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Twelfth meeting of the Contracting Parties to the
Convention on Cooperation for the Protection,
Management and Development of the Marine
Environment and Coastal Areas of the West,
Central and Southern African Region (Abidjan Convention)

Abidjan, Côte d'Ivoire, 27 to 31 March 2017

ADDITIONAL PROTOCOL TO THE ABIDJAN CONVENTION ON SUSTAINABLE MANGROVE MANAGEMENT

Preamble

The Contracting Parties to the present Protocol,

Being Parties to the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West, Central and Southern Africa Region, signed in Abidjan on 23 March 1981;

Determined to apply the said Convention;

Conscious of the high biological productivity of the mangrove ecosystem, which is favourable for many plant and animal species, thus offering abundant resources of wood, fisheries and land for various aqua-culture and agricultural activities among others;

Considering that these ecosystems serve as habitats for many endangered species being certainly a spawning and nursery area and remain essential in the migration of birds and the protection of shore lines;

Considering services and benefits the mangrove provides to the bordering populations, which draw from it important incomes sustained by the exploitation of wood, shellfish aquaculture, fishing, rice growing, extraction of salt and other activities, such as honey harvesting and the collection of medicinal plants;

Concerned about the sometimes-negative impact of these activities leading to the clearing of the mangroves for agriculture, the provision of firewood and construction, which worsens the vulnerability of communities and of coastal and marine ecosystems;

Committed to apply the decision CP.10/7 on the sustainable management of mangrove ecosystems in the Abidjan Convention area;

Considering the capital role of mangrove ecosystems as natural infrastructure that reduces the risks and effects of natural disasters;

Considering the consequences of climate variability and change reflected, among other things, by rainfall deficit and a reduction in the length of the rainy season, which worsens the degradation of the mangrove forests;

Considering the function of carbon sequestration of the mangrove ecosystem, its effects on the regulation of the global climate system and the opportunities for green and blue carbon financing they can offer;

Considering that the combined effects of drought and overexploitation of the mangrove resources have led to a drastic decrease in the areas of the mangrove forest;

Considering that mangroves are part of the socio-cultural patrimony of the African populations;

Considering that management of mangroves in Africa, has become an issue of geopolitical security and an environmental issue, especially since the populations living along the coasts are suffering from the consequences of human and material losses;

Considering that effective management of natural resources and their role in food production would require a new strategy aimed at solving environmental problems through environmentally viable practices for the use of the mangrove resources;

Considering the need to strengthen organizations for watershed basins and regional networks of protected areas within the framework of a transboundary management of shared resources;

Considering the ineffective mainstreaming of the specificity of the mangrove ecosystem and related wetlands in the legislations and regulations of the Contracting Parties to the Convention;

Considering the development of activities for prospecting and exploitation of mining resources underway or planned on the African coasts and potential risks on the marine and coastal environment;

Considering the need to put in place a legal and institutional framework with more emphasis on the uniqueness and the transboundary character of mangrove resources;

Considering the need to strengthen the basin organizations operating within the framework for cooperation and integrated management of shared water resources;

Considering the need to create and strengthen regional networks of protected areas within the framework of cross-management of marine and coastal resources;

Mindful of the need to strengthen cooperation among States in the Abidjan Convention area and to promote the involvement of local bordering communities in the management of the mangrove;

Pursuant to the provisions of existing international legal instruments, notably the 1992 Convention on Biological Diversity (CBD) , the 1971 Convention on Wetlands of International Importance (Ramsar Convention), the 1976 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the revised in 2003 African Convention for the Conservation on Nature and Natural Resources, the 1972 United Nations Educational, Scientific and Cultural Organization (UNESCO), among others;

Have agreed as follows:

Article 1: Objectives of the Protocol

The objectives of this Protocol are to:

- i. Harmonize the principles and set the modalities for managing the resources of the mangrove ecosystem by the Contracting Parties and the local bordering communities;
- ii. Establish the rules for environmental protection and conservation of natural resources, including mangroves;
- iii. Define the framework and modalities for stakeholder participation in the decisionmaking for managing the mangrove ecosystem;
- iv. Define the modalities for the review and approval of projects and programmes, and other initiatives for the use of the mangrove ecosystems.

Article 2: Definitions

For the purposes of the present Protocol:

- i. "Contracting Parties" refers to States party to the present Protocol.
- ii. "Mangrove" refers to the coastal forests found in sheltered estuaries and along river banks and lagoons in tropical and subtropical regions, any plant and animal species, adapted to the salinity of the coastal ecosystems for inter-tropical regions subjected to exchanges between the land and the ocean environment.
- iii. "Wetlands" are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.
- iv. "Use" refers to the wise use of the mangrove resource for domestic purposes in non-fully protected sites.
- v. "Exploitation" refers to any harvesting of products from the mangrove resources for commercial or tourist purposes, in line with the regulations in force.
- vi. "Pollution" refers to direct or indirect introduction of substances or energy that can have harmful effects, such as damages to the biophysical resources (fauna, flora, soil, water, air), can entail human health risks and can lead to alterations of the quality of the mangrove from the point of view of its use.
- vii. "Sustainable management" refers to methods for utilization in order to meet the needs of the local bordering communities in a fair and equitable manner, to maintain services and functions of the mangrove ecosystem for present and future generations.
- viii. "Green economy" implies an economy which brings about improvement of welfare and social equity, while significantly reducing the risks of destruction of the mangrove ecosystem.
- ix. "Convention" refers to the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West, Central and Southern Africa Region (Abidjan Convention).
- x. "Inland waters" refers to waterways within the jurisdiction of the Contracting Parties such as rivers, canals, lakes and ponds up to the limit of the maritime boundary.
- xi. "Restoration" means the various repairing actions to restore the pre-existing ecosystem as much as possible.
- xii. "Rehabilitation" refers to any action which aims to restore the functions (resilience and productivity), an ecosystem.

Article 3: Field of Application

This Protocol shall apply to all the resources of the mangrove ecosystem within the territories of the States party to this it.

Article 4: Principles for Sustainable Management of the Mangrove Ecosystem

The utilization of the resources of the mangrove ecosystem is open to the Contracting -Parties in line with the principles and modalities defined by this Protocol. The use and exploitation of the resources of the mangrove ecosystem are based on the following principles:

- 1) Permanent sovereignty of States over the resources of the mangrove;
- 2) Precautionary principle;
- 3) Prevention principle;
- 4) Right to information, participation and access to justice;
- 5) Polluter-pays principle;
- 6) Ecosystem-based management principle.
- 7) Principle of cooperation;
- 8) Sustainable use and equitable sharing of incomes from mangrove resources.
- 9) Negotiation in case of conflict.

Article 5 : Modalities for Sustainable Management of Mangrove Ecosystems and related Wetlands

Parties shall take measures that lead to the sustainable management and enable local bordering communities to make use of the mangrove resources from the standpoint of sustainability. The different modalities for sustainable management of the resources of the mangrove ecosystem are the following:

- i. Strengthening of the legal and institutional framework.
- ii. Restoration, rehabilitation, conservation and rational utilization of mangroves.
- iii. Setting up sustainable funding mechanisms.
- iv. Better organization of the market for goods and services.
- v. Setting up alternative means of livelihood for communities bordering the mangroves, and especially women.
- vi. Setting up a system for monitoring and evaluation in accordance with annexe I of this protocol and capitalization of traditional knowledge and promotion of best practices, participatory management of the mangrove ecosystem and improvement of the information and communication system.

Article 6: Strengthening of the Legal and Institutional Framework

The legal and institutional framework for the management of the mangrove includes all the international treaties applicable, laws and regulations in force, national mechanisms as well as national and local bodies. The strengthening of the legal and institutional framework for sustainable management of the mangrove presumes among others:

- i. Identification and strengthening of the capacities of stakeholders.
- ii. Harmonization of policies, legislations, monitoring and control measures, decentralization of the management of the mangrove ecosystem.

- iii. Setting up of a framework of consultation or common management for the Contracting Parties,
- iv. Effective application of national laws and regulations in force.

Article 7: Restoration, Rehabilitation, Conservation and Wise Use of Mangrove

1. Restoration and rehabilitation shall be done in accordance with annex I and III of this protocol. It shall require the following operations, among others:

- i. Assessment of the benefits of mangrove goods and services to bordering communities;
- ii. Capacity-building for stakeholders;
- iii. Identification and mapping of degraded sites;
- iv. Conservation and promotion of natural regeneration;
- v. Utilization of adapted techniques for hydro-agricultural, aquacultural and forestry development;
- vi. Development of techniques for the restoration and rehabilitation of the mangrove;
- vii. Establishment of transboundary programmes for restoration and rehabilitation;
- viii. Strengthening and establishment of protected national and transboundary mangrove areas.

2. The sustainable exploitation and utilization of the mangrove resources shall be done in accordance with annex II and undertaken according to the following modalities:

- i. Formulation of strategic orientations.
- ii. Formulation of national and transboundary plans for the lay out and management of mangroves.
- iii. Implementation of income-generating activities compliant with the conservation of mangroves.
- iv. Promotion of alternative energy to mangrove wood.
- v. Promotion of various forms of sustainable developments
- vi. Fair and equitable sharing of the benefits of the mangrove resources.

Article 8: Protection and Conservation of Mangroves

1. The Contracting Parties and the bordering communities shall protect and conserve the mangrove ecosystems in respect of natural equilibrium, namely protected areas, fragile wetlands and the marine environment, in conformity with national legislations and the provisions of this Protocol.

2. The Contracting Parties and the bordering communities in line with annex I shall commit themselves to control any action likely to significantly modify the characteristics of the ecosystem.

3. The Contracting Parties and the bordering communities shall take steps in order to prevent, reduce or control events or conditions deriving from natural causes or human activities which may degrade the mangrove.

4. To this end, the Contracting Parties shall seek consensus to prevent the introduction of new, exotic or invasive species of plants or animals, and prevent oil and gas exploration and exploitation activities liable to alter the mangrove ecosystem. In this regard, they shall:

- i. Jointly draw up the list of new, exotic or invading species and substances whose presence should be forbidden, limited, examined or controlled in the mangrove.
- ii. Jointly define common objectives and criteria concerning the quality of the mangrove based on the uses.

- iii. Work together to develop techniques and effective practices to combat pollution.
- iv. Work for the harmonization of national legislations related to environmental issues as regards common resources of the mangrove.
- v. Establish and strengthen the management of protected areas which value the traditional system for the management of the mangrove.
- vi. Take into account the uniqueness of the mangrove ecosystem in the plans for the management of protected marine areas
- vii. Strive to contain and eliminate all sources of pollution that affect mangrove ecosystems by considering plans and relevant protocols for the protection of the marine and coastal environment.
- viii. Apply the relevant provisions of the additional protocols to the Abidjan Convention on the protection of marine and coastal habitats.

5. The prevention and mitigation of the impact of pollution call for the actions below:

- i. Identification of sources of pollution.
- ii. Dissemination of good practices.
- iii. Effective enforcement of the regulations on pollution.
- iv. Capitalization of knowledge and experiences.
- v. Development of additional protocols on pollution.
- vi. Establishment of an early warning system on pollution for the conservation of the mangrove ecosystem.
- vii. Development of a national plan for the prevention and management of pollution.
- viii. Establishment of a body for emergency intervention.
- ix. Promote participation in environmental and social impact assessments in the coastal area.
- x. Development and implementation of by-laws on the protection and conservation of mangroves.

Article 9: Organization of the Market for Goods and services

The organization of the market for mangrove goods and services shall enable the local bordering communities to derive greater benefit from the resources. The organization of the market for goods and services shall entail:

- i. Strengthening capacities of stakeholders;
- ii. Defining the market channels for goods and services of the mangrove;
- iii. Development and value addition of the mangrove goods and services;
- iv. Promotion of the label of the mangrove goods and services;
- v. Promotion of activities for small and medium enterprises compatible with the sustainable management of the mangrove ecosystem;
- vi. Establishing an information system on the market linked to sub-regional economic organizations.

Article 10 : Funding Mechanism

- 1. For the implementation of sustainable management actions of the mangrove ecosystem, the funding mechanisms shall compose of:
 - i. Retrocession of part of goods and services provided by the mangroves in terms of national budget allocations;

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- ii. Participation of the private sector;
 - iii. Establishment of an adapted fiscal system;
 - iv. Innovative methods of financing such as payment for goods and services generated by the mangrove ecosystem and related wetlands.
2. For the implementation of the additional Protocol, the Contracting Parties shall provide and mobilize additional resources and other forms of assistance for activities pertaining to the Protocol. These resources and assistance may include voluntary contributions, grants and loans on favourable conditions provided by national and international sources, donor agencies, non-governmental sources of funding, bilateral and multilateral sources, individuals and private-sector entities, in addition to statutory contributions and obligations stated in article 21 of the Convention.
 3. The Contracting Parties shall encourage and facilitate the mobilization of adequate and foreseeable financial resources, namely by way of national budget allocations, for the implementation of this Protocol.

Article 11 : System Monitoring and Evaluation, Capitalization of Traditional Knowledge and Promotion of Best Practices

1. Contracting Parties shall identify, assess and capitalize local knowledge for the restoration, conservation and sustainable use of mangrove ecosystems.
2. The Parties shall cooperate with their traditional legislative bodies to attain the objectives set out in paragraph 1.
3. Each Contracting Party shall designate an institution as national liaison within a regional network of centres and national research institutes to lead and coordinate data collection as well as monitoring and evaluation of programmes and activities undertaken in line with this Protocol and to help ensure the supervision and guarantee the accountability of results.
4. Contracting parties shall develop and coordinate national research programmes on the state of traditional knowledge on mangroves, and their evaluation and propose effective measures as per this Protocol.
5. To this end and in accordance with annex I, Contracting Parties should identify relevant and measurable indicators on the state of mangrove ecosystems in a participatory manner by including among others relevant institutions, research institutes, universities, non-governmental organizations and collect, analyse and disseminate relevant information on the status of mangrove ecosystems.

Article 12 : Information, Education and Communication

1. An information and communication system taking into account the new technologies where necessary, shall be put in place to document assets and experiences. The improvement of this information and communication system shall call for:
 - i. Identification and strengthening of the capacities of stakeholders;
 - ii. Establishment of a database on geographic zones covered by the Protocol;
 - iii. Establishment of an information system on mangroves located at the secretariat of the Abidjan Convention;
 - iv. Setting up of a working group for the monitoring and management of mangroves;
 - v. Networking and development of common information and communication programmes;
 - vi. Joint monitoring and evaluation of programmes.

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For a better participation of local bordering communities in the information and communication programmes, it shall be advised to build the capacities of local authorities in the performance of their prerogatives in the management of natural resources.

Article 13 : Measures to ensure Effective Enforcement of the Protocol

1. To foster effective enforcement of this Protocol, the Contracting Parties shall:
 - a. Develop and adopt national and regional action plans and programmes to ensure sustainable use of mangroves;
 - b. Integrate the management of mangroves in relevant sectoral strategies;
 - c. Adopt policies, specific legislative and regulatory measures on sustainable mangrove management at the regional, national and local levels;
 - d. Agree on common environmental priority programmes, within the first four years after the entry into force of this Protocol, to be reviewed biannually thereafter;
 - e. Encourage the use of best available techniques and environmental practices;
 - f. Promote the application and facilitate access to, and the transfer of, sustainable technologies, particularly in the use and exploitation of mangrove products;
 - g. Encourage the involvement of all parties concerned in the management of the mangroves.
2. The provisions of this Protocol shall not affect the right of the Contracting Parties to adopt and implement individually or jointly stricter measures than those required by this Protocol.

Article 14 : Compliance and Application

1. Each Contracting Party shall apply the measures required for the enforcement of the present Protocol.
2. Contracting Parties shall cooperate on the harmonization of national legislation and policies to effectively fulfil their obligations under this Protocol.
3. Each Contracting Party shall take appropriate measures under international law to promote compliance with the provisions of this Protocol and cooperate with other Contracting Parties by providing assistance, advice or information geared towards enhancing compliance and ensuring implementation of the Protocol.

Article 15 : Common Guidelines, Standards and Criteria

Contracting Parties, in accordance with annex IV shall cooperate with civil society and local authorities to develop and apply common guidelines, standards and criteria subjected to periodic reviews, proposed by one or many of them, on the following issues:

- a. Specific requirements on the management of the mangrove ecosystem;
- b. Required environmental quality for the protection of the health of the bordering communities and the mangrove ecosystems;
- c. Additional developments on ports, dykes, breakwaters and infrastructure that blocks tides;
- d. Construction of conduits for coastal waste water taking into account the methods for prior treatment of effluents;
- e. Control and gradual replacement of products, installations, industrial processes, and other factors causing considerable pollution of the marine and coastal environment.

Article 16 : Environmental and Eco-Assessment

1. Each Contracting Party shall endeavour to strictly adhere to article 13 of the Convention
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concerning mandatory environmental assessments, to ensure the compliance with annex III of this protocol and to help plan and implement their development projects so as to reduce to a minimum the immediate, short and long-term, cumulative and cross-border effects in the Protocol area.

2. Contracting Parties shall undertake mandatory, regular and systematic eco-assessments for activities, programmes and actual development processes that are likely to have an impact on the marine and coastal environment within the Protocol area.
3. Contracting Parties shall, in consultation with the Abidjan Convention secretariat, develop procedures and technical guidelines for the dissemination of information on the evaluation of the activities stated in paragraphs 1 and 2 of this article. Such measures shall take into account research on the sustainable use of mangroves and shall be correlated to article 11 concerning traditional knowledge.

Article 17 : Scientific and Technical Cooperation

1. Contracting parties shall take appropriate measures to facilitate scientific and technological research to reduce or eliminate any forms of degradation of the mangrove ecosystems and related wetlands in relation to the objectives of this Protocol. Such measures shall include research on the sustainable use of mangroves where appropriate and also linked with work carried out on article 11 related to traditional knowledge.
2. Contracting Parties shall cooperate, with the assistance of the competent regional and international organizations, in the areas of:
 - (i) scientific research
 - (ii) technology transfer
 - (iii) technical assistance for procurement, maintenance and production of the necessary equipment and installations
 - (iv) capacity-building training for scientific and technical staff,
 - (v) exchange of data and scientific information
 - (vi) monitoring and evaluation, including quality assurance programmes, as well as collaborative programmes in line with this Protocol.

Article 18: Reporting

1. In line with article 22 of the Convention, the contracting parties shall submit to the secretariat, periodic reports on the measures adopted in application of the present Protocol; the form and frequency of these reports being determined at the meetings of the Contracting Parties. The Secretariat shall ensure the circulation of the reports received in application of the paragraph to all the Contracting Parties.
2. The reports stated in paragraph 1 above shall contain and reflect:
 - i. Information on legal and regulatory measures, action plans, policies, programmes and other provisions put in place for the application of this Protocol;
 - ii. Permanent sovereignty of States over their mangrove resources;
 - iii. Sustainable management of the resources of the mangrove ecosystem;
 - iv. Ecosystem-based approach for the conservation of the mangrove resources;
 - v. Management of ecosystems focused on local knowledge, innovations and traditional practices;
 - vi. Functions of carbon sequestration by the mangrove ecosystem;
 - vii. Sustainable utilization and equitable sharing of incomes derived from resources within the mangrove ecosystem;
 - viii. Environmental conservation;
 - ix. Negotiation in case of conflict;
 - x. Identification of opportunities and challenges;
 - xi. The utilization of the mangrove resources in line with national legislations, regional

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- xii. cooperation and the principle of integrated management of natural resources; Information, consideration of the opinion of States and local bordering communities and/or consultation with them before they undertake any action or any project or programme likely to have a transboundary impact on the mangrove ecosystem or the possibility of implementing future projects and programmes;
 - xiii. Statistical data on the authorizations and permits granted and environmental and eco-assessments undertaken in application of this Protocol;
 - xiv. The guidelines for research, monitoring and evaluation to be developed by the secretariat, in collaboration with the Committee on Science and Technology of the Convention, pursuant to article 12;
 - xv. Information on activities resulting in the alteration of the shoreline, habitats located alongside the shoreline and the related watershed basins;
 - xvi. Information on the outcomes of initiatives aimed at preventing, reducing, mitigating and fighting against pollution;
 - xvii. Information on the overall results obtained and, if need be, difficulties encountered during the application of this Protocol.
3. Contracting Parties shall produce, at the ordinary meetings of the Parties, a report on the level of implementation of the monitoring and evaluation plan for the mangrove ecosystem that needs to be consolidated by a Committee at each meeting.

Article 19 : Functions of the Secretariat

Beyond activities define under article 16 of the Convention, Contracting Parties shall designate the functions of the secretariat as follows:

- a. Assist in raising funds for the application of this Protocol.
- b. Provide guidance and assistance to the focal points, liaison bodies or national research institutes and to all the committees, working groups or any special task force established in line with this Protocol or at the meetings of the Contracting Parties.
- c. Provide guidance on development of procedures and necessary mechanisms to evaluate and promote compliance and effective application of the Protocol, particularly the establishment of national, sub-regional and regional databases on the measures adopted for the application of this Protocol
- d. Assist and advise on the formulation of common guidelines, standards and criteria stated in this Protocol.
- e. Coordinate the development of frameworks for reporting, for synergizing systems and networks for exchange of information and other mechanisms for communication aimed at facilitating the application of this Protocol.
- f. Coordinate the formulation and implementation of education, training, awareness creation and public participation programmes on environmental issues.
- g. Prepare required reports and studies for the implementation of this Protocol and put them at the disposal of the Contracting Parties and of any other interested party.
- h. Assist the Contracting Parties, in cooperation with relevant regional, international, intergovernmental and non-governmental organizations, in developing and managing programmes and activities aimed at conserving the mangrove from unsustainable production activities in the area of the Protocol.
- i. Provide in partnership with the Committee on Science and Technology guidance and advice for the formulation of technical, research and management programmes on monitoring and evaluation and the causes of degradation of the mangrove ecosystem.
- j. Fulfil any other tasks assigned by the Contracting Parties.

Article 20 : Functions of National Focal Points

Each Contracting Party shall appoint a focal point to assist the Convention national focal point in the coordination of national efforts for the implementation of this Protocol. The Protocol national focal point shall periodically provide the Convention national focal point with reports on the progress of programme and activities at the national level for the sustainable management of the mangrove ecosystem and related wetlands. The Convention national focal point shall liaise between the Party and the secretariat.

Article 21 : Meetings of the Parties

1. The ordinary meetings of the Parties to this Protocol shall be held back-to-back with or in conjunction with the regular meetings of the Contracting Parties to the Convention, pursuant to Article 17 of the Convention. The Parties may also hold extraordinary meetings in accordance with Article 17, paragraph 1, of the Convention.

2. Ordinary meetings of Contracting Parties to this Protocol shall regularly deal with the implementation of this Protocol and, in particular:

- a. Consider the reports presented by the Contracting Parties in application of article 18 of the present Protocol.
- b. Adopt, consider and amend the annexes to the present Protocol if need be, in line with article 20 of the Convention,
- c. Consider the recommendations from the meetings of national focal points,
- d. Perform all other functions mentioned in article 17 of the Convention.

Article 22 : Relation to the Convention

1. The provision of the Convention relating to any Protocol shall apply to this Protocol.

2. The rules of procedure and financial rules adopted pursuant to article 21 of the Convention shall apply to this Protocol, unless the Parties to this Protocol agree otherwise.

Article 23 : Relation between this Protocol and Third Parties

1. The Contracting Parties can invite other States not party to this Protocol, as well as non-state parties such as international, intergovernmental and non-governmental organizations to cooperate in the implementation of this Protocol.

2. Each Contracting Party shall adopt appropriate measures in compliance with the rules of international law to ensure that nobody shall undertake within the limits of the national jurisdiction, activities that are contrary to the objectives, principles and goals of this Protocol.

Article 24 : Sovereignty and Rights

1. No provision of the present Protocol nor any law adopted on the basis of the present Protocol shall interfere with the rights and claims or actual or future legal positions of any State whatsoever concerning general international law, particularly the 1982 United Nations Conventions on the Law of the Sea .

2. No act or activity in application of this Protocol shall be a basis for claiming, supporting or challenging a sovereign or national jurisdiction claim.

Article 25: Final clause

1. This Protocol shall open at, on ... for signature by Contracting Parties to the Convention.

2. The provisions of Articles 27 and 28 of the Convention on ratification, acceptance, approval and accession shall apply *mutatis mutandis* to this Protocol.

3. The provisions of Articles 29, 30 and 31 of the Convention concerning entry into force, withdrawal and the responsibilities of the depository shall apply *mutatis mutandis* to this Protocol and its Annexes.

IN WITNESS WHEREOF the undersigned, being duly authorized by their respective Governments, have signed this Protocol.

Dated in ... this xxxxx two thousand xxx in copy in the English and French languages, the two texts being equally authentic.

ANNEXES

ANNEX I : Indicators¹ of the status and changing trends of the mangrove ecosystem:

An indicator is a measurable, precise, regular or stable and sensitive entity linked to a need for specific information such as the status of a target, the change associated with a threat or progress made in relation to an objective.

For the purpose of assisting in decision making for participatory and adaptive management (learning from experience and mainstreaming the lessons learned as part of the current and future programming) of mangroves, each party, in the context of the monitoring of mangroves, must spell out abiotic, biotic, anthropogenic indicators (pressures and threats), conservation, reclamation, rehabilitation, as well as those related to climate change and the governance of mangrove ecosystems.

1. Abiotic Indicators

The abiotic indicators shall include:

1.1. Coastal Geomorphology, focusing particularly on:

- The stability of sand dunes protecting the mudflats from erosion (fact sheet 1)
- The morphometry of estuaries, without sedimentary build-ups and/or artificial obstacles to water flows in the mudflats and ground soil (fact sheet 2).
- Height above sea-level of mudflats and of the soil, which are flooded all the more easily when they are low. (fact sheet 3)

1.2. Water, mud flats and soils:

- The particle size distribution of mudflats and soils, knowing that clay and silt are preferable to sand (fact sheet 4)
- The important role of temperature in mangrove distribution and reproduction. The ideal temperature is between 19°C and 35°C (fact sheet 5)
- Salinity: mangroves develop best when the salt content is between 10 and 40 g/litres. Below that level there is competition from hydrophytes, while excessive salinity hinders growth. (fact sheet 6)
- pH: the pH7 is ideal for water and soils. Acidification and salinization resulting from the drying of the sulphur-rich substrate (drainage, dykes, drought...) cause massive mangrove mortality. (fact sheet 7)
- Turbidity: the turbidity of the submersion water is an indicator of the enriching of the environment, which is beneficial to mudflats and soils. (Fact sheet 8)
- Biochemical oxygen demand: this is an essential indicator for the breathing of organisms and consequently the photosynthesis of plants. (fact sheet 9)

¹ indicators and fact sheets should be developed for flora (biomass, harvesting rates, threatened species) and fauna to include, threatened species, commercial species.

2. Biotic indicators

2.1. Plants

The woody (tree and shrub) stratum generally includes *Rhizophora racemosa*, *Rhizophora harrisonii*, *Rhizophora mangle*, *Avicennia africana*, *Laguncularia racemosa* and *Conocarpus erectus*. It can be characterized by the surface area, the density, height, the growth rate, woody productivity, the rate of rejuvenation, the mortality rate. Additionally, the alien, invasive Nypa palm (*Nypa fructicans*) is common in Nigeria and is spreading to other countries in the protocol area

Herbaceous crops include a few species such as the *Sesuvium portulacastrum*, the *Philoxerus vermicularis* and *Paspalum vaginatum*. The *Sesuvium* colonizes the freshly emerged mudflats and the other two are primarily found in the rear-mangrove plains.

2.2. Animals

Many species indicative of biodiversity are dependent on mangroves. The most emblematic are fiddler crabs (*Uca tangeri*), mud skippers (*Periophtamus papilio*), cerites (*Tympanototus fuscatus*), giant herons (*Ardea goliah*), dimorphic egrets (*Egretta dimorpha*), bar-tailed godwits (*Limosa lapponica*) and West African Manatee (*Trichechus senegalensis*). The latter must grab the attention of conservation.

The dwarf crocodile (*Oasteolaemus tetrapsis*), slender-snouted crocodile (*Mecistops cataphractus*), Nile crocodile (*Crocodylus niloticus*) and African python (*Python sebae*) occur in Liberian mangroves.

The West African manatee is an aquatic mammal living in mangrove and river ecosystems. This herbivore, - an endangered species on the IUCN Red List - suffers a lot from human activities. Thanks to community projects, national policies and regulations as well as international treaties, it may be hoped that the trend will be reversed toward the safeguarding of this natural cleanser of the river beds, which has been transferred from Annex 2 to Annex 1 of CITES.

3. Governance Tools:

The parties shall work out governance tools for mangroves comprising inter alia: number of protected areas, existing plans of action, number of management plans/master plans, co-management schemes, sustainable financing, political initiatives or strategies mainstreaming mangroves, a legislative and regulatory framework specific to mangroves, measures for the recovery of threatened species, institutions with powers and responsibilities for mangrove management and equipped with human, technical and financial resources; the development of synergies between stakeholders.

4. Anthropogenic indicators and others:

Population growth rate, mortality rate, level of fishery production, number of infrastructure (roads, dams, ports, dykes, breakwaters, hydro-agricultural infrastructure), number of mining and extractive industries having a negative impact on the health of mangroves, mangrove cutting, density of invasive species and land-based pollution; poaching; agriculture; fishing vessel and oil platform discharge

5. Indicators related to rehabilitation/reclamation initiatives:

Social and environmental impact assessments, designated grazing, reforested land, levels of involvement of stakeholders, multi-resource inventories etc.

6. Indicators related to the impacts of climate change:

These include rate of carbon sequestration, temperature and sea-level rise, coastal erosion and extreme events (storms, floods, drought, off-season rains etc.)

The monitoring of these indicators requires prior preparation of sheets characterizing each indicator to facilitate data collection in the field and/ or in the laboratory (Annexes).

Annex II : Sustainable enhancement of the resources of the mangrove ecosystem

The multiple uses of mangroves and adjacent spaces generate significant wealth which generally are of little benefit to riparian populations. Many sectors with negative impacts (e.g. agriculture, fishing, wood cutting) mainly benefit non-natives, whereas local populations are exposed to the negative impacts, mostly linked to the disturbance of continental and marine hydrology.

Also, while working on strategies for the mitigation of such impacts, we must not lose sight of the fact that the efficiency of sustainable enhancement techniques can be significantly expanded by an improved structuring of the production and marketing of the proceeds of income-generating activities. Seafood such as oysters and shellfish and mangrove honey are considered first-rate goods while tourism offers large potential. The incomes that can be derived from these activities by the populations can be much more substantial if they are organized on a large scale as part of fair trade. Such an initiative requires creating awareness among grassroots stakeholders and advocacy with public authorities and donors.

The practices that may impact negatively on the mangrove as well as alternatives to mitigate them are numerous.

- 1) Hydro-agricultural and aquaculture developments result in clearing and the alteration of moisture conditions, which dry out following the building of dykes and dams excluding sea water and the tunneling of drains. The ensuing acidity and salinity can lead to the sterilization of the land. Reclamation by way of reforestation and assisted natural regeneration is necessary. In terms of rice cultivation, soil acidity can be averted due to sea water readmission during the dry season provided that rainfall in the region is heavy.
- 2) Poor fishing practices have negative impacts on both the ecosystem and on fishery resources. Cutting of the roots of *Rhizophora* for oysters must be barred and replaced by the string technique. The regulations for meshes must be complied with, biological recovery periods and all provisions for responsible fishing must be abided by in referring to the Conventions on the Law of the Sea, the Code of Conduct for responsible fisheries of the FAO and the Convention on the minimum conditions of access to fishery resources.
- 3) The direct cutting of wood for multiple purposes considerably curtails existing areas.
 - i. The quantity of wood intended for the processing of fishery products (fish, shellfish...), for use in the kitchen (firewood and charcoal), for the construction of frames of huts in the countryside and as poles supporting concrete slabs in town, can be reduced significantly thanks to community-based reforestation, if sufficiently popularized, the introduction of woodlots with fast-growing tree species adapted to the climatic conditions of the country and the use of improved ovens.
 - ii. Salt Cooking is very heavy on wood: it is estimated that the production of one kg of salt requires 3.1 kg of wood. It has been proven that this activity can be replaced by the solar salt method.
- 4) In all cases deforestation must be offset by reforestation, deferred grazing and assisted natural regeneration. A regulation for cutting is essential, as well as an environmental and social impact assessment, clarification of land tenure (customary law *versus* conventional law), negotiation of local conventions or any other system of governance for sustainable ecosystem management.
- 5) The development of mineral ore cargo ports and/or oil drilling platforms in mangrove the ecosystem aggravate all the pollution risks associated with these activities. An Environmental and Social Impact Assessment and the establishment of a system of environmental intelligence are essential.
- 6) The construction of dykes, roads in the mudflats of mangrove reduces the oscillating volume and the submergence frequency by the tide causes the desiccation of mudflats, hence the slowdown in the growth of mangroves. The building of culverts to ensure the free movement of the tide is vital.

- 7) The construction of hydroelectric dams, and hydro agricultural facilities, plantations, the industrial units constructed on spaces adjacent to the mangrove area are likely to cause sedimentary deficits in mudflats and coastal beaches and underground freshwater. Furthermore, pollution caused by agricultural inputs (fertilizers, herbicides, pesticides), industrial wastewater (heavy metals), domestic waste, including waste from fishing and maritime-transport vessels, waste from oil and gas platforms, medical waste and plastic packages, are actual threats. In this case also, an environmental impact assessment and the establishment of an environmental intelligence system is vital.
- 8) It should be noted that beyond these infrastructures, watersheds extending the coastal zone must be stabilized or renovated through reforestation, deferred grazing, and assisted natural regeneration or any other form of activity likely to ensure integrated management of coastal areas including mangroves.
- 9) Beekeeping is an activity that can generate substantial incomes, provided that impact assessment is carried out and appropriate honey processing and labelling are ensured.
- 10) In addition, the presence of hives among mangrove trees can contribute to the protection of mangroves on condition that awareness is raised to avoid a massive attack of bees whose consequences could be horrendous.
- 11) Ecotourism can also generate substantial incomes if the following is done after an environmental impact assessment: viable channels (waste management, preservation of sensitive locations, selection of itineraries to showcase cultural values...) are developed and managed by competent eco-custodians coupled with the promotion of environmental education.
- 12) Hunting, which is an activity that mainly deals with emblematic species within the mangrove, some of which are on the IUCN Red List (Manatee – family Trichechidae), must be prohibited.
- 13) Invasive species can be a major threat and the primary goal is prevention and control by avoiding the irreversible alteration of the (fresh water/salt water) moisture balance and the introduction of such species. Failing that, one must find out a means of enhancement for invasive plants;
- 14) The extraction of marine sand accelerates coastal erosion and must be prohibited.
- 15) Herbal medicines play a major role in low-cost traditional health care delivery but may have a negative impact if the commercial exploitation is not regulated.
- 16) Reforestation is a major reclamation measure that still deserves to be controlled in terms of species and space. In this instance there is a need to conduct an environmental impact assessment and to take the relevant management measures.
- 17) Scientific research should inform all enhancement, preservation and reclamation initiatives, including data collection on biocenoses, remote monitoring, mapping updates, the establishment of databases, assessment of carbon sequestration and other ecosystem services, etc.

ANNEX III : Environmental and Social Impact Assessment

Any development project on mangrove and in adjacent areas or any activity likely to harm the environment, will form the subject of an environmental and social impact assessment (ESIA), including hydro-agricultural and aquaculture facilities, factories, dams, ports, dykes, road, and exploitation of hydrocarbons and rare earth metals (e.g. zircon)

In the case of projects already under implementation, an environmental audit should be done.

As part of the process of the environmental and social impact assessment, applicants must be able to demonstrate their expertise in the field of technical skills as well as access to adequate financial resources.

Adequate controls and monitoring must be performed to ensure compliance with permitting terms and conditions in order to ensure that the authorization conditions can be confirmed by the appropriate national authority.

List of questions for project planning in mangrove and in adjacent areas

If the answers to these questions are «YES», an ESIA will apply [If the answer to any of these questions are «YES», an ESIA will apply]

- 1) Do you have mangroves and other critical coastal wetlands within the project area?
- 2) Do you have mangroves upstream or in the project area?
- 3) Are we talking about mangroves of national or international significance?
- 4) Do they play an important economic role at the regional, national and local levels; and
- 5) Do these mangroves have a relevant value for biological diversity or the landscape?
- 6) Will the project affect the hydrology of these mangroves and adjacent watersheds?
- 7) Will the project induce water-borne diseases?
- 8) Will the project affect the expanse of these mangroves and adjacent watersheds?
- 9) Will the project affect the mangrove ecosystem, watersheds, including the flora, fauna and in particular migratory bird and fish species?
- 10) Will the project affect the functions and end uses of mangroves and the water in the adjacent watersheds?

It is necessary to identify and protect the hot spots of biodiversity, endangered species and habitats associated with mangroves, marine and coastal ecosystems namely:

- a) Tropical coral reefs, if any
- b) Mangroves
- c) Marine herbal communities
- d) Seamounts
- e) Migration corridors
- f) Spawning areas and nurseries
- g) Upwelling areas
- h) Wetlands and critical coastal habitats from watersheds for the purpose of connectivity, in particular: estuaries, lagoons, delta, bays and mudflats.

The environmental and social impact assessment contains at least the following elements:

- Geographical bounding of the area in which the activities are contemplated, including, if applicable, the security areas;

- A description of the initial baseline conditions of the environment, specifically for the mangrove:
 - Hydrology,
 - Mudflats and soils,
 - Shoestring sands,
 - Flora,
 - Fauna,
 - Socio-economics,
 - Cultural and religious heritage
 - Pollution
- A description of the potential social structures affected and economic activities likely to be affected, including the specific information necessary to identify and assess the effects of the activities proposed; this should include a description of potentially-affected communities and the current economic activities by sector, including vulnerable communities and activities from a socio-economic standpoint where appropriate; and a description of the current status of social structures and the economic activities in the region in question;
 - Indications relating to the nature, the purposes, the importance and the duration of the activities contemplated;
 - A description of the methods, facilities and other means to be used, and the possible alternatives;
 - A description of the predictable direct or indirect, short-term and long-term effects of the envisaged activities on the environment, including fauna, flora, mudflats, soils and the ecological balance as well as the socio-economic impacts.
 - A report describing the measures envisaged to reduce to a minimum the risk of damage to the environment resulting from the activities envisaged, the possible alternatives to such measures as well as the evaluation of the effectiveness, limits and potential consequences of such measures.
 - The indications relating to the measures to be taken for the conservation of the environment against pollution and other adverse effects during and after the activities contemplated;
 - A statement spelling out the realistic potential economic and social benefits, including not only various socio-economic benefits, but also the stakeholders likely to benefit in various ways;
 - A list of ecosystem services contained in the terms of reference of the environmental and social impact assessment, including the identification of priority ecosystem services envisaged and the stakeholders involved in the process of the environmental and social impact assessment;
 - A presentation of the proposals for monitoring the predictable environmental impacts and the mitigation measures proposed;
 - An indication of knowledge gaps and uncertainties that may be encountered as part of the computing of the required information, as well as an indication of the potential dangers likely to pose future risks;
 - A presentation of the methodology used to conduct the environmental impact assessment;
 - An indication of the probability that the environment of a neighboring country is affected by the activities envisaged. The authorities of this country must be informed and consulted on any project or any activity likely to have cross-border impacts.
 - If appropriate, the mitigation measures must be negotiated with the authorities of the neighboring country.

In addition to the issues highlighted above, appropriate prior communication followed by transparent public participation should be ensured in the context of the process of the environmental and social

impact assessment so that other groups of stakeholders and members of the public can provide inputs before any decision-making by the appropriate authority.

Decisions should be communicated openly and minutes of decisions should be made available to the public stakeholders and others. Also, provide for a remedial process, specifying the grounds of remedy concerning the decisions as well as the conditions required to file a remedy. Events with a negative impact on the environment should be transparently dealt with.

The main negative impacts of interventions in mangrove areas and in the adjacent spaces as well as the mitigation measures appear in the tables below:

Table 1: Main impacts of development activities or projects concerning the natural resources in the mangroves and related coastal wetland ecosystems and watersheds, and mitigation measures

Project and project sub-type	The main impacts on coastal wetlands	Proposed mitigation measures
Agriculture		
Intensive Crops	<ul style="list-style-type: none"> • Drainage and conversion of wetlands • ZH Conversion • Acidification of soils • Loss of the ability to combat flooding 	<ul style="list-style-type: none"> • Provision of « No Net Loss» • Readmission of the sea water in the dry season
Irrigation	<ul style="list-style-type: none"> • Diversion of water from wetlands • Downstream loss of water supply • Increase of waterborne diseases • Soil erosion and sedimentation 	<ul style="list-style-type: none"> • Increase in the efficiency of irrigation • Improve the traditional use of cultivation enhancing the wetland • Release of fresh water onto flood plains
Drainage	<ul style="list-style-type: none"> • Modification of the ground moisture balance • Drying of wetlands and changes of species • Oxidation of potentially acid sulfate soils • Increase in the salinity of drainage water and the receiving water bodies 	<ul style="list-style-type: none"> • Provision of « No Net Loss»
The use of fertilizers and agricultural chemicals	<ul style="list-style-type: none"> • Eutrophication water levels - blooms of algae, mortality of fish, etc. • Pollution by pesticides, mortality of fish and wildlife, bioaccumulation 	<ul style="list-style-type: none"> • More efficient use of fertilizers • Integrated pest management
Forestry		
Mangrove	<ul style="list-style-type: none"> • Deforestation • Dieback by drying of mudflats • Pollution 	<ul style="list-style-type: none"> • Reforestation • Reclamation of the submergence by the sea water • Pollution control
Fisheries		
Traditional and industrial fishing	<ul style="list-style-type: none"> • Improvement of the performance of the fishing gear induces a Risk of Overfishing • The inappropriate fishing techniques and gear can reduce the stocks • Risk of pollution of the water in the fishing ports 	<ul style="list-style-type: none"> • Regulation of the mesh of the nets • Compliance with the existing provisions for responsible fishing • Biological recovery • Treatment of waste in ports
Aquaculture	<ul style="list-style-type: none"> • Degradation of natural wetlands • Clearing of mangroves • Loss of natural spawning areas 	<ul style="list-style-type: none"> • Wise selection of sites • Control of introduced species

	<ul style="list-style-type: none"> • Reductions in fish stocks • Competition between exotic species and native species • Use of chemicals and antibiotics • Pollution of drinking water 	
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Table 2: Main impacts of infrastructure development activities, and mitigation measures

Project and project sub-type	The main impacts of coastal wetlands	Proposed mitigation measures
Hydroelectricity	<ul style="list-style-type: none"> • Loss of some functions of wetlands including mangroves • Change in the quality of the water and the seasonal flow of the water downstream of rivers and floodplains • Deficit of sediments feeding the mangroves downstream of the dams 	Avoid building hydro-electric dams
Roads and railways	<ul style="list-style-type: none"> • Hinders the movement of the flow of surface water, in particular in the tidal wetlands 	<ul style="list-style-type: none"> • Ensure the free movement of groundwater and surface water from one side to the other • Design and calculation of road routes to avoid wetlands
Ports and Hydrocarbons	<ul style="list-style-type: none"> • Loss of mangroves • Oil and industrial waste pollution 	<ul style="list-style-type: none"> • Mangrove reclamation • Remediation of areas polluted by hydrocarbons

Table 3: Major impacts and proposed mitigation measures for the development of activities in respect of the industry and mining operations

Project and project sub-type	The main impacts of coastal wetlands	Proposed mitigation measures
Industrial development	<ul style="list-style-type: none"> • Drainage and backfill of mangroves for industrial locations • Pollution of surface waters and groundwater of the mangrove by hydrocarbons and toxic waste • Pollution by solid waste dumping into the streams and the mangrove 	<ul style="list-style-type: none"> • Reclamation of the Mangrove on other sites • Measures to control water Pollution • Solid Waste Collection
Exploration and oil production	<ul style="list-style-type: none"> • Pollution by oil and other derivatives in the Mangrove • Isolation and fragmentation of ecosystems through the construction of roads. 	<ul style="list-style-type: none"> • Measures to control oil pollution. • Construction of culverts for the free movement of the tide
Oil pipelines	<ul style="list-style-type: none"> • Damage caused by the construction of oil pipelines in mangrove areas. • Accidental oil spills. 	<ul style="list-style-type: none"> • Measures to control oil pollution.
Human settlements	<ul style="list-style-type: none"> • Encroachment • Increased harvesting of mangrove resources 	<ul style="list-style-type: none"> • Regulatory framework for construction

Project and sub-project type	Main impacts on coastal wetlands	Proposed mitigation measures
hotels	<ul style="list-style-type: none"> • Construction-related damage in the vicinity of mangrove areas • Pollution uncontrolled wastewater disposal • 	<ul style="list-style-type: none"> • Pollution-control measures
Marinas	<ul style="list-style-type: none"> • Removal of mangroves • Oil and wastewater pollution 	<ul style="list-style-type: none"> • Restoration of the mangrove in other sites • Equipment for controlling water pollution • Waste-receiving facilities
Eco-tourism	<ul style="list-style-type: none"> • Disturbance of wildlife and habitat • Poaching • Increased operational pressures 	<ul style="list-style-type: none"> • Control on the number of visitors and the schedule • Local awareness campaign and to visitors • Local participation in the management and benefits • Implementation of a waste-management policy.

Table 4: The main impacts of the development of tourism activities and mitigation measures

ANNEX 4: GUIDELINES FOR THE SUSTAINABLE MANAGEMENT OF MANGROVE ECOSYSTEMS

Article 1: Content of guidelines, standards and common criteria

Contracting Parties shall cooperate with a view to establishing and enforcing guidelines, standards and common criteria to be periodically revised on the proposal of one or several of them and on the following matters:

- a) The specific requirements relating to the management of the mangrove,
- b) The quality necessary for the protection of the health of local communities and mangrove ecosystems,
- c) Development of infrastructure such as earth roads, dikes and roads blocking the free flow of water,
- d) The construction of the discharge pipe of coastal wastewater, taking into account methods for the pre-treatment of effluents,
- e) The control and the gradual replacement of products, facilities, industrial processes, and other factors that are causing or are likely to cause substantial pollution of the marine and coastal environment.

Article 2: Strengthening of the legal and institutional framework

In pursuance of Article 7 of the Protocol on the sustainable management of mangroves, the Contracting Parties to this Protocol agree to make all provisions with a view to strengthening the legal and institutional framework for the sustainable management of mangrove ecosystems. This legal and institutional framework includes all of the applicable international conventions, national regulations and laws in force, as well as regional legal and sub-regional instruments.

Article 3: Implementing measures

To ensure a rational and effective management of mangrove ecosystems, the Contracting Parties must enforce the required measures and the above guidelines specified for the implementation of this Protocol. To this effect, they shall cooperate in the field of the harmonization of their domestic legislation and policies with a view to effectively fulfilling their obligations under this Annex.

Each Party State shall take the appropriate measures in the light of international law to promote compliance with the provisions of this Protocol and cooperate with the other Contracting Parties by providing them with the necessary assistance, advice or information to ensure the application of these guidelines

Article 4: Management Measures

The Contracting Parties, in collaboration with the development partners and the relevant regional sub-regional and international organizations shall:

- i. Set up training centers for capacity building of stakeholders:
- ii. Pass laws for a sustainable management of mangroves, including harmonization of policies, legislation and control measures.
- iii. Establish structures for the decentralization of the management of the mangrove ecosystems, taking into account the multi-sectorial aspect of mangrove management.
- iv. Identify the ministries and other organizations directly involved in the management of mangroves.
- v. Establish a framework for concerted action or joint management by Party States, which will be coordinated by a central authority in each State.

Article 5: Enforcement

The States Parties, under their national legislation, shall lay down provisions with a view to effective enforcement of existing laws and regulations. Violations of the laws and regulations relating to the management and conservation of mangroves entail exemplary civil penalties and the impositions of fines for the purpose of restoration on the perpetrators of these offences.

