



Forest Landscape restoration Burundi © Simon Greig

ABOUT CEM



# Healthy Ecosystems for Human well-being

Ecosystems Management Programme

## The Commission on Ecosystem Management

CEM members provide expert guidance on the management of natural and modified ecosystems to promote biodiversity conservation and sustainable development. The CEM numbers approximately 1000 voluntary scientific experts working on ecosystem management related issues. Areas of expertise include different types of ecosystems such as arid lands, mountain ecosystems or steppes. They also include cross-cutting aspects of ecosystem management such as ecosystem-based adaptation to climate change, disaster risk reduction, and ecosystem resilience, services and restoration.

In addition to ecosystem knowledge and management, CEM is developing the **IUCN Red List of Ecosystems**, a global standard that assesses the status of ecosystems, applicable at local, national, regional and global levels. This will help guide conservation action and land use planning and highlight the livelihood services that ecosystems provide. CEM will continue to expand its global network of ecosystem management professionals to better address international ecosystem concerns while fostering a collaborative relationship among its members, IUCN Members and partners, and other professional networks.

CEM programme priorities:

- **Red List of Ecosystems** - create the first Red List of Ecosystems of the World prior to 2020
- **Resilience of Ecosystems and of the communities that depend on their services** - CEM/EMP have developed a number of successful initiatives such as Ecosystem Based Adaptation to Climate Change, and Disaster Risk Reduction which will be developed further.
- **Specific Ecosystems and Biomes oriented activities** - CEM supports the activities of EMP in islands and drylands and will continue to pay attention to the management of specific ecosystems such as steppes, Mediterranean ecosystems, wetlands, etc.
- **Emerging issues** - New groups focusing on aspects of deep sea mining, resilience and invasive species. Groups are also planned on Nanotechnology, Biosynthesis, and Arctic ecosystems in the near future.



IUCN Photo Library - Women drinking at waterhole in Tanzania © Daniel Shew

ECOSYSTEMS MANAGEMENT PROGRAMME



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Termites as dryland ecosystem engineer © Simon Greig



EbA measures include restoration, conservation agriculture, forestry, coastal management etc.

Rotational grazing, Peru © IUCN, Ali Raza Rizvi

IUCN is a leading organisation in EbA and has been involved in 45 EbA projects in 58 countries.

These projects address climate change impacts by:

- increasing community and ecosystem adaptive capacities;
- decreasing vulnerabilities by promoting sustainable livelihoods;
- enhancing capacity and knowledge of state, civil society and community capacity on climate change adaptation;
- implementing EbA tools and methodologies at national and local levels.

These include short and long term EbA measures with local communities and governments, such as restoration, integrated water resource management, coastal conservation, slope stabilization, agro-biodiversity, community forestry, conservation agriculture, livestock management etc. All these measures promote and assist the incorporation of existing or projected climate risks with a view to enhancing the resilience of both communities and ecosystems.

#### Improved Governance Systems

Most importantly, these projects help to increase ecosystem and community resilience by improving governance systems, which is IUCN's forte. These include legal, policy and regulatory frameworks in addition to awareness raising, capacity enhancement and public participation.

In order to initiate the evidence base for EbA, IUCN has developed an EbA Learning Framework, a tool designed to map EbA project experiences and results. Based on the knowledge generated from field projects and policy gap analyses, IUCN is taking measures, through consultations, technical papers, and advocacy to promote Nature Based Solutions for adaptation.

[www.iucn.org/about/work/programmes/ecosystem\\_management/climate\\_change/eba](http://www.iucn.org/about/work/programmes/ecosystem_management/climate_change/eba)

#### ABOUT ECOSYSTEM MANAGEMENT PROGRAMME

## Ecosystem-based solutions

### Ecosystems as natural buffers

Healthy and well-managed ecosystems - such as coral reefs, mangroves, forests, rangelands, and wetlands act as natural buffers or protective barriers, for instance through flood and landslide mitigation, water filtration and absorption, and managing for dry time. At the same time, fully functioning ecosystems provide cost-effective natural buffers against hazard events and the impacts of climate change, and build local resilience against disasters by sustaining livelihoods. In addition ecosystems provide important products to local populations and are a core livelihood strategy for many people across the globe.

### Ecosystems as prevention

Ecosystems in good condition play a critical role in people's ability to prevent, cope with and recover from disasters. They provide key services such as coastal protection, soil stabilization and are also crucial for supplying communities with natural resources such as fuel, food, medicine and water.

### Natural based solutions

Mismanagement and over-exploitation are putting immense pressure on ecosystems, and some have already been irreparably damaged, for example the Aral Sea. IUCN is responding to these challenges by demonstrating and promoting natural based solutions as the key means for ecosystem management, and using ecosystems as a means for conservation action and for enhancing livelihoods.

### Our approach : four key programmatic areas

IUCN promotes the ecosystem approach within the Ecosystem Management Programme in four key programmatic areas, as well as providing support for the Global Islands Partnership (GLISPA). In addition the Ecosystem Management Programme is the focal IUCN Secretariat Programme for the IUCN Commission on Ecosystem Management (CEM). The four programme areas are:

- Climate Change Adaptation
- Environment and Disasters
- Global Drylands Initiative
- Red List of Ecosystems

[www.iucn.org/about/work/programmes/ecosystem\\_management](http://www.iucn.org/about/work/programmes/ecosystem_management)

### Climate Change and Ecosystem Based Adaptation

Climate change is a stark reality that the Earth and its population face. Changes in weather patterns, such as rainfall and temperature, are already creating severe problems for the ecosystem goods and services that we rely on. Impacts are also likely to magnify existing risks and vulnerabilities to disasters. Therefore, there is a crucial need to develop effective adaptation capabilities to deal with these changes.

Realising this important issue early on, IUCN has built a clear vision that focuses on strategic engagement under the United Nations Convention on Climate Change (UNFCCC) as well as promoting climate smart natural resource management. This has resulted in IUCN being a key organization in the ecosystem based adaptation niche. Working together with Members and Partners has led to IUCN spearheading the inclusion of Ecosystems Based Adaptation (EbA) in the Adaptation Framework adopted in 2010.

IUCN has implemented  
45 Ecosystem-based  
Adaptation projects  
in 58 countries

### A Nature Based Adaptation Strategy

EbA uses biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the negative effects of climate change at local, national, regional and global levels. As such it offers a unique, cost effective yet underutilized approach to adaptation. IUCN, owing to its rich experience in the field of biodiversity and ecosystem conservation, is ideally placed to implement EbA approaches to enhance communities' resilience to cope with climate change.



Cambodia © IUCN, Ali Raza Rizvi



The most vulnerable are often those who are the most dependent on natural resources

After tropical storm Stan, Mexico © IUCN, Marco Calvo

### Disaster Risk Reduction

During the past few decades the number of disasters and their impacts on communities worldwide has steadily increased.

As a result of climate change, this trend is set to continue, although with an increase in the number of extreme weather events. While hazard events such as hurricanes and landslides may be natural, disasters result from a combination of social, political, economic and environmental contexts. Indeed human vulnerability to natural hazards is exacerbated by ongoing environmental degradation, high population densities in exposed areas and lacking or ineffective government policies. The most vulnerable are often those who are most dependent on natural resources for their livelihoods.

Eco-DRR involves decision-making activities that protect, restore and sustainably manage ecosystems

Major disasters such as the 2004 Western Indian Ocean Tsunami, Hurricane Katrina and 2011 Great East Japan Earthquake have clearly demonstrated the role of healthy and well-managed ecosystems in hazard mitigation. The role of nature in Disaster Risk Reduction, response and relief as well as recovery and reconstruction has increasingly been recognized and promoted in the last decade. Healthy ecosystems can provide physical protection against common natural hazards, such as floods, coastal erosion, storm surges, wildfires and drought. Additionally, ecosystem services support human life and provide the basic materials for emergencies, such as food, fuel and clean water. Reducing disaster and climate risks is therefore dependent on healthy ecosystems and preparedness to reduce exposure to hazard events and adapt to future climate changes.

### IUCN taking the challenge

IUCN is working to enhance ecosystem management for disaster risk reduction from global to local scales around the world: an approach called "ecosystem-based disaster risk reduction" (eco-DRR). Eco-DRR involves decision-making activities that protect, restore and sustainably manage ecosystems in order to enhance their role in supporting communities to prepare for, cope with and recover from disaster situations. IUCN is taking the challenge to promote nature-based solutions for disaster risk reduction that will guide its members, global, regional and local decision-makers, donors and NGOs worldwide in developing and implementing the most effective strategies to build resilience to climate change and reduce the impacts of disasters.



Learning visioning landscapes, Burundi © IUCN, Intu Boedhihartono

### PARTNERSHIP FOR ENVIRONMENT AND DISASTER RISK REDUCTION :

IUCN is a key founding member of the Partnership for Environment and Disaster Risk Reduction (PEDRR), which is a global alliance of UN agencies, NGOs and specialist institutes that collectively aim to influence policy, enhance implementation and better coordinate efforts in environmental management for disaster risk reduction, climate change adaptation and sustainable livelihoods.

IUCN's knowledge and experiences on natural resource management have been critical for informing PEDRR interventions and activities.

[www.pedrr.org](http://www.pedrr.org)



Ship run aground of the top of a school, Japan © IUCN, Naoya Furuta



A new global standard to assess risks to ecosystems

Clown fish and corals, Rangiroa atoll © Catherine Gras

### The Status of our Planet

Everyone knows that coral reefs are in danger, and rainforests are disappearing – or do we? What do we actually know in scientific terms? How much of these ecosystems are left, how are their functions changing and how likely are they to disappear?

The IUCN Red List of Ecosystems (RLE) is a new tool that provides answers to these and other questions. By 2025, IUCN aims to document the status and measure the risks to the world's terrestrial, freshwater, marine and subterranean ecosystems.

Assessing the status of ecosystems to inform where and how we can act to secure our future

### What is the Red List of Ecosystems?

The RLE provides a unified standard for assessing the status of all ecosystems, applicable from sub-national to global levels. It is based on criteria for performing evidence-based assessments of the risk of ecosystem collapse, as measured by reductions in geographical distribution or degradation of key processes and components.

RLE assessments will inform better management of the finite resources of our planet. Sound environmental management is imperative to maintain functional ecosystems, their biological diversity and the ecosystem services upon which our economies and social well-being ultimately depend.

### How is the Red List of Ecosystems important for you?

#### Conservation

To help prioritise investments in ecosystem management and restoration, reform resource use practices, and reward good ecosystem management.

#### Natural resource management and macro-economic planning

To illustrate ecosystem risks under different land use/development scenarios; offer insights into ecosystems that provide services such as clean water, soil productivity and the availability of natural products; and highlight the economic costs of reduced ecosystem services and potential economic benefits of improved ecosystem management.

#### Improvement of governance and livelihoods

To inform development of governance systems that improve ecosystem management, livelihood security and social outcomes.

#### Global environmental reporting

To inform governments and the global community on progress towards achieving international environmental targets.

#### Private sector

To assess potential environmental and social benefits and costs of alternative designs of future development projects, as well as monitor/report on environmental impacts.



Gilgit Pakistan © IUCN

### Global Drylands Initiative

Drylands are found in tropical and temperate latitudes and account for 41.3% of our planet's land. Drylands are highly diverse and are classified in four types—dry sub-humid, semi-arid, arid and hyper-arid lands—encompassing a variety of ecosystems, such as wetlands or high-altitude forests. They also include major urban centers and host many of the world's mega-cities, such as Mexico City, Los Angeles, Cairo and New Delhi.

Drylands are home to some of the most unique biological and cultural diversity on the planet and feature many endemic species and unique ecosystems, and are home to some of the world's most treasured natural heritage. They include 17% of the global Centers of Plant Diversity, 47% of Endemic Bird Areas and 26% of protected areas worldwide. Drylands are also the centers of origin of much of our global agricultural biodiversity. Two and a half billion people - one third of the world's population - live in drylands: 90% of them in developing countries.

### THE IUCN RED LIST OF ECOSYSTEMS IS:

- A scientifically robust method to compare ecosystem status between regions and over time
- Able to inform conservation, land use and investment priorities
- Defined by quantitative criteria that identify varying levels of risk
- Easily understood by policy-makers and the public
- Complementary to species-based approaches
- Transparent, objective and repeatable
- Applicable to terrestrial, marine, freshwater and subterranean systems
- A methodology applicable from sub-national to global scales
- Able to use historic and present day data as well as future projections



Canaima National Park, Venezuela © Rebecca Miller

[www.iucnredlistofecosystems.org](http://www.iucnredlistofecosystems.org)

41.3 % of our planet's land is made of drylands.  
One third of the world's population live in it

Dryland poverty in these countries has great implications for biodiversity conservation, and is exacerbated by underinvestment and political marginalization of dryland people, compounded by high population growth and changing climate patterns. Drylands in richer countries are confronted with different challenges, including land use changes associated with out-migration and capital intensification, and dependence of a largely urban population on limited ecosystem services.

### Sustainable dryland management

The Global Drylands Initiative is the IUCN Focal Point to the UNCCD, leading IUCN's efforts to influence the global discourse on Land Degradation and Sustainable Land Management. We are helping countries implement their commitments under the Convention, demonstrating good practices on the ground, influencing the science-policy interaction of the Convention itself, and working with other stakeholders to secure a Land Degradation Neutral World.

### Strengthening local governance

IUCN's programme of work in the drylands builds on and strengthens the local knowledge and institutions that enable people to govern their natural resources. Through work on the ground and at policy level we strengthen resilience and reinforce risk management by strengthening rights and reforming local governance. We bring actors together to improve planning and governance in the drylands, break down institutional and administrative barriers, and foster more effective natural resource management.

### Reinforcing Pastoralist Rangeland Management

The Global Drylands Initiative houses the World Initiative for Sustainable Pastoralism (WISP): a global knowledge and advocacy network that promotes sustainable pastoral development for both poverty reduction and environmental management. WISP catalyzes partnership between pastoralists, governments, Non-Governmental Organizations, International Organizations and the private sector, in order to create an enabling environment for sustainable management and conservation of the world's rangelands.



Drylands Initiative :  
[www.iucn.org/drylands](http://www.iucn.org/drylands)

WISP :  
[www.iucn.org/wisp](http://www.iucn.org/wisp)



Man herding cattle, Southern Sudan © John Woolwerth