



Aichi Biodiversity Target 11 Country Dossier: Côte d'Ivoire

With generous support from:



















TABLE OF CONTENTS

GLOSSARY	3
EXECUTIVE SUMMARY	5
Aichi Biodiversity Target 11 Elements: Current status and opportunities for action	5
INTRODUCTION	8
SECTION I: CURRENT STATUS	10
COVERAGE - TERRESTRIAL & MARINE	11
ECOLOGICAL REPRESENTATIVENESS - TERRESTRIAL & MARINE	15
AREAS IMPORTANT FOR BIODIVERSITY	20
AREAS IMPORTANT FOR ECOSYSTEM SERVICES	24
CONNECTIVITY & INTEGRATION	26
GOVERNANCE DIVERSITY	27
PROTECTED AREA MANAGEMENT EFFECTIVENESS	29
SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS	31
NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)	31
APPROVED GEF-5, GEF-6, & GCF PROTECTED AREA PROJECTS	32
OTHER ACTIONS/COMMITMENTS	33
ANNEX I	
FULL LIST OF TERRESTRIAL ECOREGIONS	36
REFERENCES	37

GLOSSARY

AZEs Alliance for Zero Extinction sites
CEPF Critical Ecosystem Partnership Fund

EBSA Ecologically or Biologically Significant Marine Area

EEZ Exclusive Economic Zone GCF Green Climate Fund

GD-PAME Global Database on Protected Area Management Effectiveness

GEF Global Environment Facility

IBA Important Bird and Biodiversity Area

ICCAs Indigenous and Community Conserved Area Area (may also be referred to as

territories and areas conserved by Indigenous peoples and local communities or

"territories of life")

IPLC Indigenous Peoples and Local Communities

KBA Key Biodiversity Area

MEOW Marine Ecosystems of the World

MPA Marine Protected Area

NBSAP National Biodiversity Strategy and Action Plan
OECM Other Effective Area-Based Conservation Measures

PA Protected Area

PAME Protected Area Management Effectiveness

PPA Privately Protected Area

PPOW Pelagic Provinces of the World ProtConn Protected Connected land indicator

SOC Soil Organic Carbon

TEOW Terrestrial Ecosystems of the World WDPA World Database on Protected Areas

WD-OECM World Database on Other Effective Area-Based Conservation Measures

Disclaimer

The designations employed and the presentation of material in this dossier do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Convention on Biological Diversity (SCBD) or United Nations Development Programme (UNDP) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The information contained in this publication do not necessarily represent those of the SCBD or UNDP.

This country dossier is compiled by the UNDP and SCBD from publicly available information. It is prepared, within the overall work of the Global Partnership on Aichi Biodiversity Target 11, for the purpose of attracting the attention of the Party concerned and other national stakeholders to facilitate the verification, correcting, and updating of country data. The statistics might differ from those reported officially by the country due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Furthermore, the suggestions from the UNDP and SCBD are based on analyses of global datasets, which may not necessarily be representative of national policy or criteria used at the national level. The analyses are also subject to the limits inherent in global indicators (precision, reliability, underlying assumptions, etc.). Therefore, they provide useful information but cannot replace analyses at a national level nor constitute a future benchmark for national policy or decision-making.

The preparation of this dossier was generously supported by: the Government of the Federal Republic of Germany, *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GMbH*; the European Commission; the Government of the United Kingdom of Great Britain and Northern Ireland; and the Government of Japan (Japan Biodiversity Fund). The dossier does not necessarily reflect their views.

This publication may be reproduced for educational or non-commercial purposes without special permission from the copyright holders, provided acknowledgement of the source is made. The SCBD and UNDP would appreciate receiving a copy of any publications that use this document as a source.

EXECUTIVE SUMMARY

This document provides information on the coverage of protected areas (PAs) and other effective area-based conservation measures (OECMs), as currently reported in global databases (the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM)). It also includes details on the status of the other qualifying elements of Aichi Biodiversity Target 11 based on this data. These statistics might differ from those reported officially by countries due to difference in methodologies and datasets used to assess protected area coverage, differences in the base maps used to measure terrestrial and marine area of a country or territory, or if global datasets differ from the criteria and indicators used at the national level. Where available, data from national statistics for the elements of Target 11 are included alongside records from these global databases. This dossier also provides a summary of commitments made under Aichi Biodiversity Target 11, and a summary of potential opportunities regarding elements of the target for future planning.

The dossier has been developed in consultation with the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), which manages the WDPA, WD-OECM and Global Database on Protected Area Management Effectiveness (GD-PAME). Parties to the CBD are requested to contact protectedareas@unep-wcmc.org with any updates to the information in these databases.

Aichi Biodiversity Target 11 Elements: Current status and opportunities for action

Coverage - Terrestrial & Marine

- **Status:** as of May 2021 (per the WDPA), terrestrial coverage in Côte d'Ivoire is 74,418.8 km² (23.0%) and marine coverage is 126.9 km² (0.1%); Côte d'Ivoire's national reporting notes that PAs cover 2,160,744.56 ha (or 6.7% of the national territory), with no marine nature reserves or national parks created, to date.
- Opportunities for action: opportunities for the near-term include updating the WDPA with any unreported PAs, and the recognizing and reporting OECMs to the WD-OECM. In the future, focus on relatively intact areas, while addressing the elements in the following sections, could be considered when planning new PAs or OECMs.

Ecological Representativeness-Terrestrial & Marine

- **Status:** Côte d'Ivoire contains 6 terrestrial ecoregions, 2 marine ecoregions, and 1 pelagic province: the mean coverage by reported PAs and OECMs is 22.9% (terrestrial), 0.2% (marine), and 0.0% (pelagic); 1 marine ecoregion and 1 pelagic province have no coverage by reported PAs and OECMs.
- **Opportunities for action:** there is opportunity for Côte d'Ivoire to increase protection in terrestrial and marine ecoregions and pelagic provinces that have

lower levels of coverage by PAs or OECMs. Ecoregions which currently have no coverage by PAs or OECMs are key areas for action.

Areas Important for Biodiversity

- **Status:** Côte d'Ivoire has 17 Key Biodiversity Areas (KBAs): the mean protected coverage of KBAs by reported PAs and OECMs is 73.9%, while 2 KBAs have no coverage by reported PAs and OECMs.
- **Opportunities for action:** there is opportunity for Côte d'Ivoire to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage.

Areas Important for Ecosystem Services

- **Status:** coverage of areas important for ecosystem services: In Côte d'Ivoire, 31.2% of aboveground biomass carbon, 24.9% of belowground biomass carbon, 23.6% of soil organic carbon, 0.5% of carbon stored in marine sediments is covered by PAs and OECMs.
- **Opportunities for action:** for carbon, there is opportunity for Côte d'Ivoire to increase PA and OECM coverage in both marine and terrestrial areas with high carbon stocks. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.
- For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

Connectivity and Integration

- **Status:** coverage of protected-connected lands is 7.2%. Several cross-border corridor projects are underway in Côte d'Ivoire and neighbouring countries.
- **Opportunities for action:** there is opportunity for a targeted increase in connecting PAs or OECMs and to focus on PA and OECM management for enhancing and maintaining connectivity. Improving connectivity increases the effectiveness of PAs and OECMs and reduces the impacts of fragmentation.
- As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8)

Governance Diversity

• **Status:** the most common governance type(s) for reported PAs in Côte d'Ivoire is: 7.8% under Government (Government-delegated management).

• **Opportunities for action:** increase efforts to identify the governance types for the 91.8% of sites that do not have their governance type reported. If applicable, explore opportunities for governance types that have lower representation

•

• There is also opportunity for Côte d'Ivoire to complete governance and equity assessments, to establish baselines and identify relevant actions for improvement. As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

Protected Area Management Effectiveness

- **Status:** National parks and nature reserves are subject to quarterly monitoring by the OIPR technical services. As of May 2021, 24.4% of terrestrial PAs and 0.0% of marine PAs have completed Protected Area Management Effectiveness (PAME) assessments reported in the GD-PAME.
- **Opportunities for action:** the 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs. Therefore, there is opportunity to increase protected area management effectiveness (PAME) evaluations for both terrestrial and marine PAs to achieve the target.
- There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

INTRODUCTION

The Strategic Plan for Biodiversity 2011-2020 was adopted at the tenth meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) held in Nagoya, Aichi Prefecture, Japan from 18-29 October 2010. The vision of the Strategic Plan is one of "Living in harmony with nature" where "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people" (CBD, 2010). In addition to this vision, the Strategic Plan is composed of 20 targets, under five strategic goals. Aichi Biodiversity Target 11 states that "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."

With the conclusion of the Aichi Biodiversity Targets in 2020, Target 11 on area-based conservation has seen success in the expansion of the global network of protected areas (PA) and other effective area-based conservation measures (OECMs). The negotiation of the post-2020 Global Biodiversity Framework (GBF) and its future targets provide an essential opportunity to further improve the coverage of PAs and OECMs, to improve other aspects of area-based conservation, to accelerate progress on biodiversity conservation more broadly, while also addressing climate change, and the Sustainable Development Goals. This next set of global biodiversity targets are to be adopted at the fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity. These new targets must aim to build upon lessons learned from the last decade of progress to deliver transformative change for the benefit of nature and people, to realize the 2050 Vision for biodiversity.

The United Nations Development Programme (UNDP) and the Secretariat of the Convention on Biological Diversity have developed the Aichi Biodiversity Target 11 Country Dossiers, which provide countries with an overview of the status of Target 11 elements, opportunities for action, and a summary of commitments made by Parties over the last decade. Each dossier can support countries in assessing their progress on key elements of Aichi Biodiversity Target 11 and identifying opportunities to prioritize new protected areas and OECMs.

This dossier provides an overview of area-based conservation in Côte d'Ivoire. Section I of the dossier presents data on the current status of Côte d'Ivoire's PAs and OECMs. The data presented in Section I relates to each element of Target 11. Section I also presents the PA and OECM coverage for two critical ecosystem services: water security and carbon stocks. In addition, the dossier presents potential opportunities for action for Côte d'Ivoire, in relation to each Target 11 element. The analyses present options for improving Côte d'Ivoire's area-based conservation network to achieve enhanced protection and benefits for livelihoods and climate change. Section II presents details on Côte d'Ivoire's existing PA and OECM commitments as a summary of existing efforts towards achieving Target 11. This gives focus not only to national policy and actions but also voluntary commitments to

the UN. Furthermore, where data is available, this dossier provides information on potential OECMs, Indigenous and Community Conserved Areas (ICCAs; also, often referred to as territories and areas conserved by Indigenous peoples and local communities or "territories of life") and Privately Protected Areas (PPAs) and the potential contribution they will have in achieving the post-2020 targets.

The information on PAs and OECMs presented here is derived from the World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM). These databases are joint products of UNEP and IUCN, managed by UNEP-WCMC, and can be viewed and downloaded at www.protectedplanet.net. Parties are encouraged to provide data on their PAs and OECMs to UNEP-WCMC for incorporation into the databases (see e.g., Decisions 10/31 and 14/8). The significant efforts of Parties in updating their data in the build up to the publication of the Protected Planet Report 2020 (UNEP-WCMC and IUCN, 2021) were greatly appreciated. UNEP-WCMC welcomes further updates, following the data standards described here (www.wcmc.io/WDPA_Manual), and these should be directed to protectedareas@unep-wcmc.org. The statistics presented in this dossier are derived from the May 2021 WDPA and WD-OECM releases, unless explicitly stated otherwise. Readers should consult www.protectedplanet.net for the latest coverage statistics (updated monthly).

Some data from the WDPA and WD-OECM are not made publicly available at the request of the data-provider. This affects some statistics, maps, and figures presented in this dossier. Statistics provided by UNEP-WCMC (terrestrial and marine coverage) are based upon the full dataset, including restricted data. All other statistics, maps, and figures are based upon the subset of the data that is publicly available.

Where data is less readily available, such as for potential OECMs, ICCAs and PPAs, data has also been compiled from published reports and scientific literature to provide greater awareness of these less commonly recorded aspects. These data are provided to highlight the need for comprehensive reporting on these areas to the WDPA and/or WD-OECM. Parties are invited to work with indigenous peoples, local communities and private actors to submit data under the governance of these actors, with their consent, to the WDPA and/or WD-OECM.

Overall, PAs and OECMs are essential instruments for biodiversity conservation and to sustain essential ecosystem services that support human well-being and sustainable development, including food, medicine, and water security, as well as climate change mitigation and adaptation and disaster risk reduction. The data in this dossier, therefore, aims to celebrate the current contributions of PAs and OECMs, whilst the gaps presented hope to encourage greater progress, not just for the benefit of biodiversity and the post-2020 GBF, but also to recognize the essential role of PAs and OECMs to the Sustainable Development Goals and for addressing the climate crisis.

SECTION I: CURRENT STATUS

Aichi Biodiversity Target 11 refers to both protected areas (PAs) and other effective areabased conservation measures (OECMs). This section provides the current status for all elements of Aichi Biodiversity Target 11 where indicators with global data are available. Statistics for all elements are presented using data on both PAs and OECMs (where this data is available and reported in global databases like the WDPA and WD-OECM). It is recognized that statistics reported in the WPDA and WD-OECM might differ from those reported officially by countries due to differences in methodologies and datasets used to assess protected area coverage and differences in the base maps used to measure terrestrial and marine area of a country or territory. Details on UNEP-WCMC's methods for calculating PA and OECM coverage area available here. The global indicators adopted here for presenting the status of other elements of Target 11 may also differ from those in use nationally. Where available, results from national reporting are also included.

COVERAGE - TERRESTRIAL & MARINE

As of May 2021, Côte d'Ivoire has **254** protected areas reported in the World Database on Protected Areas (WDPA). 1 PA that has no spatial boundary and no area listed in the WDPA, and a further 2 UNESCO-MAB Biosphere Reserves, are not included in the following statistics (see details on UNWP-WCMC's methods for calculating PA and OECM coverage here).

As of May 2021, Côte d'Ivoire has **0** OECMs reported in the world database on OECMs (WD-OECM).

Current coverage for Côte d'Ivoire:

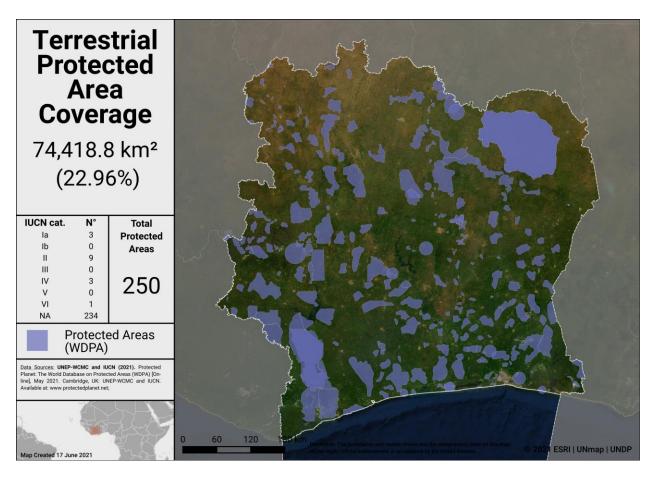
- 23.0% terrestrial (250 protected areas, 74,418.8 km²)
- 0.1% marine (1 protected areas, 126.9 km²)

Côte d'Ivoire's national reporting notes that PAs cover 2,160,744.56 ha (or 6.7% of the national territory).

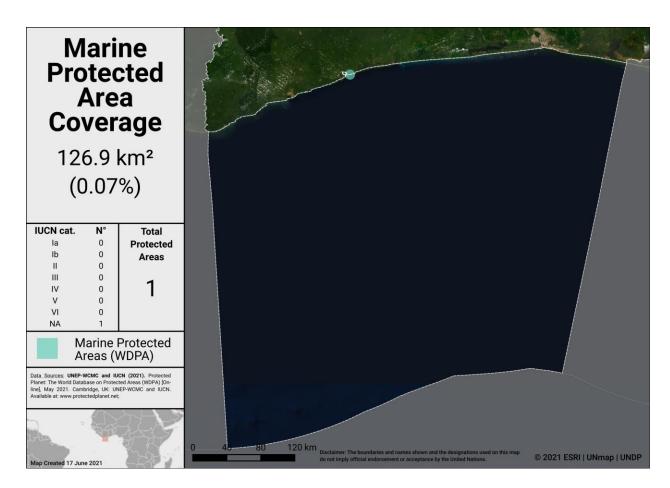
The boundaries of of Taï, Ehotilé Islands, Azagny, Mont Sangbé, Comoé and Banco National Parks, as well as the N'zo, Mont Nimba, Lamto and Haut Bandama Nature Reserves have been modified (in 2018).

In addition, two new nature reserves were created in 2019: *Aghien Nature Reserve* and *Mabi-Yay Nature Reserve*.

For the moment, no marine nature reserves or national parks have been created.



Terrestrial Protected Areas in Côte d'Ivoire



Marine Protected Areas in Côte d'Ivoire

Potential OECMs

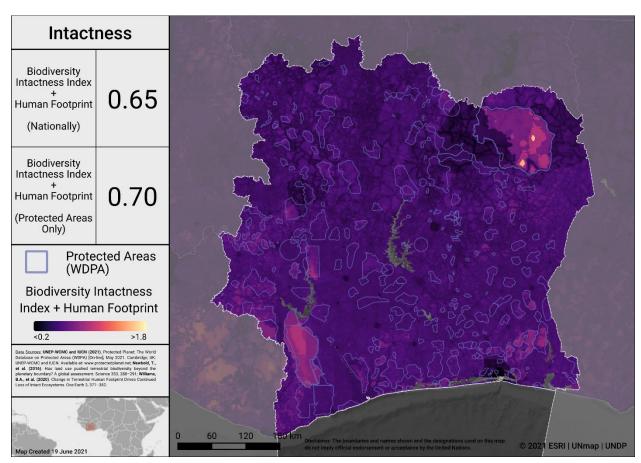
Several measures are taken to consolidate the sustainable management of biodiversity. These include the implementation of regulatory measures to create voluntary reserves managed by legal or natural persons. At the national level, so-called *village forests* with a cultural purpose are taken into account in the texts relating to conservation, in particular the *Forest Code*.

The creation of a peripheral zone around each protected area aimed at strengthening the participation of the populations who live there to allow them a good understanding of the principles of conservation and support for the improvement of their well-being. The establishment of a local Management Committee for each protected area guaranteeing participatory and inclusive management of key conservation actors. The implementation of ecological monitoring in all protected areas makes it possible to assess the state of conservation of natural environments, the impact of management measures and making it possible to objectively guide decisions.

Several types of impacts resulting from the conservation measures of protected areas put in place can be listed. We can cite, in particular, the contribution to the well-being of populations, the maintenance of the provision of ecosystem services for the benefit of the communities, the support for the local development of the peripheral zones of the protected areas, the strengthening of the governance of the protected areas, the behavior changes induced by the effective implementation of information programs, awareness education, reduction of poaching, maintenance of the integrity of natural ecosystems, stabilization or increase of populations of wild fauna.

Opportunities for action

Opportunities for the near-term include updating the WDPA with any unreported PAs, and the recognizing and reporting OECMs to the WD-OECM. In the future, as Côte d'Ivoire considers where to add new PAs and OECMs, the map below identifies areas in Côte d'Ivoire where intact terrestrial areas are not currently protected. Focus on relatively intact areas, while addressing the elements in the following sections, could be considered when planning new PAs or OECMs.



Intactness in Côte d'Ivoire

To explore more on intactness visit the UN Biodiversity Lab: map.unbiodiversitylab.org.

ECOLOGICAL REPRESENTATIVENESS - TERRESTRIAL & MARINE

Ecological representativeness is assessed based on the PAs and OECMs coverage of broadscale biogeographic units. Globally, ecoregions have been described for terrestrial areas (Dinerstein et al, 2017), marine coastal and shelf ecosystems (to a depth of 200m; Spalding et al 2007) and surface pelagic waters (Spalding et al 2012).

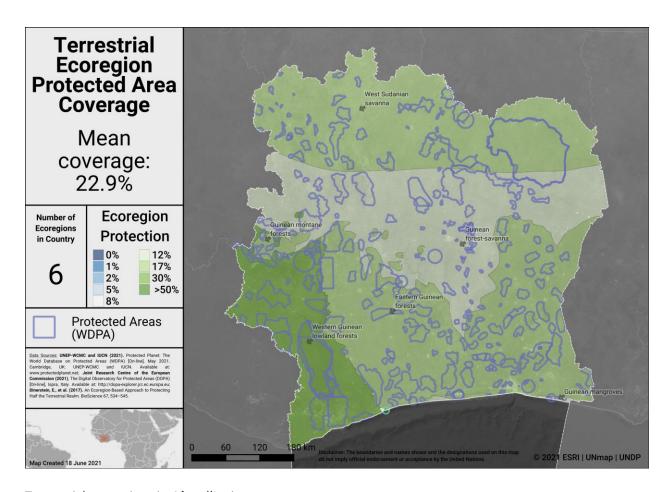
Côte d'Ivoire has 6 **terrestrial** ecoregions. Out of these:

- All 6 ecoregions have at least some coverage from PAs and OECMs.
- 4 ecoregions have at least 17% protected within the country.
- The average coverage of terrestrial ecoregions is 22.9%.

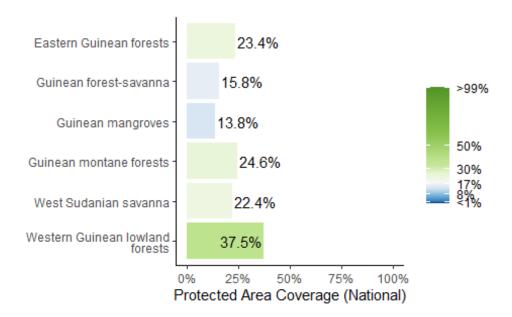
Côte d'Ivoire has 2 **marine** ecoregions and 1 **pelagic province**. Out of these:

- 1 marine ecoregion and 0 pelagic provinces have at least some coverage from reported PAs and OECMs.
- 0 marine ecoregions and 0 pelagic provinces have at least 10% protected within Côte d'Ivoire's exclusive economic zone (EEZ).
- The average coverage of marine ecoregions is 0.2% and the coverage of the 1 pelagic province is 0.0%.

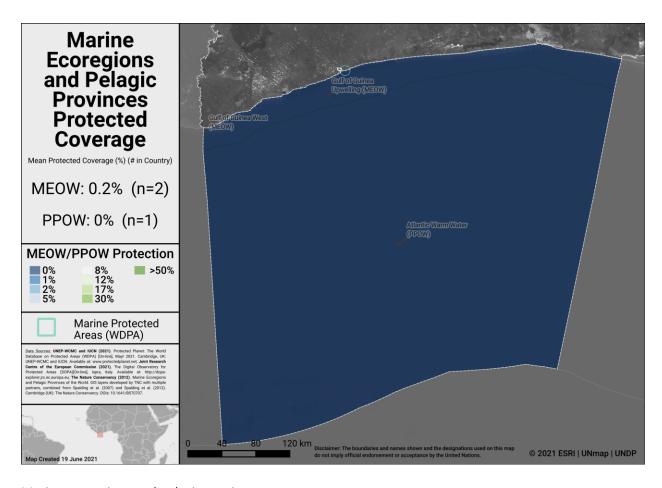
A full list of terrestrial ecoregions in Côte d'Ivoire is available in Annex I.



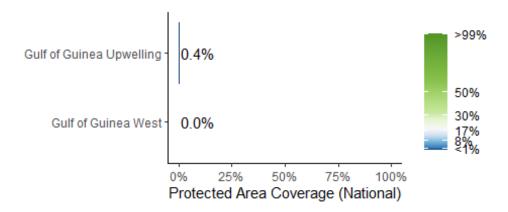
Terrestrial ecoregions in Côte d'Ivoire



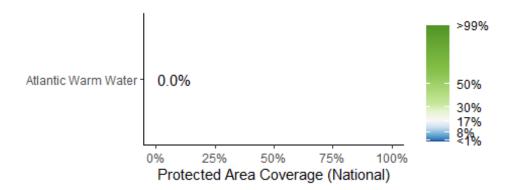
Terrestrial ecoregions of the World (TEOW) in Côte d'Ivoire



Marine ecoregions and pelagic provinces



Marine Ecoregions of the World (MEOW) in Côte d'Ivoire



Pelagic Provinces of the World (PPOW) in Côte d'Ivoire

Opportunities for action

There is opportunity for Côte d'Ivoire to increase protection in terrestrial and marine ecoregions and pelagic provinces that have lower levels of coverage by PAs or OECMs. Ecoregions which currently have no coverage by PAs or OECMs are key areas for action.

AREAS IMPORTANT FOR BIODIVERSITY

Key Biodiversity Areas (KBAs)

Protected area and OECM coverage of Key Biodiversity Areas (KBAs) provide one proxy for assessing the conservation of areas important for biodiversity at national, regional and global scales. KBAs are sites that make significant contributions to the global persistence of biodiversity (IUCN, 2016). The KBA concept builds on four decades of efforts to identify important sites for biodiversity, including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites, and KBAs identified through Hotspot ecosystem profiles supported by the Critical Ecosystem Partnership Fund. Incorporating these sites, the dataset of internationally significant KBAs includes Global KBAs (sites shown to meet one or more of 11 criteria in the Global Standard for the Identification of KBAs, clustered into five categories: threatened biodiversity; geographically restricted biodiversity; ecological integrity; biological processes; and irreplaceability), Regional KBAs (sites identified using pre-existing criteria and thresholds, that do not meet the Global KBA criteria based on existing information), and KBAs whose Global/Regional status is Not yet determined, but which will be assessed against the global KBA criteria within 8-12 years. Regional KBAs are often of critical international policy relevance (e.g., in EU legislation and under the Ramsar Convention on Wetlands), and many are likely to qualify as Global KBAs in future once assessed for their biodiversity importance for other taxonomic groups and ecosystems. To date, nearly 16,000 KBAs have identified globally, and information on each of these is presented in the World Database of Key Biodiversity Areas: www.keybiodiversityareas.org.

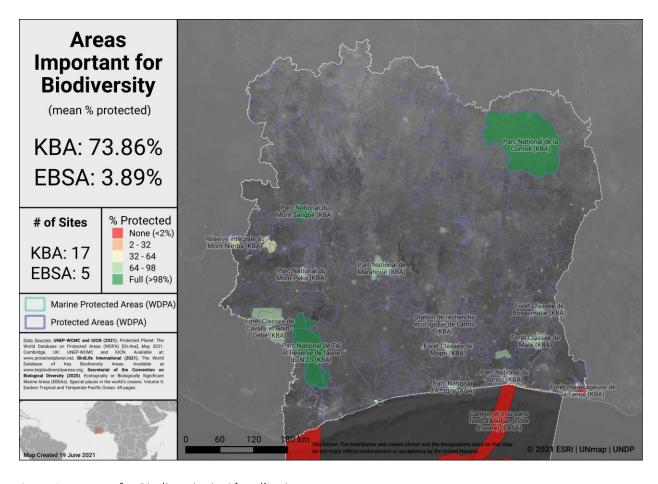
Côte d'Ivoire has 17 Key Biodiversity Areas (KBAs).

- Mean percent coverage of all KBAs by PAs and OECMs in Côte d'Ivoire is **73.9%**.
- **4** KBAs have full (>98%) coverage by PAs and OECMs.
- **11** KBAs have partial coverage by PAs and OECMs.
- **2** KBAs have no (<2%) coverage by PAs and OECMs.

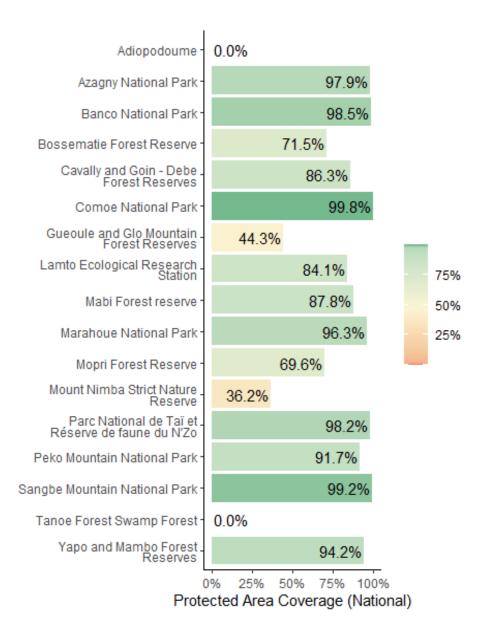
Ecologically or Biologically Significant Marine Areas (EBSAs)

Other important areas for biodiversity may also include Ecologically or Biologically Significant Marine Areas (EBSAs), which were identified following the scientific criteria adopted at COP-9 (Decision IX/20; see more at: https://www.cbd.int/ebsa/). Sites that meet the EBSA criteria may require enhanced conservation and management measures; this could be achieved through means including MPAs, OECMs, marine spatial planning, and impact assessment.

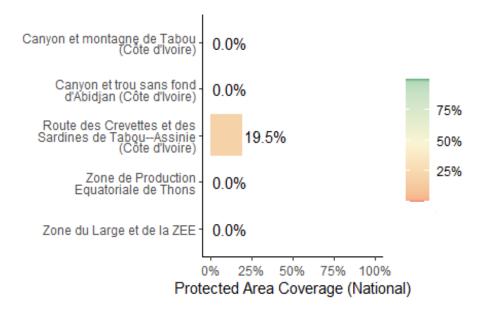
There are 5 EBSAs with some portion of their extent within Côte d'Ivoire's EEZ, of which 4 EBSAs have no coverage from PAs.



Areas Important for Biodiversity in Côte d'Ivoire



Key Biodiversity Area Coverage (KBA) in Côte d'Ivoire



Ecologically or Biologically Significant Marine Areas (EBSAs) in Côte d'Ivoire

Opportunities for action

There is opportunity for Côte d'Ivoire to increase protection of KBAs that have lower levels of coverage by PAs and OECMs; priority could be given to those with no current coverage.

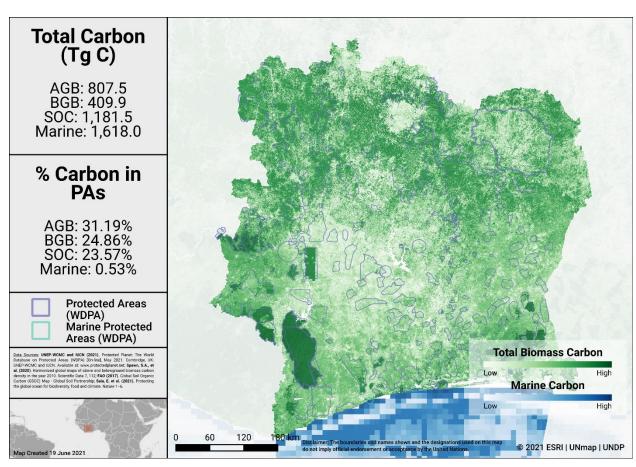
AREAS IMPORTANT FOR ECOSYSTEM SERVICES

There is no single indicator identified for assessing the conservation of areas important for ecosystem services. For simplicity, two services with available global datasets are assessed here (carbon and water). In future, other critical ecosystem services could be explored.

Carbon

Data for biomass carbon comes from temporally consistent and harmonized global maps of aboveground biomass and belowground biomass carbon density (at a 300-m spatial resolution); the maps integrate land-cover specific, remotely sensed data, and land-cover specific empirical models (see Spawn et al., 2020 for details on methodology). The Global Soil Organic Carbon Map present an estimation of SOC stock from 0 to 30 cm (see FAO, 2017). Data is also presented from global maps of marine sedimentary carbon stocks, standardized to a 1-meter depth (see Sala et al., 2021, and Atwood et al., 2020).

The map below presents the total carbon stocks in Côte d'Ivoire and the percent of carbon in protected areas. The total carbon stocks is 807.5 Tg C from aboveground biomass (AGB), with 31.2% in protected areas; 409.9 Tg C from below ground biomass (BGB), with 24.9% in protected areas; 1,181.5 Tg C from soil organic carbon (SOC), with 23.6% in protected areas; and 1,618.0 Tg C from marine sediment carbon, with 0.5% in protected areas.



Carbon Stocks in Côte d'Ivoire

Water

Forests support stormwater management and clean water availability, especially for large urban populations. Research that has examined the role of forests for city drinking water supplies shows that of the world's 105 largest cities, more than 30% (33 cities) rely heavily on the local protected forests, which provide ecosystem services that underpin local drinking water availability and quality (Dudley & Stolton, 2003).

Drinking water supplies for cities in Côte d'Ivoire may similarly depend on protected forest areas within and around water catchments. Intact catchments can support more consistent water supply and improved water quality.

Opportunities for action

For carbon, there is opportunity for Côte d'Ivoire to increase PA and OECM coverage in both marine and terrestrial areas with high carbon stocks, as identified in the map above. Protecting areas with high carbon stocks secures the benefits of carbon sequestration in the area.

For water, there is opportunity to increase the area of the water catchment under protection by PAs and OECMs, or in cases where there is high levels of protection, focus on effective management for these areas. Protecting the current area of forested land and potentially reforesting would have benefits for improving water security.

CONNECTIVITY & INTEGRATION

Two global indicators, the Protected Connected land indicator (ProtConn; EC-JRC, 2021; Saura et al., 2018) and the PARC-Connectedness indicator (CSIRO, 2019), have been proposed for assessing the terrestrial connectivity of PA and OECM networks. To date there is no global indicator for assessing marine connectivity, though some recent developments include proposed guidance for the treatment of connectivity in the planning and management of MPAs (see Lausche et al., 2021).

Protected Connected Land Indicator (Prot-Conn)

As of January 2021, as reported in the Joint Research Centre of the European Commission's Digital Observatory for Protected Areas (DOPA) (JRC, 2021), the coverage of protected-connected lands (a measure of the connectivity of terrestrial protected area networks, assessed using the ProtConn indicator) in Côte d'Ivoire was 7.2%.

PARC-Connectedness Index

In 2019, as assessed using the PARC-Connectedness Index (values ranging from 0-1, indicating low to high connectivity), connectivity in Côte d'Ivoire is 0.41. This represents no significant change since 2010.

Corridor case studies

A project to create a cross-border corridor between Taï (Côte d'Ivoire) and Grebo and Sapo (Liberia), financially supported by KfW, is currently underway. Other initiatives are underway between Côte d'Ivoire, Guinea and Liberia with a view to consolidating the conservation of cross-border ecosystems of the Mount Nimba integral reserve.

The same is true in the North-East of Côte d'Ivoire where a project to create ecological corridors is in sight for the sustainable management of natural resources linking the Comoé National Park, the biodiversity zones of Warigué and Mont. Tingui and the Comoé-Léraba Complex in Burkina Faso

In terms of updates, the issue of biodiversity management is included in the annual action plan of the Comoé National Park.

Opportunities for action

There is opportunity for a targeted designation of PAs or OECMs in strategic locations for connectivity and to focus on PA and OECM management for enhancing and maintaining connectivity. Improving connectivity increases the effectiveness of PAs and OECMs and reduces the impacts of fragmentation.

As well, a range of suggested steps for enhancing and supporting integration are included in the voluntary guidance on the integration of PAs and OECMs into the wider land- and seascapes and mainstreaming across sectors to contribute, inter alia, to the SDGs (Annex I of COP Decision 14/8).

GOVERNANCE DIVERSITY

There is a lack of comprehensive global data on governance quality and equity in PAs and OECMs. Here, we provide data on the diversity of governance types for reported PAs and OECMs.

In Côte d'Ivoire, State governance applies to national parks and nature reserves managed by the OIPR. Private governance for the particular cases of voluntary nature reserves with technical support from the State.

The management of protected areas places at the center of its concerns the question of equity through the effective involvement of all the actors concerned in the decision-making process.

As of May 2021, PAs in Côte d'Ivoire reported in the WDPA have the following governance types:

- 7.8% are governed by **governments** (by government-delegated management)
- 0.0% are under **shared** governance
- 0.4% are under **private** governance (by individual landowners)
- 0.0% are under **IPLC** governance
 - 0.0% by Indigenous Peoples
 - 0.0% by local communities
- 91.8% **do not** report a governance type

OECMs

As of May 2021, there are **0** OECMs in Côte d'Ivoire reported in the WD-OECM, therefore there is no data available on OECM governance types.

Privately Protected Areas (PPAs)

There is currently no data available on PPAs for Côte d'Ivoire (see Gloss et al., 2019, and Stolton et al., 2014 for details).

Territories and areas conserved by Indigenous Peoples and local communities (ICCAs)

There is currently no data available on ICCAs for Côte d'Ivoire (see Kothari et al., 2012 and the ICCA Registry for further details).

Other Indigenous lands

Lands managed and/or controlled by Indigenous Peoples cover an area of $122,114.0 \text{ km}^2$, of which $95,013.0 \text{ km}^2$ falls outside of formal protected areas. Indigenous lands with a human footprint less than 4 (considered as 'natural landscapes') cover an area of $5,825.0 \text{ km}^2$ (for details on analysis see Garnett et al., 2018).

For Côte d'Ivoire evidence for the presence of Indigenous Peoples comes from: Ndahinda, F. M. Indigenousness in Africa: a contested legal framework for empowerment of 'marginalized' communities (Springer Science & Business Media, 2011).

Boundaries of the lands Indigenous Peoples manage or have tenure rights over come from: Harrison, A. Fulfulde Language Family Report (SIL International, 2003).

Opportunities for action

Increase efforts to identify the governance types for the 91.8% of sites that do not have their governance type reported. If applicable, explore opportunities for governance types that have lower representation.

There is also opportunity for Côte d'Ivoire to complete governance and equity assessments, to establish baselines, and identify relevant actions for improvement. Examples of existing tools and methodologies include: Governance Assessment for Protected and Conserved Areas (Franks & Brooker, 2018), Social Assessment of Protected Areas (Franks et al 2018), and Site-level assessment of governance and equity (IIED, 2020). As well, a range of suggested actions are included in the voluntary guidance on effective governance models for management of protected areas, including equity (Annex II of COP Decision 14/8).

PROTECTED AREA MANAGEMENT EFFECTIVENESS

This section provides information on the coverage of PAs and OECMs with completed protected area management effectiveness (PAME) assessments as reported in the global database (GD-PAME). The proportion of terrestrial and marine PAs with completed PAME assessments is also calculated and compared with the 60% target agreed to in COP-10 Decision X/31. Information is also included regarding changes in forest cover nationally within PAs and OECMs.

In Côte d'Ivoire, National parks and nature reserves are subject to quarterly monitoring by the OIPR technical services (decentralized departments, central departments and the Control and Planning Unit).

In addition, external management monitoring is carried out through the annual audit of each protected area by external firms.

In addition, international instruments (EoH, METT, IMET) are applied to all protected areas to assess the effectiveness of their management.

Protected area management effectiveness (PAME) assessments

As of May 2021, Côte d'Ivoire has 255 PAs reported in the WDPA; of these PAs, 9 (3.5%) have management effectiveness evaluations reported in the global database on protected area management effectiveness (GD-PAME).

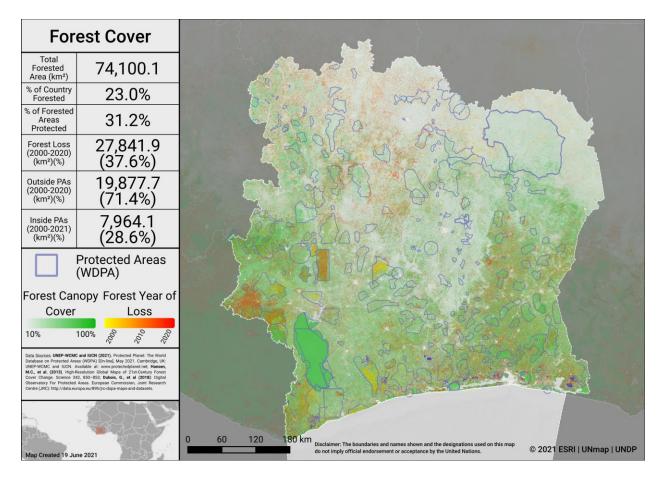
- 5.6% (18,195 km²) of the terrestrial area of the country is covered by PAs with completed management effectiveness evaluations.
 - 24.4% of the area of terrestrial PAs have completed evaluations.
- 0.0% (0.0 km²) of the marine area of the country is covered by PAs with completed management effectiveness evaluations.
 - 0.0% of the area of marine PAs have completed evaluations.

The 60% target for completed management effectiveness assessments (per COP Decision X/31) has not been met for terrestrial PAs and has not been met for marine PAs.

As of May 2021, there are 0 OECMs in Côte d'Ivoire reported in the WD-OECM and no information available on the management effectiveness of potential OECMs.

Changes in forest cover in protected areas and OECMs

Forested areas in Côte d'Ivoire cover approximately 23.0% of the country, an area of 74,100.1 km². Approximately 31.2% (23,087.1 km²) of this is within the protected area estate of Côte d'Ivoire. Over the period 2000-2020 loss of forest cover amounted to over 27,841.9 km², or 8.6 % of the country (37.6% of forest area), of which 7,964.1 km² (28.6% of forest loss) occurred within protected areas. The map below shows how forest cover has changed in Côte d'Ivoire from 2000-2020 both inside and outside of PAs. This can indicate how effective PAs are in reducing forest cover loss.



Forest Cover and Forest Loss in Côte d'Ivoire

Opportunities for action

The 60% target for completed management effectiveness assessments (per COP Decision X/31) **has not** been met for terrestrial PAs and **has not** been met for marine PAs. Therefore, there is opportunity to increase protected area management effectiveness (PAME) evaluations for both terrestrial and marine PAs to achieve the target.

There is also opportunity to implement the results of completed PAME evaluations, to improve the quality of management for existing PAs and OECMs (e.g. through adaptive management and information sharing, increasing the number of sites reporting 'sound management') and to increase reporting of biodiversity outcomes in PAs and OECMs.

SECTION II: EXISTING PROTECTED AREA AND OECM COMMITMENTS

NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS (NBSAPs)

Côte d'Ivoire has submitted an NBSAP during the Strategic Plan for Biodiversity 2011-2020 (most recent NBSAP is available at: https://www.cbd.int/nbsap/search/).

Objectives of the National Biodiversity Strategy related to Acihi Target 11:

Objective 1 By 2020, at least 50% of ecosystems and habitats in rural areas are protected to ensure the conservation of biological diversity.

Objective 2 By 2020, 50% of inland, marine and coastal ecosystems are protected to ensure the Target of biological diversity

Objective 8 By 2020, 100% of ecosystems and habitats are represented within the network of viable protected areas.

Objective 9 By 2020, 100% of protected areas are managed effectively.

Update:

The process of updating the Framework Program for the Management of Protected Areas (PCGAP) is nearing completion with the development of the second generation PCGAP which defines the planning scheme for the activities to be implemented over the next 15 years and key management indicators.

APPROVED GEF-5, GEF-6, & GCF PROTECTED AREA PROJECTS

Approved GEF-5 and GEF-6 PA-related biodiversity projects

This includes biodiversity projects from the fifth and sixth replenishment of the Global Environment Facility (GEF-5 and GEF-6) with a clear impact of the quantity or quality of PAs; also including some projects occurring within the wider landscapes/seascapes around PAs. Only those with a status of 'project approved' or 'concept approved' as of June 2019 were considered. The qualifying elements likely benefiting from each GEF project is assessed based on a keyword search of Project Identification Forms (PIF).

GEF ID	PA increase?	Area to be added (km²)	Type of new protected area	Qualitative elements potentially benefitting (based on keyword search of PIFs)
4970	Yes	100	Terrestrial	All except Areas important for biodiversity and Connectivity
9366	No	N/A	N/A	All except Areas important for biodiversity and Connectivity

GEF-5 (#4970): Integrated Protected Areas Management Project (PROGIA-CI) with the Banco National Park as a pilot site contributed to the implementation of monitoring and development activities. Execution period 2016-2021.

GEF-6 (#9366): Sustainability and upscaling approach for the transformation of management, restoration and conservation of forest landscapes and biodiversity in Côte d'Ivoire (FOLAB). Execution period 2021-2026. This project aims to restore and preserve forests in areas where they will help prevent species extinction, improve water security, mitigate the effects of climate change through carbon storage and create habitats for the resilience of populations. in the face of this phenomenon. The protected areas concerned by this project are the National Parks of Marahoué and Mont Péko, and the Nature Reserves of Abokouamékro and Haut-Bandaman.

Approved Green Climate Fund (GCF) Protected Area-related biodiversity projects

The Green Climate Fund's investments listed as approved projects as of May 2021 were considered. The GCF supports paradigm shifts in both climate change mitigation and adaptation that may impact quality of PAs or contribute to better integration within the wider land- and seascapes around PAs. Only projects with result areas for either or both Forest and Land Use and Ecosystems and Ecosystem Services result areas were included.

GCF ID	Project theme	Result area	Target 11 element
FP092	Cross-cutting	Forest and land use	Effectively managed; Integration
SAP015	Mitigation	Forest and land use	Integration

OTHER ACTIONS/COMMITMENTS

High Ambition Coalition for Nature and People

Côte d'Ivoire **has** joined the High Ambition Coalition for Nature and People.

The High Ambition Coalition for Nature and People (HAC) is an intergovernmental group, co-chaired by France and Costa Rica [currently including 65 countries and the European Commission]. Its objective is to support the adoption of a target aiming to protect 30% of the planet's land and 30% of its oceans by 2030 (30x30 target), within the future global framework of the Convention on Biological Diversity (CBD) for the protection of biodiversity, which is to be adopted at the next COP in China this autumn.

Côte d'Ivoire's statement at the 2020 UN Biodiversity Summit mentions PAs, OECMs or corridors:

We have a new forest policy. This policy emphasizes the preservation of the forest and biodiversity, and expanding the network of protected areas.

Other recent commitments

The Government has just adopted a new Strategy for the Preservation, Rehabilitation and Extension of Forests (SPREF) which aims, among other things, to strengthen the status of classified forests conserved at more than 75% of their area by classifying them as a national park. or nature reserve. This commitment was materialized by the creation, in 2019, of the Mabi-Yaya Nature Reserve resulting from the upgrading of part of the classified forests of Mabi and Yaya.

Commitments for PAs and OECMs from Other National Policies

Policy document	Ecosystem	Policy text
Nationally Determined Contribution	Forest ecosystems	Avoided forest conversion: 34.92 Mt CO2e/yr
Nationally Determined Contribution	Wetland ecosystems	Avoided peat impacts: 0.47 Mt CO2e/yr
Nationally Determined Contribution	Coastal ecosystems	Avoided mangroves impacts: 0.05 Mt CO2e/yr
Nationally Determined Contribution	Forest ecosystems	Mitigation: Promotion of improved stoves and promotion of charcoal alternatives through the valorization of agricultural biomass

Policy document	Ecosystem	Policy text
Nationally Determined Contribution	Forest ecosystems	Mitigation: Alignment of the NAPIs with strategies to limit deforestation (REDD+ process) through a master plan for land use planning to 2030 (land tenure security) in consultation with each of the agricultural sectors and territories
Nationally Determined Contribution	Coastal ecosystems	Protect the habitat (enforce regulations on the construction and extraction of sand on the coast, move and rebuild structures at risk on a fallback line, build active protection structures, breakwaters, passive, restoration, wind curtains, revegetation, reforestation, mangroves)
Nationally Determined Contribution	Grasslands & Agricultural systems	Mitigation: Decoupling agricultural production from deforestation through the promotion of intensive agricultural practices with reduced environmental and agroforestry impacts
Nationally Determined Contribution	Grasslands & Agricultural systems	Mitigation: Implementation of the "Zero Deforestation Agriculture" concept and enhancement of the associated products
Nationally Determined Contribution	Grasslands & Agricultural systems	Intensification of agricultural, animal and fisheries production that respects the environment and prevents deforestation
National Development Plan	Wetland ecosystems	Integrated management of water resources is strengthened
National Development Plan	Coastal ecosystems	The fight against coastal erosion and capacities adaptation and mitigation of the effects of climate change are strengthened
National Development Plan	Grasslands & Agricultural systems	The green sectors and sustainable development are reinforced
National Biodiversity Strategy Action Plan	Forest ecosystems	Conserve 100 species of wild relatives of plants cultivated
National Biodiversity Strategy Action Plan	Forest ecosystems	Include 20 sacred sites in the protected area network as community entities
National Biodiversity Strategy Action Plan	Forest ecosystems	Provide the 20 sites with management plans in partnership with local populations.

Policy document	Ecosystem	Policy text
National Biodiversity Strategy Action Plan	Forest ecosystems	Adopt the creation procedure /recognition of private protected areas
National Biodiversity Strategy Action Plan	Forest ecosystems	Develop 5 ecological corridors
Reducing emissions from deforestation and forest degradation	Forest ecosystems	Reduction of deforestation and degradation of protected forests and areas: 80% compared to 2015
Reducing emissions from deforestation and forest degradation	Forest ecosystems	Reduce by 80% deforestation generated for agricultural production to by 2030 (a reduction by 74 400 ha/year)
Protected Area Plan	Forest ecosystems	NET Terrestrial National Commitments: 22.9% PA cover if implemented
National Biodiversity Strategy Action Plan	Wetland ecosystems	By 2020, 50% of inland, marine and coastal marine ecosystems are protected to ensure the conservation of biological diversity.
National Biodiversity Strategy Action Plan	Coastal ecosystems	By 2020, 50% of inland, marine and coastal marine ecosystems are protected to ensure the conservation of biological diversity
National Biodiversity Strategy Action Plan	Coastal ecosystems	Create a network of 4 marine protected areas
Protected Area Plan	Coastal ecosystems	Net Marine National Commitments: 0.07% cover if implemented
Reducing emissions from deforestation and forest degradation	Grasslands & Agricultural systems	Reduce by at least 80% deforestation due to cocoa cultivation by 2030, a reduction of 44,000 hectares/year
Reducing emissions from deforestation and forest degradation	Grasslands & Agricultural systems	Reduce by at least 90% deforestation due to rubber farming, to achieve zero deforestation by 2030, that is a reduction by 22,500 hectares/year.
Reducing emissions from deforestation and forest degradation	Grasslands & Agricultural systems	Reduce by at least 90 % deforestation due to oil palm farming by 2030, that is, a reduction of 10,800 ha / year.
Reducing emissions from deforestation and forest degradation	Grasslands & Agricultural systems	Reduce deforestation due to the cashew nut industry, contribute to the reforestation effort, and improve farmers' yields.

ANNEX I

FULL LIST OF TERRESTRIAL ECOREGIONS

Ecoregion Name	Area (km²)	% of Global Ecoregion in Country	% of Country in Ecoregion	Area Protected (km²)	% Protected in Country
Eastern Guinean forests	102,815.2	54.4	32.0	24,072.7	23.4
Guinean forest- savanna	88,357.7	13.2	27.5	13,935.3	15.8
Guinean mangroves	651.1	2.8	0.2	90.1	13.8
Guinean montane forests	2,921.8	9.4	0.9	719.7	24.6
Western Guinean lowland forests	43,620.2	21.4	13.6	16,347.1	37.5
West Sudanian savanna	83,555.5	5.1	26.0	18,674.2	22.3

REFERENCES

Atwood, TB, Witt, A, Mayorga, J, Hammill, E, & Sala, E. (2020). Global patterns in marine sediment carbon stocks. *Frontiers in Marine Science*.

https://doi.org/10.3389/fmars.2020.00165

BirdLife International (2021). World Database of Key Biodiversity Areas. Available at: http://www.keybiodiversityareas.org

CBD (2010). Decision adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting. Decision X/2. Strategic plan for biodiversity 2011–2020. Retrieved from https://www.cbd.int/doc/decisions/cop-10/cop-10-dec02-en.pdf.

CSIRO (2019). Protected area connectedness index (PARCconnectedness). https://www.bipindicators.net/indicators/protected-area-connectedness-index-parcconnectedness

Dinerstein, E., et al. (2017). An ecoregion-based approach to protecting half the terrestrial realm. BioScience 67(6), 534-545.

Donald et al., 2019, The prevalence, characteristics and effectiveness of Aichi Target 11's "other effective area-based conservation measures" (OECMs) in Key Biodiversity Areas. Conservation Letters, 12(5).

EC-JRC (2021). DOPA Indicator factsheets: http://dopa.jrc.ec.europa.eu/en/factsheets

FAO (2017). Global Soil Organic Carbon (GSOC) Map - Global Soil Partnership [WWW Document]. URL http://www.fao.org/global-soil-partnership/pillars-action/4-information-and-data/global-soil-organic-carbon-gsoc-map/en/.

Franks, P and Booker, F (2018). Governance Assessment for Protected and Conserved Areas (GAPA): Early experience of a multi-stakeholder methodology for enhancing equity and effectiveness. IIED Working Paper, IIED, London. https://pubs.iied.org/17632IIED

Franks, P. et al. (2018). Social Assessment for Protected and Conserved Areas (SAPA). Methodology manual for SAPA facilitators. Second edition. IIED, London. https://pubs.iied.org/14659iied

Garnett et al. (2018). A spatial overview of the global importance of Indigenous lands for conservation. Nature Sustainability, 1(7), 369.

Global Environment Facility (GEF-5 and GEF-6); all projects can be found online at: https://www.thegef.org/projects

Gloss, L. et al. (2019). International Outlook for Privately Protected Areas: Summary Report. International Land Conservation Network (a project of the Lincoln Institute of Land Policy) and United Nations Development Programme. Summary report, and individual country profiles, available at: https://nbsapforum.net/knowledge-base/resource/international-outlook-privately-protected-areas-summary-report

Hansen, M.C., Potapov, P.V., Moore, R., Hancher, M., Turubanova, S.A., Tyukavina, A., Thau, D., Stehman, S.V., Goetz, S.J., Loveland, T.R., Kommareddy, A., Egorov, A., Chini, L., Justice, C.O., Townshend, J.R.G., (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. Science 342, 850–853. https://doi.org/10.1126/science.1244693

Hilty, J et al. (2020). Guidelines for conserving connectivity through ecological networks and corridors. Best Practice Protected Area Guidelines Series No. 30. Gland, Switzerland: IUCN. https://portals.iucn.org/library/sites/library/files/documents/PAG-030-En.pdf

IIED 2020. Site-level assessment of governance and equity (SAGE) https://www.iied.org/site-level-assessment-governance-equity-sage.

IUCN (2016). A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition. Gland, Switzerland: IUCN.

https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf

IUCN-WCPA (2017). IUCN-WCPA Task Force on OECMs collation of case studies submitted 2016-2017. https://www.iucn.org/commissions/world-commission-protected-areas/our-work/oecms/oecm-reports

Joint Research Centre of the European Commission (JRC) (2021), The Digital Observatory for Protected Areas (DOPA) Explorer 4.1 [On-line], [Apr/2021], Ispra, Italy. Available at: http://dopa-explorer.jrc.ec.europa.eu

Kothari, A., et al. (Eds) (2012). Recognising and Supporting Territories and Areas Conserved By Indigenous Peoples And Local Communities: Global Overview and National Case Studies. Secretariat of the CBD, ICCA Consortium, Kalpavriksh, and Natural Justice, Montreal, Canada. Technical Series no. 64.

Lausche, B., Laur, A., Collins, M. (2021). *Marine Connectivity Conservation 'Rules of Thumb' for MPA and MPA Network Design*. Version 1.0. IUCN WCPA Connectivity Conservation Specialist Group's Marine Connectivity Working Group.

McDonald, R.I., Weber, K., Padowski, J., Flörke, M., Schneider, C., Green, P.A., Gleeson, T., Eckman, S., Lehner, B., Balk, D., Boucher, T., Grill, G., Montgomery, M., (2014). Water on an urban planet: Urbanization and the reach of urban water infrastructure. Global Environmental Change 27, 96–105. https://doi.org/10.1016/j.gloenvcha.2014.04.022

National Biodiversity Strategy and Action Plan (NBSAPs); most recent NBSAP is available at: https://www.cbd.int/nbsap/search/

Newbold, T., Hudson, L.N., Arnell, A.P., Contu, S., Palma, A.D., Ferrier, S., Hill, S.L.L., Hoskins, A.J., Lysenko, I., Phillips, H.R.P., Burton, V.J., Chng, C.W.T., Emerson, S., Gao, D., Pask-Hale, G., Hutton, J., Jung, M., Sanchez-Ortiz, K., Simmons, B.I., Whitmee, S., Zhang, H., Scharlemann, J.P.W., Purvis, A., (2016). Has land use pushed terrestrial biodiversity beyond the planetary boundary? A global assessment. Science 353, 288–291. https://doi.org/10.1126/science.aaf2201

Sala, E. et al. (2021). Protecting the global ocean for biodiversity, food and climate. Nature, 592(7854), 397-402. https://doi.org/10.1038/s41586-021-03496-1

Saura, S. et al. (2018). Protected area connectivity: Shortfalls in global targets and country-level priorities. Biological Conservation, 219, 53-67.

Saura, S. et al (2017). Protected areas in the world's ecoregions: How well connected are they? Ecological Indicators, 76, 144-158.

Spalding, M.D., et al. (2012). Pelagic provinces of the world: a biogeographic classification of the world's surface pelagic waters. Ocean & Coastal Management 60, 19–30.

Spalding, M.D., et al. (2007). Marine ecoregions of the world: a bioregionalization of coastal and shelf areas. BioScience 57(7): 573–583.

Spawn, S.A., Sullivan, C.C., Lark, T.J., Gibbs, H.K., (2020). Harmonized global maps of above and belowground biomass carbon density in the year 2010. Scientific Data 7, 112. https://doi.org/10.1038/s41597-020-0444-4

Stolton, S. et al. (2014). The Futures of Privately Protected Areas. Gland, Switzerland: IUCN.

UNEP-WCMC and IUCN (2021) Protected Planet Report 2020. UNEP-WCMC and IUCN: Cambridge UK; Gland, Switzerland.

UNEP-WCMC and IUCN (2021), Protected Planet: The Global Database on Protected Area Management Effectiveness (GD-PAME) [On-line], [May/2021], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

UNEP-WCMC and IUCN (2021), Protected Planet: The World Database on Protected Areas (WDPA) [On-line], [May/2021], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

UNEP-WCMC and IUCN (2021), Protected Planet: The World Database on Other Effective Area-based Conservation Measures (WD-OECM) [On-line], [May/2021], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.

UN Ocean Conference Voluntary Commitments, available at: https://oceanconference.un.org/commitments/

Williams, B.A., Venter, O., Allan, J.R., Atkinson, S.C., Rehbein, J.A., Ward, M., Marco, M.D., Grantham, H.S., Ervin, J., Goetz, S.J., Hansen, A.J., Jantz, P., Pillay, R., Rodríguez-Buriticá, S., Supples, C., Virnig, A.L.S., Watson, J.E.M., (2020). Change in Terrestrial Human Footprint Drives Continued Loss of Intact Ecosystems. One Earth 3, 371–382. https://doi.org/10.1016/j.oneear.2020.08.009

This document was created using the knitr package with R version 4.0.5.

 $For any \ questions \ please \ contact \ support@unbiodiveristylab.org.$