gc/gc24/docs/GC24_decisions.pdf

⁷ Bali Action Plan, Decision -/CP.13: http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf

⁸ Working Group members include: ADPC, ADRC, AUC, CoE, GFMC, IFRC, IUCN, UNCRD UNDP, UNEP, UNU, WFP, WMO; additional participants have included: DHI, DKKV, FAO, IWRM, PDC, ProAct Network, SEI, World Bank.

⁹ Environment and vulnerability: emerging perspectives: http://www.preventionweb.net/files/624_10306.pdf

¹⁰ See also the “Rosersberg Initiative” on strengthening the global regime for environmental emergency response and preparedness: <http://ochaonline.un.org/ToolsServices/EmergencyRelief/EnvironmentalEmergencies/RosersbergInitiative/tabid/2647/Default.aspx>