

# MANGROVE PRINCIPLES

Guiding principles on sustainable mangrove ecosystem management



An initiative by:



Federal Ministry  
for Economic Cooperation  
and Development



Wetlands  
INTERNATIONAL

# INTRODUCTION

The fundamental objective of sustainable mangrove ecosystem management is to promote conservation, and where necessary restoration (or rehabilitation), and the sustainable use of mangrove ecosystems and their associated habitats to benefit local to global populations and their livelihoods. In many instances, sustainable mangrove ecosystem management can contribute to creating Nature-based Solutions to societal challenges, including climate change and biodiversity loss.<sup>1</sup>

The principles outlined in this document intend to complement existing agreements (e.g. [UNEA resolution](#) and [IUCN motion](#) on mangroves) by providing **guidance for national policy decision-makers responsible for conservation, restoration, protection and sustainable management of mangrove ecosystems.**

The presented principles are based on initial effort of the “[Save Our Mangroves Now!](#)” initiative by the Federal German Ministry for Economic Cooperation and Development (BMZ), IUCN, Wetlands International and WWF. With the kind support of numerous expert reviewers from academia, NGOs and IGOs, these guiding principles have grown to a joint effort of the mangrove community around the world. They are meant to remain at a generic level and intend to provide overarching guidance. Further guidance on single aspects of each principle can be [found here](#).

The Mangrove Principles are underpinned by sustainable development principles; namely securing economic development, social equity and justice, and environmental protection<sup>2</sup>, and have been developed to reflect some of the globally recognized barriers to effective conservation of mangrove ecosystems. The 9 principles presented are categorized in **5 major fields of action towards Sustainable Mangrove Ecosystem Management:**

- I. Promote good governance – Policy and legal frameworks**
- II. Ensure a strong and just society – People’s participation and empowerment**
- III. Use sound science and knowledge – Maximized knowledge base for science-based arguments and capacity building**
- IV. Achieve a socially sustainable economy within environmental limits – Sustainable use of natural resources**
- V. Ensure sustainable conservation financing – Innovative approaches and benefit sharing**

<sup>1</sup> IUCN's Global Standard on NbS <https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs>

<sup>2</sup> Sustainable Development Principles that apply to conservation management of mangrove ecosystems: Principle of the **interdependence** of society, economy and the natural environment, Principle of **diversity** (biodiversity & diversity in social systems), Principle of **equity**: participation in decision making and benefit sharing (current and future generations – inter- and intra- generational), Principle of **precaution**: protection against uncertainty e.g. climate change, global pandemics.



## PROMOTING GOOD GOVERNANCE – POLICY AND LEGAL FRAMEWORKS

National and international policy and legal frameworks are required to provide overall guidance for the conservation and sustainable use of mangrove resources and to ensure protection for mangrove-associated biodiversity.

To achieve this, policy and legislation need to incentivise sustainable mangrove ecosystem management but also address threats and drivers of mangrove loss and degradation. Horizontal and vertical integration are key to successful governance of mangrove resources.

### **1. Adopt a dedicated national level policy or plan to compel and coordinate action, legislation and intersectoral incentives to conserve and sustainably manage mangroves in priority areas.**

Use existing legal frameworks, policies and regulations relating to fisheries and aquaculture, climate change, forestry, protected areas or other effective area-based conservation measures (OECMs), integrated coastal zone management, and coastal development, among others, to promote sustainable management, conservation and protection of mangrove ecosystems.

Assess policy and regulation needs and effectiveness regarding (potential) drivers of mangrove loss and degradation such as pollution, coastal development, tourism, etc.).

Conduct policy analysis to identify any mutually conflicting policies (such as water, irrigation, hydropower, agriculture etc.) that could hinder effectiveness of mangroves policies at national and regional levels. Address inter-sectoral challenges and differing priorities by inclusive consultation.

Use integrated spatial planning policy (e.g. marine spatial planning, integrated ocean management) to combine different needs and to promote area-based conservation and restoration planning in mangrove sites while safeguarding connectivity to and good state of adjacent ecosystems such as coral reefs, seagrass meadows, seaweed, etc.

Employ Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) policy (including an inclusive and transparent public consultation processes) in all relevant cases, both upstream and downstream, to protect mangroves and other coastal wetlands.



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Develop and implement a dedicated national level policy or strategic action plan such as a National Mangrove Action Plan and/or 'One Map Policy' with adequate resource allocation to guide and coordinate action to protect, restore and sustainably manage mangroves in priority areas and beyond.

Ensure that the national policy for mangroves is (i) based on solid science, (ii) and informed by data, a multi-stakeholder/ sector planning process and (iii) supports the designation of mangrove areas as protected areas or areas of OECMs.

Develop local-and entrepreneurial climate smart mangroves management plans through multi stakeholder management arrangements.

**2. Recognize the transboundary nature of mangrove ecosystems and their threats as well as and the need for effective cross-sectoral and multi-level coordination and cooperation through integrated management approaches.**

Recognise the transboundary nature of mangrove ecosystems (land to sea, inter-jurisdictional; international, national, provincial and local boundaries) by adopting an integrated management approach, harmonizing responsibilities of government agencies to avoid conflict and overlap, and ensuring effective engagement of civil society, including local communities. An integrated management approach refers to the horizontal and vertical integration of institutional arrangements from national to local level authorities, across different policies and sectors and jurisdictional boundaries and within the development partners' community.

Ensure effective coordination across government agencies through mechanisms of cooperation such as interagency agreements, decentralized management authority, communication, data and information sharing and frameworks that mainstream mangrove conservation considerations across sectors and clarify allocation of agency mandates in relation to mangroves.

Adopt measures to ensure accountability, transparency and participation for long-term conservation management of mangrove ecosystems (e.g. integrated and decentralized management planning and implementation and legal frameworks supporting community co-management for mangrove areas).



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### **3. Ensure that mangrove conservation and restoration actions & national commitments and obligations to international conventions mutually support and reinforce each other.**

Ensure that conservation and restoration actions support and adhere to national policy commitments/ obligations to Multilateral Environment Agreements (MEAs) such as United Nations Framework Convention on Climate Change, Paris Agreement, the Convention on Biological Diversity and the Ramsar Convention, as well as to the Sustainable Development Goals and other relevant global and regional policy commitments.

Integration of action for sustainable mangrove ecosystem management into NDCs, NBSAPs and other national implementation plans for international agreements ensures synergies. Alignment of indicators supports coherence. These commitments and obligations shall themselves recognize the importance of mangroves.



## **ENSURING A STRONG AND JUST SOCIETY- PEOPLE'S PARTICIPATION AND EMPOWERMENT**

Mangroves provide important socio-economic benefits to local communities worldwide; it is essential therefore to manage mangrove ecosystems and the aquatic and terrestrial resources they sustain in a sustainable manner to maintain and improve the livelihoods of communities.

### **4. Ensure that conservation is people-centred, meeting both environmental and socio-economic goals, and that legally recognized community stewardship is in place wherever-possible.**

Foster participatory and long-term cooperation through community-based (co-) management arrangements, ensuring community rights and responsibilities to access, control and manage land and other resources (including fish stocks) are respected, and legal stewardship of resources is secured.

Ensure transparency and awareness with respect to the legal basis that supports the involvement of communities in mangrove (co-)management. Communicate legal arrangements and mechanisms to local communities and ensure prior and informed consent (PIC) to enable their effective participation and engagement.



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Guarantee the communities' access to justice. In countries where there is no clear legal basis for community (co-)management a legal framework should be set up to ensure public participation and free and prior-informed consent, and, as possible, liaise with existing Community based Natural Resources Management Networks.

Employ participatory planning processes to achieve comprehensive understanding of the social and ecological characteristics of mangrove ecosystems in their particular context. This should include the assessment of specific threats and drivers of change that affect future management scenarios. Establish linkages and streamlined approaches aiming at equipping local authorities and communities with integrated and simplified actions plans.

Take action to fully realise the rights of women, girls, the youth, small-scale fishers and subsistence farmers, and other marginalized groups in environmental management decision-making by promoting people-centred conservation that promotes local sustainable development opportunities, increasing equality and equity in benefit sharing and reducing poverty and food insecurity.

Apply environmental and social safeguard policies to identify, avoid, mitigate or minimize adverse environmental and social impacts that may arise in the implementation of mangrove conservation/ restoration initiatives and to deliver best outcomes for people and the environment.



## USING SOUND SCIENCE AND KNOWLEDGE - MAXIMIZED KNOWLEDGE BASE FOR SCIENCE- BASED ARGUMENTS AND CAPACITY BUILDING

Mangrove survey, mapping, inventory, monitoring data and economic valuation are required to support the sustainable management of mangrove ecosystems. They provide the basis for strong advocacy and appropriate and well-designed action as well as for addressing capacity building needs.

### **5. Use sound natural and social science and knowledge, including traditional knowledge, for decision-making and best practice in mangrove conservation and restoration.**

Establish and maintain a national mangrove inventory to collect, manage and update existing data on mangroves, and ensure availability of scientific information to policy-makers and the public.

Establish baseline data and protocols for monitoring the state of mangroves, providing regular reports on the national state of mangrove health (extent, species diversity, distribution, conservation management status etc.). Take into account modelling results and scenarios on future developments that impact sustainable mangrove ecosystem management such as predictable climate change impacts (e.g. sea-level rise) or coastal development (potentially leading to coastal squeeze).

Promote the systematic monitoring and economic valuation of multiple and “bundled” ecosystem services that healthy, well-managed mangrove ecosystems provide (provisioning, supporting, regulating, cultural). Create the evidence base required for influencing policy decision-making. At the same time, be cognisant of the fact that monitoring and assessment of mangroves must be simple, inexpensive and reliable. Also, monitoring is not an end in itself but should inform and lead to appropriate action.

Work with academic institutions and civil society to ensure that policy-makers, government actors and the public have access to reliable, up-to-date and comprehensible scientific information on mangroves. Establish science-to-policy dialogues to ensure effective knowledge transfer. The overall approach to mangrove management should be a precautionary one, but a lack of scientific information should not be used as an argument for postponing or failing to conserve mangroves or to manage them sustainably.



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## 6. Make the economic and resilience case and build capacity based on sound science.

Recognise the importance of environmental economics in policy decision-making and make use of presenting human and financial gains and losses derived from sustainable or unsustainable mangrove ecosystem management. Conduct economic and resilience analysis of the contribution of national and transboundary mangroves to national economies in order to increase understanding of mangrove ecosystem values for maintaining biodiversity and livelihoods, ensuring food security, safeguarding assets like coastal infrastructure, etc.

Ensure public outreach and environmental education to achieve effective stakeholder engagement, building understanding and behavioural change required for sustainable mangrove conservation.

Recognise that capacity development for mangrove ecosystem management and awareness-raising about mangroves, as for climate and environmental practises in general, are needed at all levels, from decision-makers in national government to local government officials, community leaders and educational institutions.

Build capacity and awareness of national and local authorities, academia, private sector and civil society. Increase education and awareness of policy makers, government officials, academia and the public in relation to the ecological and economic values of mangroves, costs of degradation and removal, and opportunities/ models for sustainable resource use and integrated land-use planning as part of conservation practice.





## ACHIEVE A SOCIALLY SUSTAINABLE ECONOMY WITHIN ENVIRONMENTAL LIMITS- SUSTAINABLE USE OF NATURAL RESOURCES

### **7. Select the most appropriate and effective conservation management and restoration approach for each specific site based on a comprehensive understanding of the socio-ecological characteristics and drivers of change influencing the mangrove ecosystem.**

Before undertaking any restoration activity, the barriers to natural regeneration and regrowth of mangroves need to be identified. If those can be removed, the mangrove ecosystem may regenerate naturally which is considered the most sustainable restoration option.

Community-based Ecological Mangrove Restoration (CBEMR)<sup>3</sup> promotes the following best practice guidance:

- Consultation with local stakeholders to develop a comprehensive understanding of the socio-ecological nature of the site and issues/ drivers of change and develop a mangrove conservation management plan that identifies appropriate governance, alternative income generating activities and benefit sharing mechanisms, reduces or removes anthropogenic stressors and incentivises sustainable mangrove conservation.
- Restoration of bio-physical conditions; select an appropriate restoration site with adequate size; restore the hydrological and geomorphological conditions (natural flow of freshwater and seawater), ensure the restoration of natural species diversity and distribution using references from nearby mangrove areas.

Recognise the range of local livelihood opportunities associated with mangrove ecosystems. They offer unique prospects for sustainable business development for coastal communities but need to be planned and managed effectively to avoid issues of overexploitation and damage. An area based, multiple-use management approach, and as possible protected landscape/ seascape areas, should be considered in order to ensure sustainable mangrove management.

<sup>3</sup> From MAP



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## **8. Ensure application of sustainable use schemes and economic benefits for local communities.**

Make sure that any economic activity (e.g. ecotourism, integrated aquaculture or silviculture) conducted in and around mangroves follows sustainable and locally specific use schemes, avoiding alteration and preventing degradation of natural mangrove ecosystems and ensuring benefits to environmental conservation and socio-economic development, while avoiding negative impacts on other ecosystem services. In case current utilization is not sustainable, alternative practices in the use of mangrove resources by local communities or alternative income opportunities should be considered.

Establish mechanisms that ensure that economic benefits derived from planted/ restored mangroves are received by the local people involved in order to secure the sustainability of mangrove conservation programs. Land-holding and ownership or stewardship rights (user rights agreements for sustainable resource use) of planted/ restored /conserved mangroves have proven to be significant for enabling conditions for successful long-term conservation and sustainable use of mangrove ecosystems. Since mangrove conservation requires long-term maintenance, the expectations of the local people in terms of both short-term and long-term economic benefits to be obtained from mangrove rehabilitation and conservation must be addressed.

Increase efforts to improve education and job creation for mangrove resource-dependent communities living adjacent to mangrove conservation areas, embedding livelihoods and job creation into the broader context of national development



## ENSURE SUSTAINABLE CONSERVATION FINANCING - INNOVATIVE APPROACHES AND BENEFIT-SHARING

### 9. Apply appropriate conservation-financing and incentive-based mechanisms in sustainable mangrove ecosystem management, ensuring community rights and engagement and benefit sharing.

Identify and select amongst available sources of mangrove conservation-financing, including: multilateral public finance, bilateral public finance, domestic public finance, philanthropic finance and private-sector initiatives<sup>4</sup>.

Apply innovative financing mechanisms like public-private-partnerships, extended producer responsibility, community conservation funds and nature-based income generating activities, or blended finance concepts and novel opportunities for sustaining mangrove conservation efforts, incentivizing appropriate partnerships for implementation.

Identify appropriate incentive based / benefit sharing mechanisms (e.g. Payment for Ecosystem Services) for long-term effective community participation in mangrove restoration and conservation that supports self-mobilization recognising that community engagement is key for successful long-term conservation and management of mangrove ecosystems. Make conservation and climate financing available and accessible to communities.

Focus restoration investments in priority degraded mangrove areas with the highest natural regeneration and restoration opportunity potential, as identified through national strategies and integrated spatial planning processes, and supported by scientific and social-economic assessment.

<sup>4</sup> Financial mechanisms that support sustainable mangrove conservation include: Green bonds, carbon-based models, insurance, REDD+ program, eco-tourism, non-timber forest products (NTFPs), direct tax, corporate funding. A community's ability to execute each financial mechanism and the degree of benefit from each financial mechanism varies. Eco-tourism, NTFPs and corporate funding are examples that communities are more able to execute and benefit from.

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