Federal Ministry
for Economic Cooperation
and Development

WWF

IUCN

MANGROVES – A LIFE-SAVING COASTAL ECOSYSTEM

Scaling up protection and restoration for achieving the SDGs

Top: Local couple in their dugout canoe by paddling by the mangroves, Papua New Guinea. 2010.
© Jürgen Freund / WWF

Bottom: Small mangrove islet and individual red mangrove tree in the mangrove lagoon, Belize.
© naturepl.com / Tim Laman / WWF

Coastal areas are the crucial interface between the two major elements that cover our planet. They provide ground for various ecosystems and biodiversity. In developing countries, many coastal communities live in close vicinity of these areas and rely on the resources of marine and coastal ecosystems to secure food and income. Ecosystems close to shore are however greatly under pressure from varying economic interests and development needs.

Almost half of the global population lives within a distance of 150 km to the coast. The majority of urban centers concentrate at coastal locations due to trade traffic and fishery. In addition, coastal areas also serve a variety of recreational purposes, attracting millions of tourists who leave behind their environmental footprints. In consequence, massive utilization pressure bears down on coastal ecosystems, which are easy to exploit and can be competitors in terms of land use – as in the case of mangroves. This led to a continuous overexploitation, degradation and destruction of the world's mangrove forests over the past decades.

A global commitment to conserve, protect and restore mangroves is needed to safeguard this unique ecosystem. The German Federal Ministry for Economic Cooperation and Development (BMZ), World Wide Fund for Nature (WWF) and the International Union for the Conservation of Nature (IUCN) see the urgent need to stop the ongoing loss of mangroves and therefore join their forces within a new cooperation on mangrove conservation.

Mangroves secure coastal livelihoods

Mangroves are salt-tolerant plants that – as of today – cover more than 15 million ha of tropical coastal areas worldwide. Even though they make up only 0.1 % of the global landmass, mangrove forests are one of the Earth's most climate resilient, productive and biodiverse ecosystems. More than 100 million people live within a vicinity of 10 km from mangroves and depend on their ecosystem services. The conservation and restoration of mangroves is thus an important contribution to the achievement of the Agenda 2030 of the United Nations and the therein defined Sustainable Development Goals (SDGs) – above of all SDG 14 on the protection and sustainable use of our oceans and marine resources.

Biodiversity and productivity

Mangroves create one of the most species-rich habitats worldwide. Next to a vast number of other marine organisms, almost 10 % of the currently known fish species make immediate use of mangrove systems[1]. Their high nutrition supply and the protective character of their root system make mangroves an important nursery ground for fish and crustaceans. Endangered mammals such as the Bengal tiger shelter in mangrove forests. Through the exchange of nutrients and the migration of species, mangroves are strongly intertwined with other coastal and marine ecosystems such as coral reefs and seagrass beds. Considering the facts, mangrove protection adds notably to the conservation of biological diversity as targeted by SDG 15 (halt biodiversity loss).

Climate change mitigation and adaptation

Intact mangrove ecosystems have remarkable climate change mitigation and adaptation capacities. Their carbon storage capacity is 3 to 5 times higher than the one of terrestrial forests. They have the ability to 'grow up' as sea levels rise, by trapping sediments and raising their root beds. By reducing wave height by 13–66 % per 100 m and storm surge water depth by 5–50 cm per km , mangroves can significantly reduce the impacts of flooding in coastal areas. This function is of special relevance for developing coastal states and small islands. The considerable capacities of mangroves have to be taken into account for the implementation of SDG 13 (climate change adaptation and mitigation).

Food and income security

In total, mangrove forests provide at least US $1.6 billion each year in ecosystem services[3]. Mangrove resources are used directly by processing mangrove wood to charcoal and other forestry products, while a large share of global fishery depends directly or through food chains on mangroves – some scientific estimates amount up to 80 %[4]. Small-scale fishery accounts for 90 % of the people working in fishery worldwide[5] and is especially common in developing countries. As fish productivity is linked to the total area and status of mangroves[6], they play an important role for food and income security in those countries. Thus, mangrove protection has significant potential to contribute to SDGs 1, 2 and 8 (end poverty and hunger, foster decent work and economic growth).

From top to bottom:
1 *Mangroves in the Quirimbas National Park, Mozambique. © Uwe Johannsen / WWF*
2 *Semipalmated sandpipers flying through the coastal swamps of French Guiana. © Roger Leguen / WWF*
3 *Roots of a black mangrove tree below sea level, Malaysia. 2009. © Jürgen Freund / WWF*
4 *Mangrove nursery in the Sine Saloum Delta, Senegal. © Uwe Johannsen / WWF*
5 *Fishermen in shallow coastal area, Senegal. © Uwe Johannsen / WWF*

From top to bottom:

1 *Woman with axe in mangrove forest in Mozambique. © WWF-US / James Morgan*

2 *Shrimp ponds carved out of mangrove forest, Malaysia. 2006. © naturepl.com / Tim Laman / WWF*

3 *Fishing boat refurbishment in coastal community, Senegal. © Uwe Johannsen / WWF*

4 *Planted mangroves grow on former clearance area, Madagascar. © Uwe Johannsen / WWF*

5 *Extending and recovering mangroves, Sine Saloum Delta, Senegal. © Uwe Johannsen / WWF*

The global destruction of mangroves continues

Unsustainable use and increasing economic development pressure on mangroves have led to an alarming loss of global mangrove cover. Nearly half of all mangrove forests have disappeared since the mid-twentieth century. The global loss rate of mangroves is 3 to 5 times higher than the one of terrestrial forests. Thereby, the destruction of mangrove forests is responsible for about 10% of global CO_2 emissions caused by deforestation – 240 million tons of CO_2 per year[7]. Loss rates are extremely high in South-East Asia, the Caribbean and the Pacific. Coastal states in Sub-Saharan Africa also show worrying loss rates. Main causes are the logging of mangroves for timber and charcoal production and the extension of usable areas for settlements, agriculture and aquaculture. Between 1980 and 1990 alone, about 38 % of the global mangrove area was degraded or lost through shrimp farming[8].

Approximately 25 % of all remaining mangrove areas worldwide are managed as part of an estimated 1,200 protected areas[9]. Many international and local organizations and initiatives have put ongoing effort in the protection and restoration of mangroves over the past decades. Partially, mangrove forests are recovering or even extending, e. g. in Puerto Rico, Brazil and Bangladesh. These successes however do not counterbalance the overall mangrove cover decrease.

BMZ, WWF and IUCN engagement for mangrove protection

Currently, German development cooperation supports about 40 projects in more than 15 countries that contribute to the protection or restoration of mangroves. This engagement tackles e. g. the improvement of the institutional settings, the introduction of integrated planning approaches or the establishment of coastal protected areas.

WWF's existing activities on mangrove restoration and protection includes active work with local communities in more than 20 countries. WWF is also active in global partnerships on mangrove conservation including the Partnership on Coastal Resilience, the International Partnership for Blue Carbon and the Global Mangrove Alliance (GMA)[10].

The conservation and restoration of mangroves play a significant role in the climate mitigation efforts of IUCN, such as through the Blue Carbon Initiative and its work on Ecosystem-based Adaptation (EbA). IUCN also supports governments in investing and managing coastal ecosystem conservation via initiatives like "Mangroves for the Future" (MFF).

SAVE OUR MANGROVES NOW!

The ongoing loss of mangroves gives reason to boost the existing efforts and to bundle the power of stakeholders. BMZ, WWF and IUCN join their forces to contribute to the existing global efforts to halt the decrease of mangrove habitats. Up-scaling of successful protection and restoration measures and initiatives is at the core of our ambitions.

BMZ decided to increase its commitment for mangrove protection. With a view to enhance awareness, commitment and cooperation for mangrove protection among partner countries, donors and civil society, BMZ and its partners are beginning a new cooperation on mangrove conservation.

Major goals:

» The international community is aware of the importance of mangroves for our planet.
» Mangrove protection and restoration are an integral part of relevant international agreements.
» The work of existing initiatives on mangroves is broadly supported and up-scaled.
» Mangrove protection in the Western Indian Ocean Region is enhanced.

Fields of action:

1. Embed a global goal for mangrove protection in political agendas

The GMA set a target of increasing the global area of mangrove habitat 20 % over current extent by 2030. BMZ, WWF and IUCN support this target and will work towards its integration in relevant international agreements as well as national political agendas. Raising awareness among political decision-makers about the importance of mangroves on a global scale is part of our core endeavors.

2. Pool leading expertise and enhance knowledge-sharing

To foster synergies, existing mangrove protection efforts of relevant stakeholders such as the GMA will be supported. Enhanced knowledge exchange and the closure of existing knowledge gaps through the elaboration of target-oriented studies will be a major contribution of the new cooperation. The establishment of a joint online-platform will simplify access to information and collected knowledge on mangrove conservation – for practitioners as well as for political decision-makers.

3. Applicate and disseminate best practices in the Western Indian Ocean

The newly initiated cooperation will apply best practices, develop regional networks as well as mainstream mangrove protection into national development plans and Nationally Determined Contributions (NDCs) under the Paris Agreement in the Western Indian Ocean Region. Thereby, BMZ and its partners aim at the development of local, national and regional capacities and the improvement of political framework conditions for the effective protection and restoration of mangroves.

From top to bottom:
1 Community mangrove restoration in Madagascar. © WWF-Madagascar
2 Joyful family from a coastal community in Tanzania. © Uwe Johannsen / WWF
3 Mangrove propagules sprouting while still on the tree, Malaysia. © naturepl.com / Tim Laman / WWF

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10 Conservation International (CI), The Nature Conservancy (TNC) and World Wide Fund for Nature (WWF) announced the founding of the Global Mangrove Alliance (GMA) in February 2017.

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