



CLIMATE CHANGE ADAPTATION

CASE STUDY Restoring 'the rainforests of the seas'

The climate change we are experiencing is unprecedented in human history and has dramatic implications for every aspect of life on earth.

Altered and more extreme weather patterns are already in evidence. And, even if we meet the Paris Agreement's goal of limiting global temperature rise this century to 2°C, the impacts of climate change – from more-intense storms, to longer droughts and rising sea levels – are set to increase.

Action is needed now to reduce our vulnerability and increase our resilience to these changes. Without united efforts to adapt to climate change, the consequences for our societies and economies could be disastrous. This is particularly important in poorer and less-developed parts of the world, where weak infrastructure and scarce financial resources make countries especially susceptible to climate change.

With the support of the Global Environment Facility (GEF), UN Environment's Climate Change Adaptation Unit is working to help vulnerable countries and communities around the world to meet these challenges.

With over eight years of successful partnership, UN Environment and the GEF have shown that together we have the knowledge, connections and experience needed to assist vulnerable countries to move toward climate resilience and a sustainable future.

Ghostly landscapes of dying trees, murky water and barren soils have replaced large parts of the once-lush mangrove forests of Southeast Asia. Known as 'the rainforests of the seas', these forests provide a vital natural defence against storm surges, erosive waves, and land subsidence.

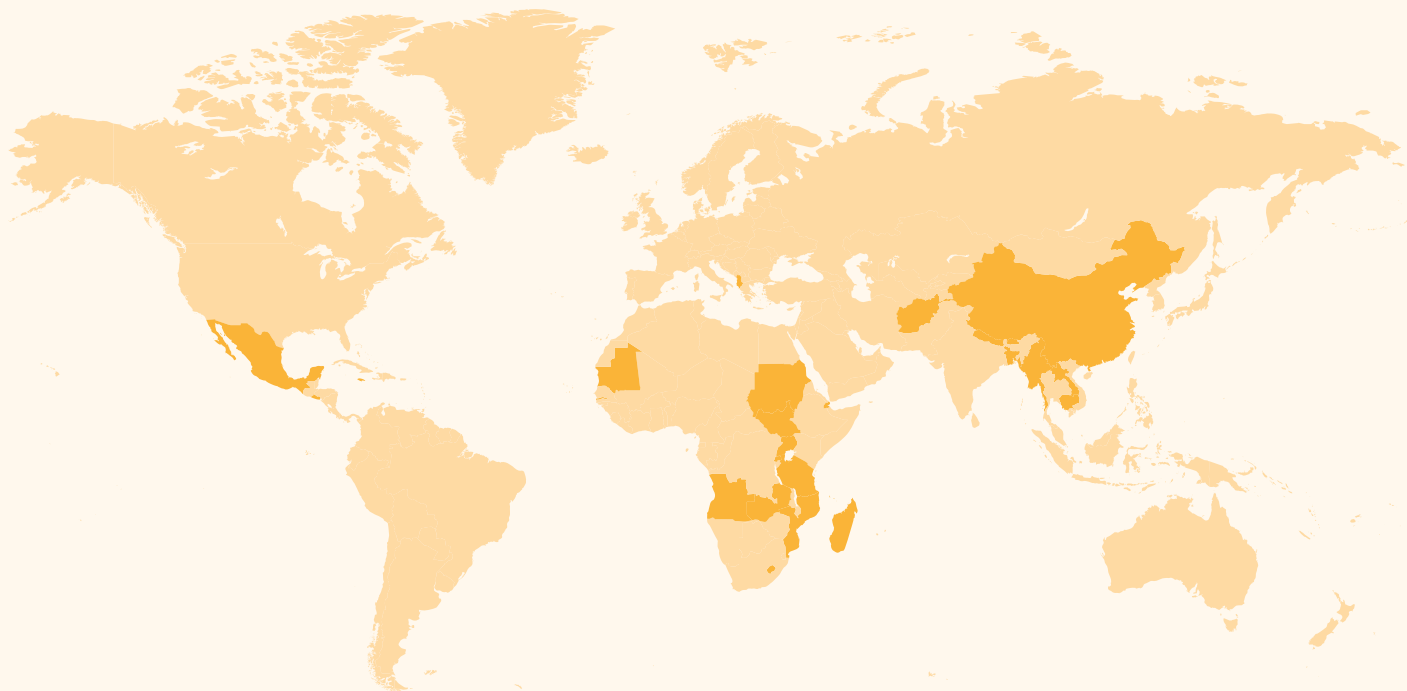
In recent years, harvesting for charcoal production and clearance for shrimp farming have severely damaged this natural barrier. Without it, local communities are particularly vulnerable to the effects of climate change. The coastal areas are increasingly subject to heavier rainfall, which brings greater risk of flooding, and rising sea levels that lead to salination of their water supplies. The mangroves are sorely needed.

The UN Environment-GEF partnership has been working with the Cambodian Ministry of Environment under the Vulnerability Assessment and Adaptation Programme for Climate Change to protect and rehabilitate mangroves. One activity has assisted local people to replant 75 hectares of mangroves in pilot areas in Koh Kong Province. Here, the communities that once cut down the mangroves to make charcoal have become committed custodians, protecting their unique habitat and ecosystem.

The programme, which developed four coastal adaptation plans and

revised planning policy to include climate change adaptation considerations, has had other benefits for the community. Water tanks now provide enough water for household needs and vegetable production in the dry season. Households have received training and support to diversify their food production and protect their livelihoods in times of drought. Fifteen hectares of coastal protection dyke have been stabilized by planting trees and a further 7.5 km stretch of coastline has been rehabilitated to protect against flooding.

This is just one example of a project funded through the GEF-administered Least Developed Countries Fund, which specifically addresses the needs of countries that are especially vulnerable to the impacts of climate change. To date UN Environment has supported over 21 least developed countries, small-island developing states and other developing countries to access over \$100 million from the GEF Least Developed Countries Fund and Special Climate Change Fund.



■ UN Environment-GEF Climate Change Adaptation project countries

The UN Environment-GEF partnership in Adaptation

With 32 projects currently being implemented globally, the UN Environment-GEF partnership has helped more than 25 countries adapt to the challenges of climate change to date.

Projects range from small-scale activities that have helped communities to improve their climate change resilience, to regional and global initiatives that build the knowledge base, develop capacity and guide policy in this crucial area.

To date, the GEF has invested more than \$173 million in UN Environment-supported climate change adaptation projects.

The UN Environment-GEF partnership focuses on four main approaches:

- Developing methods and tools to help adaptation planning and decision-making
- Helping countries overcome the barriers to implementing their adaptation solutions by improving access to information, facilitating policy development and easing access to finance
- Improving the science-policy interface in adaptation policies and planning
- Enhancing climate resilience through planning, piloting and testing ecosystem-based adaptation, and so reducing losses to people’s livelihoods and the economy

Ecosystem-based adaptation is an approach recognizing that healthy ecosystems and biodiversity can enhance natural resilience and help people adapt to the adverse effects of climate change (for example, restoring coastal ecosystems to enhance storm resilience or sustainable management of grasslands to make them stronger in dry spells). This “nature-powered adaptation” is one of three emerging areas for innovation identified in the GEF climate change adaptation strategy. UN Environment stands at the forefront of this field, raising awareness on climate risks and adaptation strategies, gathering the evidence needed to develop successful approaches and implementing projects on the ground.

Overall, the work of the partnership is closely aligned with the UN Framework Convention on Climate Change. Its activities focus on assisting countries with adaptation, mitigation and the transition to long-term sustainability.

All dollar (\$) amounts refer to US dollars.



Why UN Environment?

The strengths that UN Environment bring to our partnership with the GEF lie in three main areas:

- Enabling countries to integrate adaptation considerations into policymaking
- Providing countries with methods and tools to support their decision-making
- Our more than 40 years of global project implementation experience



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Global policy



A world leader in science-based environmental policy, UN Environment has been a key partner in negotiating and implementing a range of Multilateral Environmental Agreements and other climate change-related instruments. These include the:

- UN Framework Convention on Climate Change (the GEF serves as the financial mechanism)
- Intergovernmental Panel on Climate Change (established by UN Environment and the World Health Organization)
- Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas (Barcelona Convention)
- Alpine Convention

Technical expertise and resources



- **Global Adaptation Gap Reports:** A series of annual publications aimed at highlighting shortfalls in the finance, technology and knowledge that the developing world needs to adapt to climate change. These reports have been widely cited in global media and during climate negotiations
- **Global Adaptation Network:** UN Environment plays a leading role in this network, which is working to catalyze adaptation action through intra-regional and cross-regional knowledge exchange
- **Ecosystem-based Adaptation:** As a world leader in applying ecosystem-based approaches to enhancing climate resilience, UN Environment provided technical guidance on the operational guidelines for Ecosystem-based Adaptation adopted by the GEF in 2012 and has been instrumental in promoting the concept internationally

Project highlights



- **Reducing Vulnerability to Climate Change in Rwanda:** This Least Developed Countries Fund project rehabilitated 1,373 hectares of the Gishwati ecosystem in the northwest of Rwanda to reduce the vulnerability to increased floods and droughts of both the ecosystem and the people that derive their livelihoods from it. This project resulted in a significant reduction in vulnerability and a measurable increase in adaptive capacities, and established an early warning and disaster preparedness system
- **National Adaptation Planning Global Support Programme:** A project co-implemented with the UN Development Programme, the activities cover 22 countries in Africa. The programme identifies climate change adaptation needs, enabling countries to implement strategies and policies to address them. It creates regional knowledge networks and produces National Adaptation Plan roadmaps, training modules (including online training), tools, resource materials and case studies
- **Ecosystem-based Adaptation through South-South Cooperation (EbA South):** A 'first mover' in catalyzing global and regional collaboration on Ecosystem-based Adaptation under GEF guidelines, EbA South is assisting vulnerable communities in Africa and the Asia-Pacific to adapt to climate change, with a focus on South-South learning. Specific initiatives include community-based watershed restoration in Nepal, restoring 30 hectares of mangrove forests in the Seychelles and establishing 450 hectares of multi-use green belt in Mauritania using native drought-resistant species





Towards a sustainable future

In an ideal world, we could halt climate change and reverse its effects. But we do not live in an ideal world. Adaptive coping strategies will be needed to meet changing climate patterns for many years to come.

According to UN Environment's 2016 Adaptation Gap Report, the cost of adaptation in developing countries could be up to five times higher than previously estimated, reaching up to \$500 billion annually by 2050. This highlights the size of the challenge we are facing. The UN Environment-GEF partnership is here to meet that challenge.

Building on past successes, future partnership activities will focus strongly on country-specific projects and ecosystem-based adaptation approaches. These initiatives will:

- Facilitate countries' access to climate finance to implement their National Adaptation Programmes of Action and advance their adaptation planning and institutional development

- Focus on the restoration and sound management of ecosystems as an essential part of sustainable development and adaptation to climate change
- Strengthen the science-policy interface by clearly defining the meaning of Ecosystem-based Adaptation and showing evidence of its effectiveness in all sectors
- Develop guidance materials for country programming, and promote the use of Ecosystem-based Adaptation in climate change adaptation strategies globally

From ecosystem degradation to reduced food security to natural disasters, climate change poses a host of threats to developing and developed countries alike. UN Environment and the GEF are committed to helping vulnerable countries build resilience to our changing climate, protecting agriculture and livelihoods while working together to meet the targets of the 2030 Agenda for Sustainable Development. Together, we have the tools, experience and know-how to face this challenge.

To find out how to work with us, please contact:

Jessica Troni

GEF Portfolio Manager, Climate Change Adaptation

Tel: +254 20 762 3794

Email: jessica.troni@unenvironment.org

UN Environment

P.O. Box 30552 - 00100

Nairobi, Kenya

