

From grey to green

Nature-based solutions for disaster risk reduction and resilience building



Nature-based solutions for disaster risk reduction have emerged as viable alternatives to engineered approaches to hazard mitigation. They offer multiple benefits, are cost-effective and have a long-term perspective.

1. WHAT ARE WE TALKING ABOUT? MAKING USE OF WHAT NATURE OFFERS

In its broad sense Nature-based Solutions (NbS) are actions using nature and its ecosystem services to help societies address a variety of environmental, social and economic challenges in sustainable ways. Such ecosystem-based approaches to reduce disaster and climate risks have emerged over the past decade as an alternative to engineering measures, so-called grey infrastructure. After a series of serious flood events affected European countries in the late 1990s, European countries such as Netherlands, Switzerland and Germany started to promote nature-based solutions and river revitalisations as measures to reduce flood risk. Internationally, the year 2015 marks an important milestone in the take-up and public recognition of nature-based solutions, as global frameworks such as the Sendai Frame-

work for DRR 2015–2030, the Convention on Biological Diversity, the Ramsar Declaration and the Sustainable Development Goals, all promote ecosystem-based approaches or NbS to reduce disasters and climate risks. The **main challenge** relates to NbS for DRR being a relatively new field and thus a lack of guiding materials, robust data and tested methods prevail that hamper larger scale take-up and promotion of NbS as alternatives to grey infrastructure. The latter requires sector-specific knowledge, while NbS relate to technical expertise and the ability and willingness to take an integrated perspective. Timing is another challenge: the protective function of trees develops over years and new practices in accord with nature take time to be ingrained in people's minds.

2. WHY NBS FOR DRR? MULTIPLE BENEFITS

Nature-based solutions for DRR provide multiple benefits and address a number of societal challenges simultaneously. Regarding disasters, ecosystems can reduce the exposure to natural hazards, act as natural buffers against them while

at the same time conserving biodiversity, improving water and soil conditions, and strengthen livelihoods of the local population.

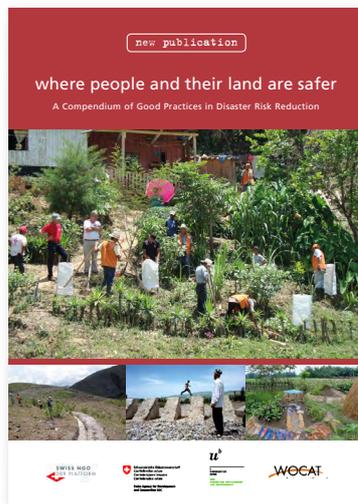


3. WHAT WORKS? PRACTICAL REFERENCE FOR NBS FOR DRR

In 2016/17, member organisations and partners of the Swiss NGO DRR Platform documented and analysed over 30 DRR practices in 11 countries in Africa, Latin America and Asia, applying the standardized procedures from WOCAT (World Overview of Conservation Approaches and Technologies). Initially developed to document **Sustainable Land Management** (SLM), WOCAT also allows to capture the value of nature-based solutions for DRR and to document the important links between SLM and DRR.

The result of joining the communities of practice is the publication **“Where people and their land are safer- Compendium of Good Practices in DRR”**, which was elaborated together the Centre for Development and Environment (CDE) of the University of Bern. The documented DRR measures relate to the use and management of land resources and describe best practices for the prevention, reduction, and management of disaster risks, highlighting the potential of Sustainable Land Management for DRR.

The publication shows how simple, cost-effective measures can substantially reduce the impacts of repeated small-scale disaster events. The publication is a reference **tool for practitioners** – such as technicians, advisors, development planners or consultants of humanitarian and development institutions – from different domains and sectors – DRR, water, food security, agriculture – to integrate nature based solutions for risk reduction in the planning, design and implementation of projects for the replication and up- scaling of proven practices.



→ Download the publication
<http://drrplatform.org/publications>



Examples of NbS for DRR:



Slope bioengineering: Combines planting of deep-rooted grasses with simple civil engineering structures as DRR measure.

(photo: Honduras, © Swiss Red Cross)



Water management: Using natural structures for water retention and adapted agriculture as drought risk mitigation.

(photo: Mali, © Caritas Switzerland)



Integrated watershed management: reforestation of slopes with multi-use species and conservation farming reduce flood risk and generate income.

(photo: Tajikistan, © Caritas Switzerland)

4. WHERE TO GET MORE INFORMATION? FURTHER WEB-REFERENCES

- [1] Swiss NGO DRR Platform (events, publication, learning material: <http://drrplatform.org/>)
- [2] World Overview of Conservation Approaches and Technologies (WOCAT) www.wocat.net
- [3] Ecosystems for Adaptation and Disaster Risk Reduction (PEDRR) <http://pedrr.org/>

- [4] World Business Council for Sustainable Development (WBCSD), Natural infrastructure for business www.wbcsd.org/Clusters/Water/Natural-Infrastructure-for-Business
- [5] Ecosystems protecting infrastructure and Communities (EPIC) lessons learned and guidelines for implementation, IUCN, Switzerland: <https://portals.iucn.org/library/sites/library/files/documents/2017-045.pdf>

5. WHAT ARE FACTORS OF SUCCESS FOR NBS? THEMATIC RECOMMENDATIONS



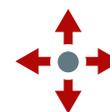
N – NETWORKS of communities

NbS covers a broad range of sectors and domain with according practitioners and policy-makers. At the practical level there is a potential for experience exchange, mutual and joint learning. NbS offer options for partnerships and collaboration between technicians, civil society, private sector. In order to promote people-centred action on the ground, networks and alliances help to bundle efforts and advocate jointly with decision makers at different levels.



B – BENEFITS of NbS

Analyse the costs and benefits of NbS for a better understanding. Valuate multiple benefits of NbS by considering environmental and social aspects beyond risk reduction values for people's livelihood, water cycles and agricultural production. These co-benefits are an inherent builder of sustainability. Provide evidence of multiple benefits; illustrate field experience and document show-cases. Appreciate benefits not only in terms of the result – the practical measure -but also the process – the joint collaboration between actors.



S – SCALING for impact

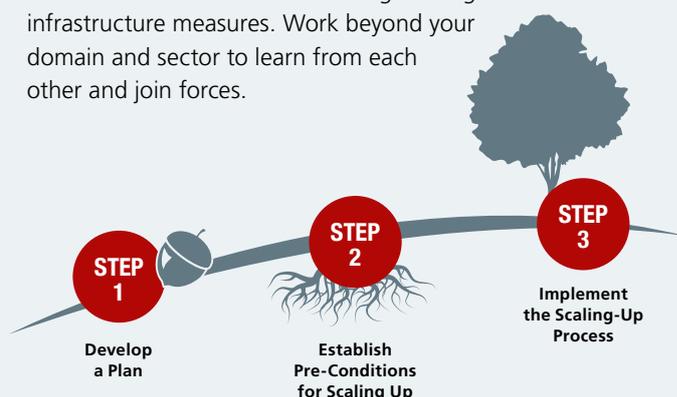
To harvest the benefits of NbS, these have to be brought to scale. Often we start at the local level, but replication and scaling up is crucial. A broader and thorough risk understanding is fundamental. Even if the intervention might be local, assessments should be expanded to the whole picture including ecosystems' value. For replication local ownership and technical knowledge are essential. Partnerships can foster scaling up processes.

6. WHICH WAY FORWARD?

ADVOCACY MESSAGES FOR KEY STAKEHOLDERS TO PROMOTE NBS FOR DRR

- **Private Sector:** Invest in nature-based solutions, it is worth it! Therein lies a long-term value, which does not depreciate over time.
- **Government:** Provide the enabling environment that nature-based solutions need through policies, financial incentives and exchange between departments of different sectors. Invest in resilient land for resilient people in development planning processes.
- **Donors:** Promote not only grey or green measures, but rather a hybrid combination to address intensive and extensive disaster and climate risks.
- **Civil society:** Do not wait for solutions, but mobilise existing labour and knowhow to implement nature based solutions at own reach. Validate and promote local indigenous knowhow.
- **Academia & Education:** Document systematically good practices. Collect qualitative and quantitative data and facts as baseline for the effectiveness of NbS.

- Provide evidence for multiple benefits of NbS. Fine-tune approaches and tools for valuation. Integrate an ecosystem perspective into (engineering) curricula. Promote learning and knowledge sharing on NbS.
- **Engineers & technicians:** trust in NbS as valid alternative or combination element to civil engineering infrastructure measures. Work beyond your domain and sector to learn from each other and join forces.



7. WHO ARE WE?

THE SWISS NGO DRR PLATFORM; A THEMATIC NETWORK FOR RESILIENCE

The Swiss NGO DRR Platform is a network of Swiss-based NGOs dedicated to increasing the resilience of women, men and children, communities and governments to disaster risk reduction (DRR) and climate change adaptation (CCA). For us, NbS for DRR is a core concern in our work to

promote integrated risk management with a strong focus on the preventative force of nature.

Explore our website www.drrplatform.org, download relevant publications, learning material and participate in one of our events on NbS for DRR and beyond.