



## ACTIONS PROPOSAL

**Action Group :** 1.E Halt the loss of aquatic biodiversity and invasive species in water ecosystems

**Coordinators(s)** International Union for Conservation of Nature (IUCN)

**Group members :** Ramsar Convention , Ministry of Water and Sanitation of Senegal, Wetlands international west Afrique , Convention on Biological Diversity (UNCBD) , SPYGEN, Consórcio PCJ

**Pilot Group observer :** Aquafed and K-Water

**ACTION 1: (TBC)** Evaluation of the control (mechanical, biological and chemical) of aquatic invasive plants in different regions of the world and dissemination of best practices)

**Overall Objective:** TBD

**Overall purpose and expected results:** TBD

**Overall SDGs Alignment:** TBD

**Coherence with other Priorities:** TBD

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs ALIGNMENT	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY IN OTHER CONTEXTS	REGIONAL SCOPE	POTENTIAL OVERLAPPING OR COHERENCE WITH OTHER AGs
<p><b>Project 1</b> - Evaluation of the control (mechanical, biological and chemical) of aquatic invasive plants in different regions of the world and dissemination of best practices)</p>	<p>Collect information on the main invasive plants (evolution of colonization, known control methods, valuation, and perspectives) in order to feed biodiversity databases. -Data/Knowledge/ experience sharing</p>	<p><i>Invasive plants are a real problem in some parts of the world and were a key topic on the agenda of the discussion forums at the Seventh Conference of the Parties of the Convention on Biodiversity (CBD) in 2004. In Senegal the problem is particularly sensitive in the Senegal River delta. Few studies on invasive plants have been carried out and knowledge is not yet commensurate with the scale of the phenomenon. It is therefore essential to better understand the biological characteristics of these species and also to take stock of the different control methods and forms of enhancement adopted</i></p>	<p>Stakeholders are informed on the state of play and have an adequate knowledge base on invasive species around the world;</p> <p>The capacities in the fight against invasive plants are multiplied;</p> <p>Decision-makers are informed for the definition of appropriate policies in the field of invasive plant control or their enhancement;</p> <p>Best practices are promoted and disseminated through exchange programmes.</p>		<p>Widening a biodiversity database with information on the main invasive plants.</p>	<p>Wetlands International Afrique – Côte Occidentale et Golfe de Guinée <i>Contact Point :</i> Ibrahima Thiam</p>		<p><i>Guinea</i></p>	



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		<p><i>in the various regions affected by the problem.</i></p> <p><b>Specific objectives:</b>          Make information on invasive plants available to stakeholders;</p> <p>To list and share experiences in the field of control;</p> <p>Inform on the possibilities of valorization of these species;</p> <p>To help in the formulation of programmes for the control of invasive species and / or the valorisation of these species.</p>							
<p><b>Project x</b> - The group expects to gather new project proposals through the consultation Process.</p>									



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### ACTION 2: Implementation of the Management Plan of a Restored Ramsar Site – Réserve Spéciale d'Avifaune du Ndiaël – Sénégal (RSAN)

**Overall Objective:** Improve the management and governance of the RSAN in order to durably transform it into a sustainable and resilient Ramsar site

**Overall purpose and expected results:** The restored ecosystems of RSAN provide socio-economic benefits to populations and enhanced biodiversity in a better protected area

**Overall SDGs Alignment:** 13, 14, 17

**Coherence with other Priorities:** This action is in coherence with dynamics aiming at strengthening key biodiversity spots of international importance and reversing the degradations of wetlands around the globe in the context of climate change

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs ALIGNMENT	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY IN OTHER CONTEXTS	REGIONAL REPRESENTATIVENESS	POTENTIAL OVERLAPPING OR COHERENCE WITH OTHER AGs
<p><b>Project 1</b> – Project to support the implementation of the Management Plan of the Ndiaël Special Avifauna Reserve</p>	<p>Implementation of the development and management plan for a rehabilitated wetland of international importance, the Ndiaël Special Avifauna Reserve.</p> <p><i>-Local Initiative/Governance/Stakeholder coordination / Data/knowledge/experience sharing / Awareness raising</i></p>	<p>The main justification for this action is to support the implementation of the Management Plan of the Ndiaël Special Avifauna Reserve (RSAN). This Ramsar Site is of great importance for the conservation of the biodiversity of the Senegal River Delta, particularly the avifauna, and the socio-economic activities of the riparian communities in a context where the development of agribusiness and climate change seriously threaten the integrity of this ecosystem. Moreover, through its role in the migration of birds from one continent to another, the Ndiaël is of international interest for the conservation of different bird species. This action is all the more justified as the</p>	<p><b>Expected results:</b></p> <p><b>Specific objective 1:</b> To put in place the protection measures and developments necessary for better management of the natural resources of the Ndiaël Special Avifauna Reserve.</p> <ul style="list-style-type: none"> <li>- Result 1.1. Effective monitoring, protection and surveillance measures for the site and its resources implemented</li> <li>- Result.1.2. Development allowing better management of natural resources achieved.</li> <li>- Result.1.3. An invasive plant control program is implemented.</li> </ul>	<p>SDG 13 – 15 – 17</p> <p>SDG 13 - "Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy"</p> <p>SDG 15 - "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".</p> <p>SDG 17 - "Strengthen the means of implementation and revitalize the global partnership for sustainable development".</p>	<p><b>Already Launched:</b></p> <p>This project is all the more justified since, after a long period of degradation and the inscription of threatened wetlands in the Montreux register, following enormous development efforts by national stakeholders and their partners, the Ndiaël is recovering its former lustre. Thus, in October 2018, at CoP 13 of the Ramsar Convention in Dubai, Ndiaël was removed from the Montreux List.</p> <p>One of the roles of this project will be to reinforce the dynamics set in motion, by mobilizing all the actors towards the same vision and by promoting a synergy of action between the managers of the protected areas and the key ecosystems of</p>	<p><b>Organisation :</b> Union Internationale pour la Conservation de la Nature - UICN – SENEGAL</p> <p><b>Contact:</b> Racine KANE (<a href="mailto:racinabou@gmail.com">racinabou@gmail.com</a>)</p> <p>IUCN is the project developer and has interacted with government of Senegal during the formulation process which has involved stakeholders in particular the 32 villages of the Association Intervillageoise (AIV-Ndiaël).</p> <p>The resoration process which successfully led to the retrieval of the RSAN from the Montreux register of endangered Ramsar Sites was funded by the African Development Bank from 2014-2018.</p> <p>UICN is trying to mobilize funds in</p>	<p>The project is replicable to other sites in terms of approach used i.e. use of high level expertise from World Commission of Protected Areas (WCPA) – Involvement of Stakeholders at local, national and international levels – Mobilization of funds from financial International Development corporations (African Development Bank). A major prerequisite was the existence of a convening partner like IUCN in order to build synergies among partners and stakeholders.</p>	<p><i>The RSAN is entirely located in Senegal but it is also included in the Senegal Delta River Transboundary Reserve (SDTBR) which encompasses the Mauritania side of the Senegal River Delta and several protected areas located in both countries (Sénégal and Mauritania)</i></p>	<p>1.D. Protect and restore ecosystems and forests, including coastal and marine impacts, and combat desertification (6.6 14.1, 14.2, 15.1, 15.3)</p> <p>1.F. Strengthen resilience and adaptive capacity to climate change and natural disasters (13.1, 11.5, 1.5, 11.B, 13.3)</p> <p>4.A- Mobilizing additional financial resources and promoting innovative financing mechanisms (17.3, 2.A)</p> <p>4.B- Implement the principles of good water governance, including participatory decision-making (6.5, 6.B, 16.7, 5.5, 17.18)</p>

		<p>Ndiaël, after a long period of degradation and inclusion in the Montreux register of threatened wetlands, following enormous development efforts by national stakeholders and their partners, is now regaining its former lustre. Thus, in October 2018, at CoP 13 of the Ramsar Convention in Dubai, Ndiaël was removed from the Montreux List.</p> <p>One of the roles of this project will be to reinforce the dynamics set in motion, by mobilizing all the actors towards the same vision and by promoting a synergy of action between the managers of the protected areas and the key ecosystems of the Senegal River Delta, so that this site will never again return to the Montreux register.</p> <p>To do this, the channel that provides the water supply to the site and which is subject to heavy invasion by typha domingensis (Typha domingensis), which prevents the free flow of water and thus reduces the volume of water entering. An action to remove the typha and some sediment banks that</p>	<p><b>Specific objective 2:</b> Implement governance and initiatives to increase the ecological and socio-economic benefits generated by the Ndiaël Special Avifauna Reserve.</p> <ul style="list-style-type: none"> <li>- Result.2.1. An effective awareness, information, and training programme for stakeholders set up</li> <li>- Result.2.2. Organized site use and livelihoods of riparian populations strengthened</li> <li>- Result.2.3. Management of the site and its periphery linked to that of the Senegal Delta Transboundary Biosphere Reserve (SRBTDS)</li> <li>- Result.2.4. A dynamic partnership to ensure sustainable financing and management of the RSAN promoted.</li> </ul>		<p>the Senegal River Delta, so that this site will never again return to the Montreux register.</p>	<p>order to implement the Management Plan. The Luxemburg government has shown interest to funding it but negotiation is still under way.</p>			
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		reduce the water flow is in preparation.							
<p><b>Project x</b> - The group expects to gather new project proposals though the consultation Process.</p>									

**ACTION 3: Global biodiversity monitoring with environmental DNA (eDNA)**

**Overall Objective:** Set up biodiversity monitoring programs using eDNA to assess ecosystems biodiversity, species richness, global trends, resilience to ecological impacts, effectiveness of conservation measures on the long term

**Overall purpose and expected results:** perform non invasive and near-complete biodiversity inventories including detection of rare and elusive species, set benchmarks on biodiversity richness and track species repartition

**Overall SDGs Alignment:** 15, 14, 3, 17

**Coherence with other Priorities:** This action can be integrated in larger initiatives where biodiversity evaluations are required, for knowledge consolidation, water resources management, or conservation programs assessments

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs ALIGNMENT	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY IN OTHER CONTEXTS	REGIONAL REPRESENTATIVENESS	POTENTIAL OVERLAPPING OR COHERENCE WITH OTHER AGs
<p><b>Project 1</b> – Global biodiversity monitoring with environmental DNA</p>	<p>Monitor aquatic biodiversity and detect invasive species with environmental DNA (eDNA) to assess ecosystem biodiversity, species richness, resilience to ecological impacts, or effectiveness of conservation measures.</p> <p><i>Local initiative, stakeholder coordination, Data/knowledge/experience sharing, Technological Innovation</i></p>	<p><i>This action aims to set up a monitoring program for aquatic biodiversity using the innovative environmental DNA technology. This approach makes it possible to assess the taxonomic richness and diversity of a site, to reveal the presence or disappearance of rare species, to monitor the evolution of species communities in time and space, and to detect and track the expansion of invasive species. Environmental DNA is DNA that can be extracted from environmental</i></p>	<p>The expected results are the set-up of an aquatic biodiversity monitoring project at one or more selected sites, with the completion of field inventories of different taxonomic groups using eDNA, the production of maps and reports on the biodiversity of the ecosystems studied, along with recommendations on conservation measures to be implemented based on the knowledge generated by the project.</p>	<p><b>Goal 15:</b> <b>Life on Land.</b> Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity</p> <p><b>Goal 14:</b> Conserve and sustainably use the oceans, seas and marine resources</p> <p><b>Goal 3:</b> Ensure healthy lives and promote well-being for all at all ages.</p>	<p>The steps for implementation will be:</p> <p>1.The search for local partners who will commit to carry out the sampling and the project's follow-up on site. We can think of many possible partners from various grounds (academic institutions, management organizations, NGOs, Water Agencies, ...).</p> <p>2.The selection of one or more sites to be studied. The sites may be proposed by the partners according to their actions in the</p>	<p><b>Organisation :</b> SPYGEN <b>Contact:</b> Pierre JORCIN <a href="mailto:pierre.jorcin@spygen.com">pierre.jorcin@spygen.com</a></p> <p>SPYGEN is the project founder and will be its main coordinator. However, this concept has been developed thanks to the partnerships with multiple actors from various grounds, research institutions, public organizations; NGOs and private companies.</p> <p>We propose to involve multiple participants and stakeholders</p>	<p>The project's approach is entirely based on standardization and replicability. The technological components of the project allows this action to be taken in any place in the world, where the solution is required. Projects can be run in various contexts thanks to standardized tools and outcomes.</p> <p>This action also offers flexibility in implementation in terms of projects scale. For instance, this action can be taken for a small pilot project, as</p>	<p>The project is based on a universal approach and can be implemented on any site of interest. Moreover, the project implementation is focused on partnership and capacity building, with the objective to establish regional networks. Therefore, the regional representativeness can be ensured by local partners.</p>	<p>This action can be easily integrated in a larger program focused on nature conservation. It can fit in any global action that requires biodiversity inventory and monitoring. It is especially well suited for projects on river and wetlands management, as part of knowledge consolidation or for assessment purpose on the positive impacts of rehabilitation projects (mangroves reforestation, etc...).</p>

		<p><i>samples (air, soil, water) without isolating target individuals. It allows detecting DNA released through faeces, urine, gametes, mucus, saliva, or skin, etc. The eDNA makes it possible to detect the species present in the target environment at the time of sampling or during the 15 days preceding sampling (mammals coming to drink for example). Identification is based on genetic reference databases that have been developed for many taxonomic groups and which continue to be documented.</i></p> <p><i>eDNA is operational for monitoring aquatic and terrestrial wildlife from water samples, and can be used in conservation projects or impact assessments. The result obtained indicates the list of taxa detected with relative abundance classes. This method has the advantage of offering a high detection capacity, especially in the case of rare, elusive or invisible species. It is cost effective, non-invasive for the environment, easy to implement in the field, and preserves the safety and health of operators.</i></p>	<p>The detailed content of the project, the targeted objectives and the planning should be designed in a timeframe that will allow to propose this action for the World Water Forum.</p> <p>This action can be a project proposal and its practical implementation could take place at a later stage.</p> <p>This action could be integrated into global programs and conservation initiatives currently underway or planned.</p>	<p><b>Goal 17:</b> Revitalize the global partnership for sustainable development</p>	<p>field and their research interests.</p> <p>3. Submit the proposal to funding organizations to secure a budget for implementation in the fields.</p> <p>4. Conduct data collection and perform the genetic analyses.</p> <p>5. Produce reports and share the outcomes with communications on the results, and advocate for biodiversity assessments and conservation initiatives at larger scale.</p>	<p>through capacity building, trainings, and transfer of technological packages. Our main goal is to support conservation initiatives by providing tools and expertise to conduct and optimize biodiversity assessments.</p> <p>The data collected during the projects will be shared with the community thanks to an open access database and web platform.</p>	<p>well as for a large regional program.</p>		
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		<i>The eDNA data obtained can contribute to the evaluation of conservation measures, such as reforestation of watersheds, development of lakes and ponds, rehabilitation of rivers, wetlands, or mangroves, etc.</i>							
<b>Project x</b> - The group expects to gather new project proposals through the consultation Process.									