

WHY IS THERE A NEED FOR PROTECTION?

Mangroves

Mangrove ecosystems are made up of more than 70 species of salt-tolerant plants¹ and – as of today – cover more than 14 million ha of tropical and subtropical coastal areas and river deltas worldwide². This diverse group of plants is specialized to thrive in harsh coastal conditions. Even though they make up only 0.1 % of the global landmass³, mangrove forests are one of Earth's most climate resilient, resource-rich and biodiverse ecosystems.

WHAT MAKES MANGROVES VALUABLE TO NATURE AND PEOPLE?

The benefits people derive from mangroves:

THREATS

Mangroves are threatened. Drivers of mangrove loss:



MANGROVE LOSS
35% between 1980 and 2000⁵ – the equivalent of losing almost 150,000 football fields annually⁶, and 4 times higher than overall global forest loss⁷.



AQUACULTURE
causes more than half of mangrove losses globally, mostly due to shrimp culture⁷.



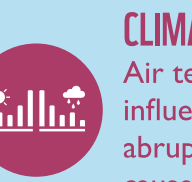
AGRICULTURE
Conversion to rice paddies is responsible for 88% of mangrove loss in Myanmar¹¹.



LOGGING
can cause altered species composition, fragmentation and total clearance of mangrove forests.



COASTAL DEVELOPMENT
Urbanisation drives mangrove loss and degradation; human population density in coastal regions is 3 times higher than global average¹².



CLIMATE CHANGE
Air temperature and rainfall regimes influence global mangrove distribution¹⁵; abrupt changes in sea level are a primary cause of local and regional extinctions¹⁵⁻¹⁷.



POLLUTION
Mangrove's aerial roots, through which they obtain oxygen, can easily be smothered and clogged by sediment, solid waste and oil¹⁴.



Mangroves are climate-heroes

Climate regulation

The carbon storage potential of mangroves is 3-5 times higher than that of tropical upland forest due to strong carbon storage in the soil⁸; CO₂ released by global mangrove loss annually could be as high as the annual emissions of Australia⁹⁻¹⁰.

Wood

Its density makes mangrove wood a valued source of timber and fuel.

Fisheries

More than 3000 fish species are found in mangrove ecosystems¹³.

Mangroves provide livelihoods for over 120 million people¹⁴

Mangrove ecosystem services

are worth US\$ 33,000-57,000 per hectare per year¹⁴. Multiplied with the global mangrove area of 14 million hectares² – that's up to US\$ 800 billion per year.

Tourism

There are over 2,000 mangrove-related attractions globally, such as boat tours, boardwalks, kayaking and fishing¹⁸.

Coastal protection

Restoring mangroves for coastal defence is up to 5 times more cost-effective than "grey infrastructure" such as breakwaters¹⁹.

Water filtration

2-5 hectares of mangroves may treat the effluents of 1 hectare of aquaculture⁴.

Mangroves are a crucial component in the life cycle of tropical coastal ecosystems

Mangroves are strongly connected with other coastal and marine ecosystems such as coral reefs and seagrass beds. Mangroves prevent erosion and, often located at rivermouths, they filter and retain sediments and excess nutrients that would otherwise wash into the ocean.

They support a range of wildlife species, many of whom migrate between several ecosystems. Mangroves are particularly important as breeding areas for many fish and invertebrate larvae that at a later stage in their lifecycle may migrate to other coastal habitats or even offshore waters. Mangroves therefore constitute one pillar that secures many other habitats.

(1) Spalding et al., 2010 (2) Giri et al., 2011 (3) FAO, 2003 (4) Primavera et al., 2007 (5) Millennium Ecosystem Assessment, 2005 (6) 0.66% or 102,000 hectares annually (2000-2005): FAO, 2007 (7) Valiela et al., 2001 (8) In the Indo-Pacific region: Donato et al., 2011 (9) Up to 450 mio t CO₂: Pendleton et al., 2012 (10) In 2015: EDGARv4.3.2., 2018 (11) Over 2000-2012: Richards & Friess, 2016 (12) Small et al., 2003 (13) Sheaves, 2017 (14) UNEP, 2014 (15) Alongi, 2015 (16) Duke et al., 2017 (17) Lovelock et al., 2017 (18) Spalding et al., 2016 (19) In Vietnam: Narayan et al., 2016

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