

MEADOWS OF KNOWLEDGE

PUTTING WEST AFRICA ON THE GLOBAL SEAGRASS MAP

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RESILIENSEA | ABOUT THE PROJECT

Despite the presence of seagrass meadows (*H. wrightii*, *C. nodosa*, and *Z. noltei*) in West Africa, this region has historically been one of the least studied areas of seagrasses in the world. Without adequate data and knowledge of seagrasses in West Africa, these ecosystems have often been omitted from protection, conservation and management policies. A recent seagrass programme funded by the MAVA foundation has supported research and capacity- building activities to map and monitor seagrasses within seven West African pilot countries: Cabo Verde, The Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone. Through this programme, the ResilienSEA (Resilient Seagrasses) project (2018–2022) was launched and has sought to enhance scientific expertise and build capacity to improve seagrass protection within these countries. Over the past five years, these pilot countries have mapped the presence of seagrasses at various national pilot sites, where further research, management and outreach activities have been conducted. Approximately 83,288 ha of seagrasses have been documented within these countries to date, and monitoring activities have even prompted the discovery of several previously unknown seagrass meadows. The ‘Meadows of Knowledge’ atlas showcases the recent strides made in West Africa to discover, map and monitor seagrass meadows, ultimately providing a baseline for the status of seagrasses in this region as of 2022.

Seagrasses were already known to exist along the shorelines of some pilot countries, such as Cabo Verde, Mauritania and Senegal, prior to the start of the ResilienSEA project, but they had not been comprehensively mapped. For other countries, the national awareness and subsequent management of seagrass meadows is just beginning. The factors that contribute to the lack of coastal ecosystems management and protection vary by country, although challenges such as insufficient financing and the limited capacity and training of managers and practioners are consistent throughout the region. Nevertheless, significant progress has been made within pilot countries, in terms of local capacity-building and national policy accomplishments. For more information on the policy developments and opportunities to protect seagrass meadows within each pilot country, read more below.

MAURITANIA



Significant efforts have been made in recent decades to improve environmental protection in Mauritania and the Banc d'Arguin National Park. The country's increasing engagement in international, multilateral and regional agreements has encouraged such efforts, with two MPAs created to protect important marine and coastal ecosystems (the Banc d'Arguin National Park and Cap Blanc).

There is also immense potential for Mauritania to recognize the value of seagrass meadows and their ability to sequester carbon by incorporating seagrasses into the country's NDC to further its climate mitigation goals. In 2018, a multidisciplinary team from the University of Portsmouth carried out an initial assessment of the ecosystem services of the Banc d'Arguin, particularly the amount of carbon stored in the park's seagrass beds, not including carbon stored in sediments. According to the results of this assessment, the share of carbon dioxide (CO2) sequestered by the park's marine ecosystems in 2020–2030 is expected to reach 7.3 megatons of CO2 equivalent (MT CO2eq), which is 22 per cent of the total avoided greenhouse gas emissions referred to in the Paris Agreement.

CABO VERDE



The conservation of seagrass meadows can play a significant role in preserving Cabo Verde's rich biodiversity and coasts, and is therefore part of the country's international commitment to preserve biological diversity (Convention on Biological Diversity). Cabo Verde currently has 46 protected areas and three marine managed areas. Once Cabo Verdean policymakers became aware of the presence of seagrasses within the country after their presence was confirmed in 2015, seagrass beds were explicitly incorporated into the country's updated NDC made in 2021. The NDC update process was innovative and cooperative, led by the National Directorate for the Environment, in a participatory process with all stakeholders. Adaptation contribution #6, which refers to the protection of marine resources and coastal zones within the updated NDC, specifically mentions Cabo Verde's intention to inventory its seagrass meadows and develop a strategy of protection and conservation of these ecosystems by 2024. Cabo Verde now belongs to the handful of nations worldwide who have included seagrass meadows within their NDC. These ambitious efforts have even paved the way for other West African countries like Sierra Leone to include seagrass meadows in their NDC.

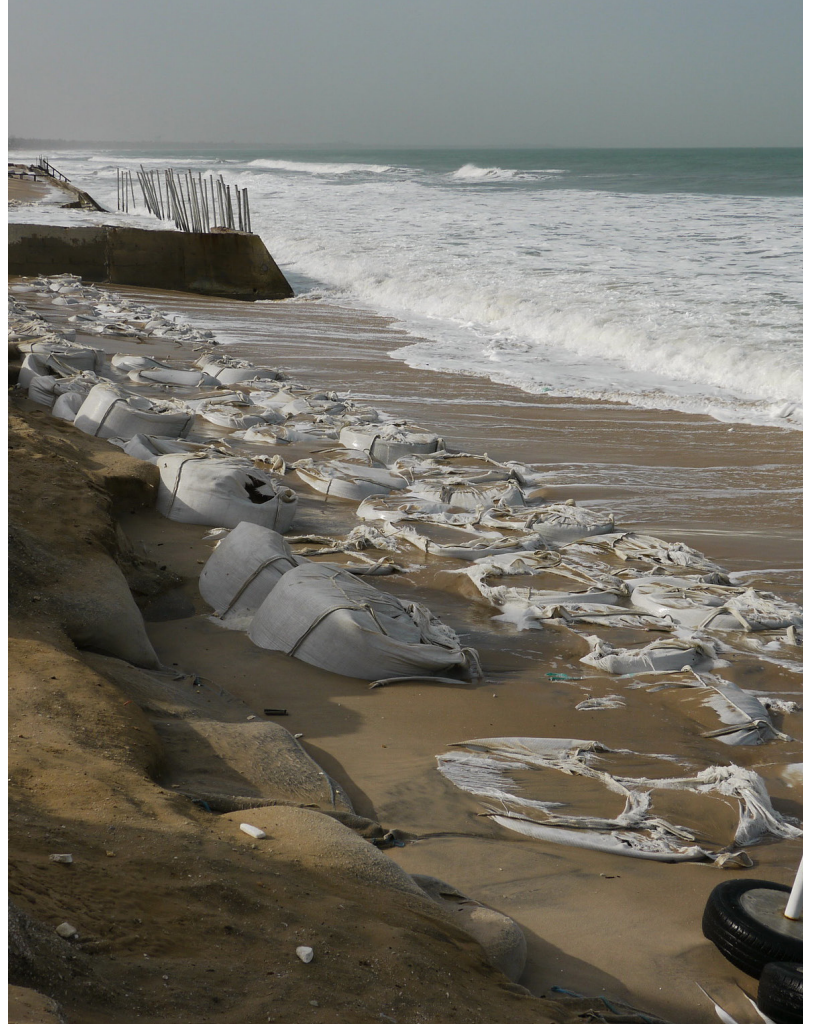
SENEGAL



Senegal is a signatory to numerous conventions developed within the framework of the sustainable management of natural resources (Convention on Biological Diversity). In this context, a marine and coastal resource management policy has been developed at the national level, which has led to the creation of national parks, MPAs and nature reserves. These conservation sites are subject to management rules aimed at ensuring the sustainability of resources. The largest areas of seagrass meadows identified to date are located in protected areas, and therefore benefit from the numerous restrictions of regulations that apply to the site in question.

Moving forward, the Senegalese National Implementation Team will continue to improve seagrass monitoring practices within the Saloum Delta National Park by holding training sessions to accurately identify and characterize all three species – *C. nodosa*, *Z. noltei* and *H. wrightii* – when in the field. More diving activities are also necessary to monitor the subtidal seagrasses throughout various locations. Additionally, monitoring the seasonal variability of seagrass will help the team better understand seagrass life cycle dynamics.

THE GAMBIA



Though successive governments have made substantial commitments a to preserve The Gambia's environment, seagrasses are still largely unprotected. However, as a result of the ResilienSEA project, seagrass protection measures are increasing in The Gambia. In 2021, seagrass protection and conservation was successfully integrated into the management plans of the Tanji River (Karinti) Bird Reserve and draft Wildlife Act of 2020, which is currently in the process of being enacted by the National Assembly. The Gunjur Community Wildlife Reserve has also extended its patrols to seagrass sites in Gunjur, and there are two newly proposed MPAs for the pilot sites of Gunjur and Kartong.

With coastal erosion impacting Gambian shorelines, seagrass restoration efforts are also under way in The Gambia, thanks to a partnership between the country's Department of Parks and Wildlife Management, Alma and the Eduardo Mondlane University in Maputo, Mozambique for a project called ‘*Ba Nyamo Tanko*’. In terms of building local awareness on seagrasses, the Gambian National Implementation Team holds training workshops to strengthen the capacity of park managers, local communities, stakeholder institutions, fishers and fishers' associations, and other civil society organizations.

GUINEA

Seagrass conservation is key to the country's environmental commitments. Similar to its neighbouring states, Guinea has signed the Convention on Biological Diversity, the UNFCCC and the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention). At the national level, the country has developed a set of frameworks that can contribute to the conservation of seagrasses, including the Code on the Protection and Highlight of the Environment, the National Action Plan for the Environment and the Strategy and Action Plan on Biological Diversity. To date, Guinea has four MPAs, with plans under way to introduce the protection of seagrass beds within its national MPA management plan.

Moving forward, Guinean National Implementation Team still faces circumstantial challenges in defining the full extent of seagrass beds within the pilot site, as well challenges related to the location of the site itself. The remoteness of the Tristao Islands presents logistical difficulties for monitors – the islands are 350 km from the capital city of Conakry, which entails a four-to-six-hour boat ride at sea. Thus, the inaccessibility of this monitoring site remains a challenge for future field expeditions.



GUINEA-BISSAU

As part of Guinea-Bissau's commitment to preserving biological diversity and developing resilience actions in the face of climate change (through the Convention on Biological Diversity and the UNFCCC), seagrass conservation is of crucial importance. The Government of Guinea-Bissau already has a set of frameworks that can contribute to this goal, including the Environmental Management Plan (2004), the National Strategy and Action Plan for Biodiversity and the National Action Plan for Adaptation to Climate Change. In 2021, fisheries legislation incorporated the conservation of seagrass meadows and macroalgae, specifically in the regulation of artisanal fisheries.

To date, Guinea-Bissau has eight protected areas, three of which are marine (João Vieira and Poilão Marine National Park, Orango National Park and the Urok Islands community MPA), as well as three coastal parks (Cacheu, Cantanhez and Lagoas de Cufada). It is important to note that the terrestrial parks are home to three animal corridors: Quebo-Cuntabane, Salifo-Xitole and Tchetché, each of which is a conservation unit. Considering the confirmed presence of seagrass meadows in Unhocomo and Unhocomozinho, there are efforts underway to push for these islands to also become MPAs.



SIERRA LEONE

Sierra Leone has a set of laws and tools in place that can contribute towards the protection of seagrasses, which include the Fisheries and Aquaculture Act of 2018, the National Environmental Policy of 1995, the Environmental Protection Agency Act of 2008 and the National Protected Area Authority and Conservation Trust Fund Act of 2012. Though prior to the ResilienSEA project, the presence of seagrass meadows along the coastline of Sierra Leone was unconfirmed, thus unprotected. Although the 2003 World Atlas of Seagrasses indicated that *H. wrightii* was present in Sierra Leone, no specific details or locations of seagrass meadows were established until December of 2019, when a successful ResilienSEA field expedition confirmed a large *H. wrightii* meadow along the shores of the Turtle Islands.

After this important discovery, Sierra Leone specifically moved to mention the importance of coastal ecosystems such as seagrass meadows and mangrove forests for the country's blue carbon stock and blue economy in 2021 within its updated NDC to the UNFCCC. In section 5.1 (mitigation contributions), the NDC notes that Sierra Leone, “will develop a blue carbon initiative for the Sierra Leone River and Bonthe-Sherbro River Estuaries to conserve vast mangrove and seagrass resources while sequestering tree and soil organic carbon”.

Within the Turtle Islands, one crucial component in furthering the protection and management of seagrasses has been increasing local awareness of seagrass meadows. Prior to the start of the ResilienSEA project, communities from the Turtle Islands were not familiar with the presence of seagrass meadows in their waters. In fact, most of the locals had not seen the seagrass meadows before nor heard of their importance to marine life. To increase local awareness of seagrasses, the NIT has conducted three outreach and awareness-raising programmes on Bumpetuk Island, as well as two radio programmes. The NIT plans to expand this outreach to Mania in 2022. Encouragingly, Bumpetuk locals have demonstrated that they are very keen to learn more about the protection and management of seagrass meadows, as well as the economic benefits they provide, with many having stated their willingness to help identify other potential sites in the future and to engage with local policy mechanisms to protect these areas.



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