



SENEGAL

MANGROVE TRACK RECORD



Wetlands
INTERNATIONAL

**WETLANDS INTERNATIONAL
WORKS TO SAFEGUARD
AND RESTORE ONE MILLION
HECTARES OF MANGROVES
ACROSS 10 AFRICAN
COUNTRIES, PRESERVING
BIODIVERSITY WHILE
BENEFITING APPROXIMATELY
TWO MILLION PEOPLE.**

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Laguncularia racemosa mangrove in the Saloum Delta.

BACKGROUND

Wetlands International's goal is to safeguard and restore one million hectares of mangroves across 10 African countries, preserving biodiversity while benefiting approximately 2 million people.

Wetlands International has been operating in Senegal since 2017, focusing its activities on two of the country's key mangrove areas, Grand Saloum (Saloum Delta and Niumi, Gambia) and Casamance. Both are rich in biodiversity and natural resources, and their mangrove forests support tens of thousands of livelihoods – but both face a range of pressures from human activity that threaten the health of these vital ecosystems.

We're working to halt and reverse degradation and unsustainable exploitation, collaborating closely with local and national stakeholders on a wide range of mangrove conservation and restoration activities, building social and ecological resilience in our target areas. As we create partnerships, raise awareness and develop effective strategic approaches to the challenges we face, we're beginning to scale up our impact across Senegal and the wider region.

This report summarizes our activities so far.

In a nutshell, our achievements in Senegal are as follows:

- **114,000 hectares of mangroves with improved conservation status** through new mangrove management plans, reduced mangrove cutting and illegal logging, establishment of protected areas, and improved patrolling
- **1,500 hectares of mangroves restored** into diverse, functioning mangrove systems, using community-based ecological mangrove restoration approaches where possible
- **169,000 people benefiting** from increased protection against extreme weather, flooding and increasing salinity, and provided with improved food security through increased fish and crustacean stocks
- **Nearly 50,000 community members provided with sustainable livelihood alternatives** to harmful practices, reducing the pressure on mangroves and increasing incomes.
- **Increased awareness and education** of youth and villagers on the value of mangroves, resulting in positive attitudes towards mangrove conservation; and establishment of a strong NGO network that can bring our work to scale with limited support
- **Adoption of our best practices by several other mangrove initiatives** in Senegal, collectively creating strong mangrove action across the country
- **Close cooperation with government, supporting collaboration through national and local platforms;** developed mangrove strategy to be used by all stakeholders, based on our approaches

TARGET AREA IN BRIEF

GRAND SALOUM

Geography:
Atlantic coast

Mangrove area:
55,440 ha
Area changes since 1996 (GMW): 848 ha increase

Population:
155,000

Governance:
Community forest, 100% of the mangroves have protected area status including in a UNESCO Biosphere Reserve and two Ramsar sites

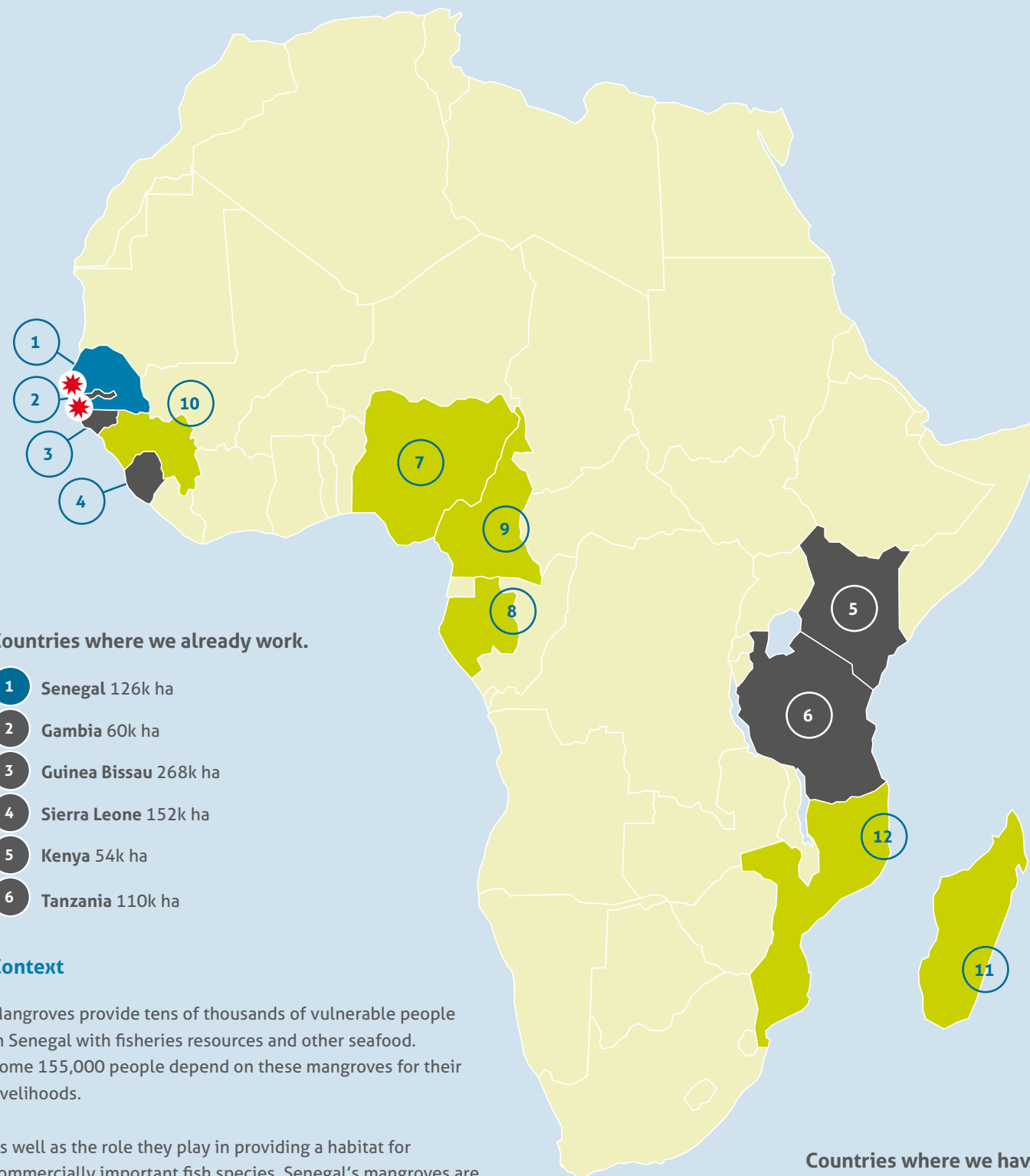
CASAMANCE

Geography:
Riverine continental forest

Mangrove area:
66,000 ha
Area changes since 1996: 698 ha lost

Population:
158,000

Governance:
Community forest, 7 MPAs (MCA currently works in 5, but most mangrove areas are unprotected)



Countries where we already work.

- 1 Senegal 126k ha
- 2 Gambia 60k ha
- 3 Guinea Bissau 268k ha
- 4 Sierra Leone 152k ha
- 5 Kenya 54k ha
- 6 Tanzania 110k ha

Context

Mangroves provide tens of thousands of vulnerable people in Senegal with fisheries resources and other seafood. Some 155,000 people depend on these mangroves for their livelihoods.

As well as the role they play in providing a habitat for commercially important fish species, Senegal's mangroves are home to iconic biodiversity, sheltering hundreds of thousands of birds, dolphins, manatees and sea turtles. These include several IUCN Red-listed species such as the black crowned crane and the Atlantic humpback dolphin.

The mangroves also protect the land, by shielding settlements and agricultural lands from saline intrusion, erosion and sea level rise. When it comes to climate change mitigation, they act as vital carbon sinks: an estimated 78Mt of CO₂ is stored in the area, and 462,000 CO₂e is sequestered annually. This is equivalent to up to 4.2% of Senegal's total CO₂ emissions from fossil fuels.

Countries where we have the ambition to work.

- 7 Nigeria 844k ha
- 8 Gabon 174k ha
- 9 Cameroon 197k ha
- 10 Guinea 221k ha
- 11 Madagascar 277k ha
- 12 Mozambique 302k ha

THREATS TO SENEGAL'S MANGROVES

- **Overexploitation of timber and fisheries resources** – Excessive logging for fuelwood and construction, along with unsustainable fishing practices, deplete critical resources and disrupt the balance of mangrove ecosystems, leading to habitat degradation and loss.
- **Poorly planned infrastructure development** – Construction of hotels, roads, and other infrastructure in mangrove areas directly leads to deforestation as mangroves are cleared to make space. Additionally, these developments disturb natural hydrological flows, introduce pollution, and often involve water abstraction, all of which significantly impact the health and survival of mangrove ecosystems.
- **Climate change causing declining freshwater flows, saltwater intrusion and coastal erosion** – Reduced river inflows alter salinity levels, threatening the health of mangroves that rely on a balance between fresh and saltwater.
- **Land clearance for agriculture** – Conversion of mangroves into rice fields and other agricultural activities results in significant deforestation
- **Offshore oil and gas exploration** – Activities related to oil and gas exploration pose risks of pollution, including oil spills that can devastate mangrove habitats and the biodiversity they support.



Unsustainable fishing is one of the threats to Senegal's mangroves.




OUR IMPACTS IN GRAND SALOUM AND CASAMANCE, SENEGAL

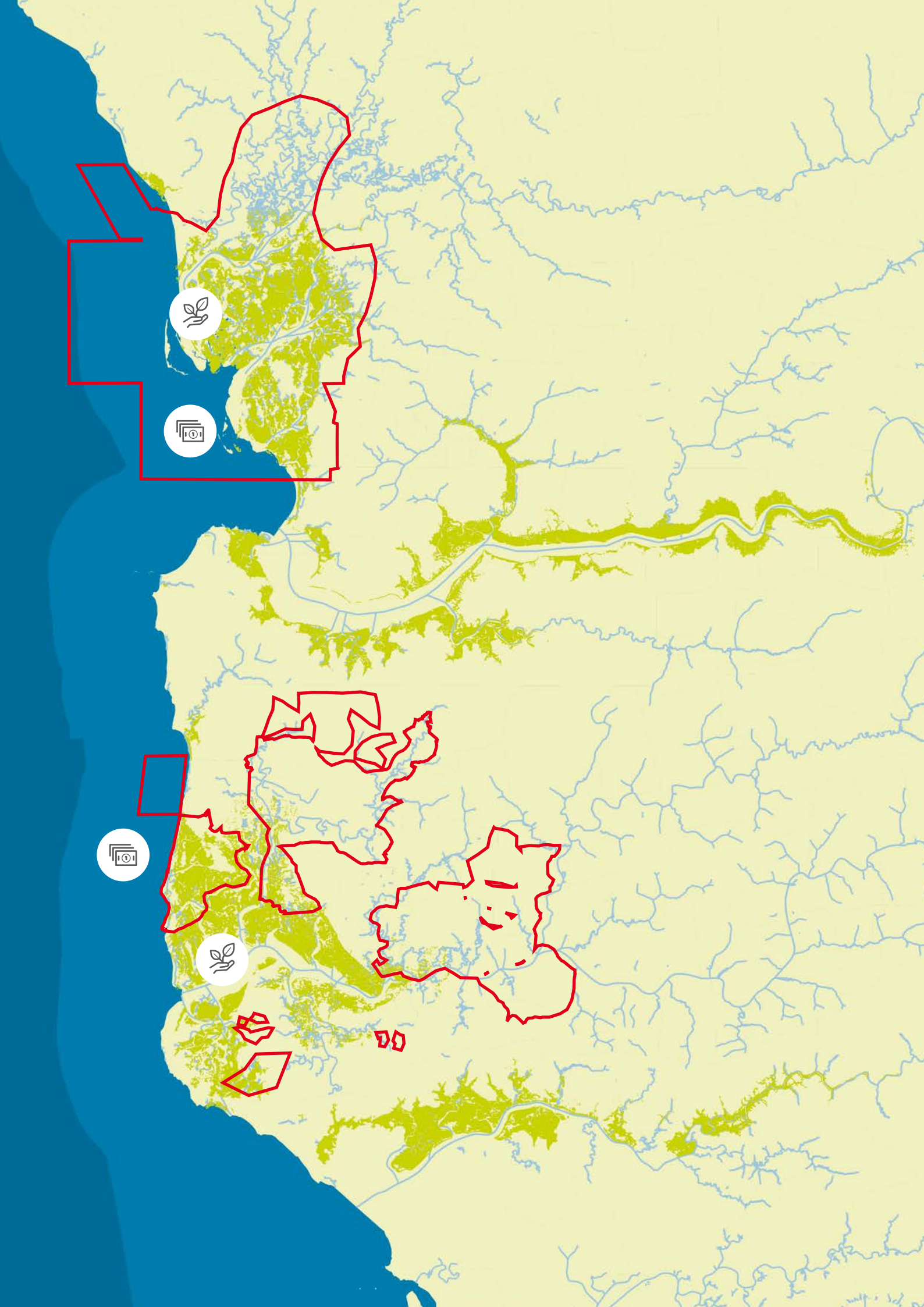
Wetlands International has a clear vision: Mangroves and their biodiversity are healthy, improving the livelihoods of millions of people and protecting them against the dangers of climate change.

Our interventions will achieve the following impacts:

- **Educated**, resilient communities with alternative livelihoods that depend less on unsustainable use of mangrove resources
- **Improved food security** through increased fish and crustacean stocks
- **Increased biodiversity** with returning nesting and migratory birds
- Maximized potential for **carbon sequestration**
- **Increased protection against extreme weather**, flooding and increasing salinity

MILESTONES

	GRAND SALOUM		CASAMANCE	
	Target	Archieved	Target	Archieved
 Mangroves with improved conservation status (ha)	96,000	69,000	66,000	45,000
 Mangroves restored (ha)	2,424	1,538	1,800	997
 People benefiting (indirect & direct)	155,000	155,000	129,000	87,000
Of wich: People livelihoods changed (direct)	34,349	75,978	20,00	33,795





Green monkey.

OUR STRATEGY AND ACHIEVEMENTS

There are four main components to Wetlands International's approach:

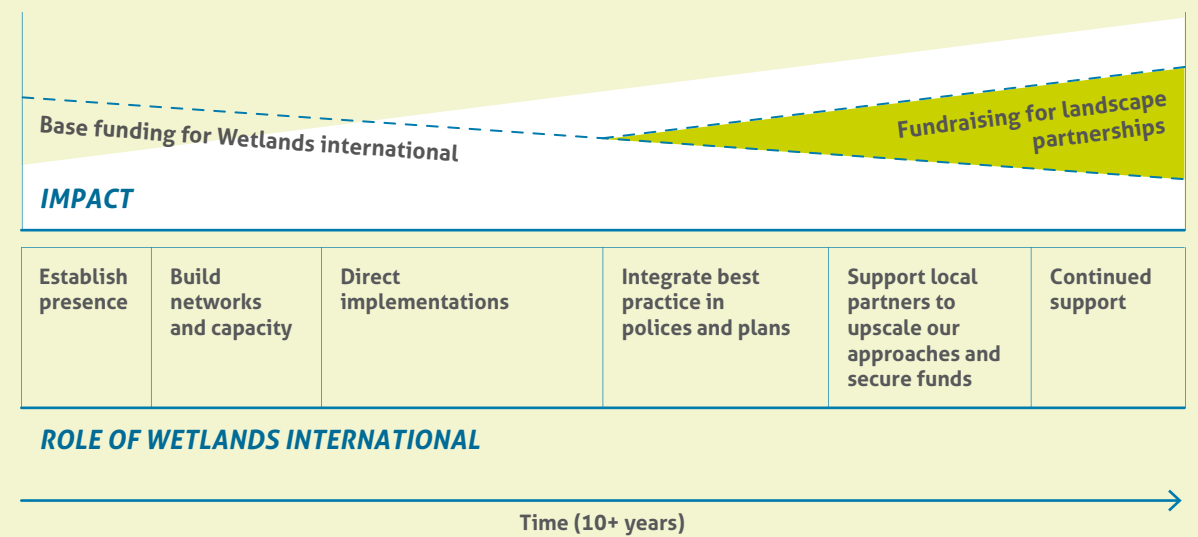
1. We develop and upscale mangrove **conservation and restoration** efforts.
2. We develop and upscale sustainable measures that improve **community livelihoods**, working closely with local people.
3. We build an **enabling environment** within which **communities and other stakeholders can effectively collaborate**. We also build and disseminate a knowledge base.
4. We work at a **national and landscape scale** to ensure **systemic change** for sustainable mangrove management.

This approach is the fruit of decades of experience in implementing projects on the ground all over the world (over 20 years in Senegal) and informs everything we do. Conservation and restoration are linked strongly with livelihoods, through close collaboration with community groups, and both areas are strengthened by activities conducted as part of the enabling environment component. Activities in these three components ultimately contribute to processes at national and landscape level, informing policy dialogue, sharing and promoting best practices, and underpinning coastal zone planning.

Our activities under each component in Senegal are described in more detail below.

Upscaling our impact

The success of Wetlands International's approach depends on effective upscaling. While our direct activities yield results locally, we focus on enabling others to replicate these efforts on a larger scale. Through awareness-raising, training, technical support, and fundraising, we empower local communities and NGOs to adopt and share our approaches, amplifying our impact. Over time, our role shifts from direct implementation to supporting others in taking the lead, ensuring sustainable and locally-owned solutions at scale.





1. CONSERVATION AND RESTORATION

Throughout the Grand Saloum and Casamance regions, communities are conserving and restoring mangroves, while benefiting from training and livelihood support.



'RESTORATION OF MANGROVES WILL HELP US SUPPORT SPECIES THAT LIVE IN THE MANGROVES, LIKE FISH THAT WE DEPEND ON FOR OUR LIVELIHOODS.'

Banfa Diédhiou
Inhabitant of kagnobon, Casamance

Digging of canals for hydrological restoration in Abéné Marine Protected Area.

Community-Based Ecological Mangrove Restoration (CBEMR)

The key to upscaling the impact of our interventions is to build the capacity of local communities to conserve and restore their own mangrove areas decimated through drought-related degradation in the 1970s and 80s, along with more recent damage from illegal logging and climate change. That's why we train park managers and community groups in community-based ecological mangrove restoration (CBEMR) techniques, who then spread this knowledge by training thousands of other people.

Planting is sometimes required to restore degraded areas if there's not enough seed stock for natural recruitment. But the primary task is always to improve the ecological and socioeconomic conditions of the sites in question – and this means assessing, engaging and understanding the situation before any planting takes place. We've been training people in all stages of CBEMR, and the approach is already being widely replicated by other organizations in Saloum. CBEMR has significantly higher success rates than conventional planting and is cost-effective and efficient in the long-term. It also enhances biodiversity, and forest and coastline resilience.

We are therefore globally advocating for its adoption as best practice and for policies in Senegal and other countries to support scaling up CBEMR.

In Saloum, we helped the Marine Protected Area management committee to develop restoration plans for 192 ha of mangroves following CBEMR principles, which they're now implementing.

We use the CBEMR approach in Senegal, focusing on natural and assisted regeneration and enhancing local site conditions in combination with planting. We do this by improving area hydrology, sediment and nutrient conditions and by creating sustainable livelihoods in communities, who in turn help in site identification, restoration and monitoring efforts.

Our work in every location in Senegal begins with a **mangrove restoration plan**, which we develop jointly with communities, local authorities and Marine Protected Areas authorities (MPA), and which covers every aspect of our operations. We plan the restoration, conservation and livelihood activities we'll carry out together; as well as making arrangements for patrolling and monitoring, along with education and awareness-raising. Once a template for the plan has been created, we work with communities to build their capacity to carry out the activities independently, while providing continued support as required. In some cases providing small grants to local NGOs and introducing innovative new techniques such as drone mapping to track restoration progress. By focusing on **training and financing local practitioners**, our impact is upscaled. This approach has been successfully adopted across Grand Saloum and Casamance, and more funding in the coming years will enable the upscaling process to be further accelerated nationally and beyond.

Mangrove cover is increasing in both areas following state and local community actions, including the development of **protected area management plans**, a decrease in mangrove cutting following the creation of **alternative livelihoods**, and the launch of **joint patrols** with communities and park rangers to address illegal activities. Illegal logging, notably, has diminished. Mangroves are already notably healthier in Grand Saloum; and a transboundary management plan has been launched for Senegal and Gambia.

Mangrove biodiversity is also being better managed, e.g. with no-harvest periods to protect oyster and shellfish stocks, and the restocking of a number of cockle banks including a 7-tonne restock in Grand Saloum's Joal MPA. Conservation of the iconic manatee – a threatened species – is being supported; and several artificial reefs have been immersed in mangrove areas to provide additional habitat.

There has been wide community participation in Wetlands International's **restoration activities**. In Grand Saloum, we've supported 200 women to set up a shop selling bottled gas and more efficient cooking stoves to reduce mangrove wood used for domestic consumption.



CBEMR Training.



Oyster farming in the mangroves.

2. COMMUNITY LIVELIHOODS

We're supporting communities to create alternative sustainable livelihoods that can be upscaled on a national level, relieving the pressure on mangrove resources locally and then across far wider areas.



'I JOINED THE ASSOCIATION BECAUSE I WAS LOOKING FOR A BETTER FUTURE'

Maimouna Camara,
Member of a local group,
set up to promote sustainable oyster
farming in mangrove areas.

Oyster farming

'The money earned allows us to take care of our children by buying school supplies and clothes; and for our personal needs we don't need to ask our husbands for anything. We also use the money to supplement family expenses'

Local women are eager to learn how to work with so-called oyster garlands. *'We didn't know we could grow oysters,'* says Maria Ndong. *'Wetlands International gave us a grant and trained us in this technique, and this enabled us to work in a sustainable way.'* Crucially, once an oyster farming project has been set up, it generates its own momentum.

'When the funding came to its end, we didn't sit on our hands,' adds Maria. *'We continued. With the money from the sale of oysters, we buy fuel for our pirogues... We simply live off these activities. And oysters can be used to prepare a meal for the whole family.'*

Overexploitation of mangrove ecosystems – from overextraction of firewood to land conversion for agriculture – generally occurs because local communities lack sustainable alternative means of support. This is a key focus for MCA operations. Following an initial assessment in each community, we work to identify, supply materials and build capacity for alternative livelihoods which we then support as the project progresses. We've created **alternative livelihoods** for 55,188 people in the Saloum and 23,895 in Casamance since the start of the project, providing training, equipment and raw materials for activities and their associated value chains including honey production, oyster culture, cockle harvesting, processing of agriculture and forest products (rice, mangos and palm oil), and market vegetable gardening.

Village savings and loan clubs, which we supply with seed capital, are a further source of finance for local entrepreneurs – who then fund further business ideas with the interest on the money they've borrowed. As new livelihoods are created new value chains and new markets emerge around them, organically upscaling the reach and impact of our initial interventions.

Saving box for the Communal fund.



Meeting of a village savings & Loans club.

What's more, many alternative livelihoods depend directly on healthy mangroves, increasing community motivation to become actively involved in protection and restoration activities.

Looking forward, we plan to establish further savings and loan facilities, and establish **collaborations** with 'social entrepreneurs' working on the marketing of mangrove commodities and with NGOs that have a dedicated track record on business development and value chain enhancement. We'll focus on meeting sustainable energy needs (as an alternative to fuelwood consumption) and on increasing income from oysters and honey production.

In partnership with Senegal's top business school (Institut Supérieur de Management) we're maximising the socioeconomic impact of our community work by targeting **value chain margins** across a range of livelihood activities, from cashew processing to community-based ecotourism, developing business plans and training people to increase the value of their local products through improved processing, transformation, packaging etc. These new and improved business models can then be replicated on a national level, vastly **upscale the impact** of MCA's initial development assistance.

We've also worked with a number of oyster farming and NTFP groups to obtain official 'Financial Regulation Authority authorisation' from the government, enabling them to sell their products at higher prices and connect to new markets.

'MANY OF THESE SAVING AND LOAN GROUPS HAVE BEEN STARTED UP ON THE INITIATIVE OF THE VILLAGE MEMBERS THEMSELVES.'

Savings and loan groups

A vital element of our community work in Senegal is our involvement in savings and loans groups, which we've helped set up in more than 120 villages in Grand Saloum and 50 villages in Casamance, providing financial, material and technical support. These groups, which are mostly run by women while the men are out at sea or working in the forest, save money to invest in small-scale livelihood and entrepreneurial projects in their communities. The savings they collect makes a huge difference to individuals on the ground, who then focus on their new businesses and have less reason to use mangrove resources unsustainably. Indeed, one of our studies showed these groups can reduce dependence on the mangrove forest by 30%. As the loans are paid back the schemes become self-sustaining, and begin to generate a surplus – and in many cases a percentage has been voluntarily invested in mangrove restoration.



Goliath Heron.

3. ENABLING ENVIRONMENT

We're bringing mangrove stakeholders together into constructive networks and working to educate young people.

'WE'VE REACHED MORE THAN 1,600 PUPILS'



Mangrove School Club.

Environmental education

Teaching young people about the importance of mangroves is an extremely effective form of awareness-raising, since they share their new knowledge with their families and friends. We've been working with the Education Department to set up Mangrove School Clubs in our intervention areas. So far we've established 50 in Grand Saloum and 20 in Casamance, along with a further 20 in Gambia – and we're also joining CSOs in advocating to the ministry to mainstream mangrove education into the national curriculum at both primary and secondary level. We've reached more than 1,600 pupils – and by extension their families – so far.

Our Mangrove School Clubs run a range of activities to engage and educate young people, from excursions into the mangrove forests to related creative projects such as drama and drawing. The strategy is working well so far, complemented by regular community radio broadcasts raising awareness of the link between healthy mangroves and sustainable livelihoods. Many local people now come and assist our restoration activities in areas where the clubs operate.



Use of drones to complement Global Mangrove Watch during a Global Mangrove Watch training.

Upscaling the work of Wetlands International across Senegal and beyond requires a **strong network of mangrove stakeholders** and a clear and effective governance regime. Good progress has been made in both areas: thanks partly to our convening power NGOs, government agencies and community groups are jointly committed to scaling up conservation, restoration and livelihood approaches across the country. We have organised a series of trainings to equip policymakers, MPA staff, and communities to get familiar with the Global Mangrove Watch platform. They can use its

monitoring data for restoration planning, conservation strategies, and addressing threats to mangroves.

Central to our work in this area has been our role on the technical and management committee of **Saloum's Mangrove Platform**, which we played a leading part in initiating. Comprised of CSOs, NGOs, civil servants and community groups, the Mangrove Platform organises a strategic approach to the mangrove work that's being carried out across the delta, enabling synergies and avoiding duplication, as well as driving advocacy and awareness-

raising activities. It also enables us to promote the replication of our livelihoods and conservation measures by NGO partners, embedding effective measures in government-led management plans and creating a strong basis for upscaling activities across the delta. We'll be launching a Mangrove Platform in Casamance as soon as we have the necessary new funding in place. In the next phase of the MCA programme, one area of focus will be to help the National Mangrove Platform – a group of over 20 mangrove-oriented NGOs – to scale up its work and replicate best practices on a national scale.

'EXPLORE MANGROVES, SPOT WILDLIFE AND COUNT WATERBIRDS'

Youssoupha Sané,
Mbam 2 Environment Club
in Grand Saloum

School clubs

'It's vital to prepare the children for a climate that might threaten their way of life and equip them with the knowledge and actions to protect their environment.' These are the words of Youssoupha Sané, who until his sad passing in 2021 ran the Mbam 2 Environment Club in Grand Saloum, which brings together 30 students to explore mangroves, spot wildlife and count waterbirds.

Youssoupha experienced the effects of mangrove degradation as he was growing up, with salt water intruding into farmlands and oil spills polluting the ecosystem – so as a young teacher he made it his mission to safeguard his local wetlands, raising awareness and fostering sustainable development. His Mbam 2 Environment Club is one of many that Wetlands International has been supporting, where children learn about the complex co-dependencies between the ecosystem and their communities.

Youssoupha used to say that the members of his club were *'awakening the environmentalist fibre'* in their parents and the wider community. Indeed, educating the young through clubs like this is an increasingly important focus for Wetlands International.



Field excursion Mangrove School Club.



4. NATIONAL AND LANDSCAPE SCALE

We're strategically targeting key sectors to upscale our impact across Senegal and beyond.

'THE NATIONAL MANGROVE MANAGEMENT STRATEGY IN SENEGAL IS AN IMPORTANT TOOL'



The National Mangrove Management Strategy in Senegal is an important tool as it will enable us to have a more accurate knowledge of the state of this ecosystem in the country, providing a solid basis for future decisions at local, national or international level.

This strategy proposes guidelines, areas for action and approaches that, if followed and implemented, will ensure better conservation and protection of the country's mangroves. It has thus become one of the main documents around which the sectoral policy letter of the Senegalese Ministry of the Environment is structured.

Colonel Mamadou Sidibé
Director of Marine Community Protected Areas
President of the Network of Marine Protected Areas in West Africa

While our on-the-ground conservation and restoration work is currently focused on two specific regions of Senegal, we're also laying the ground to scale up successful approaches nationally and at a landscape level. This involves advocacy and strategic discussions with key national sectors.

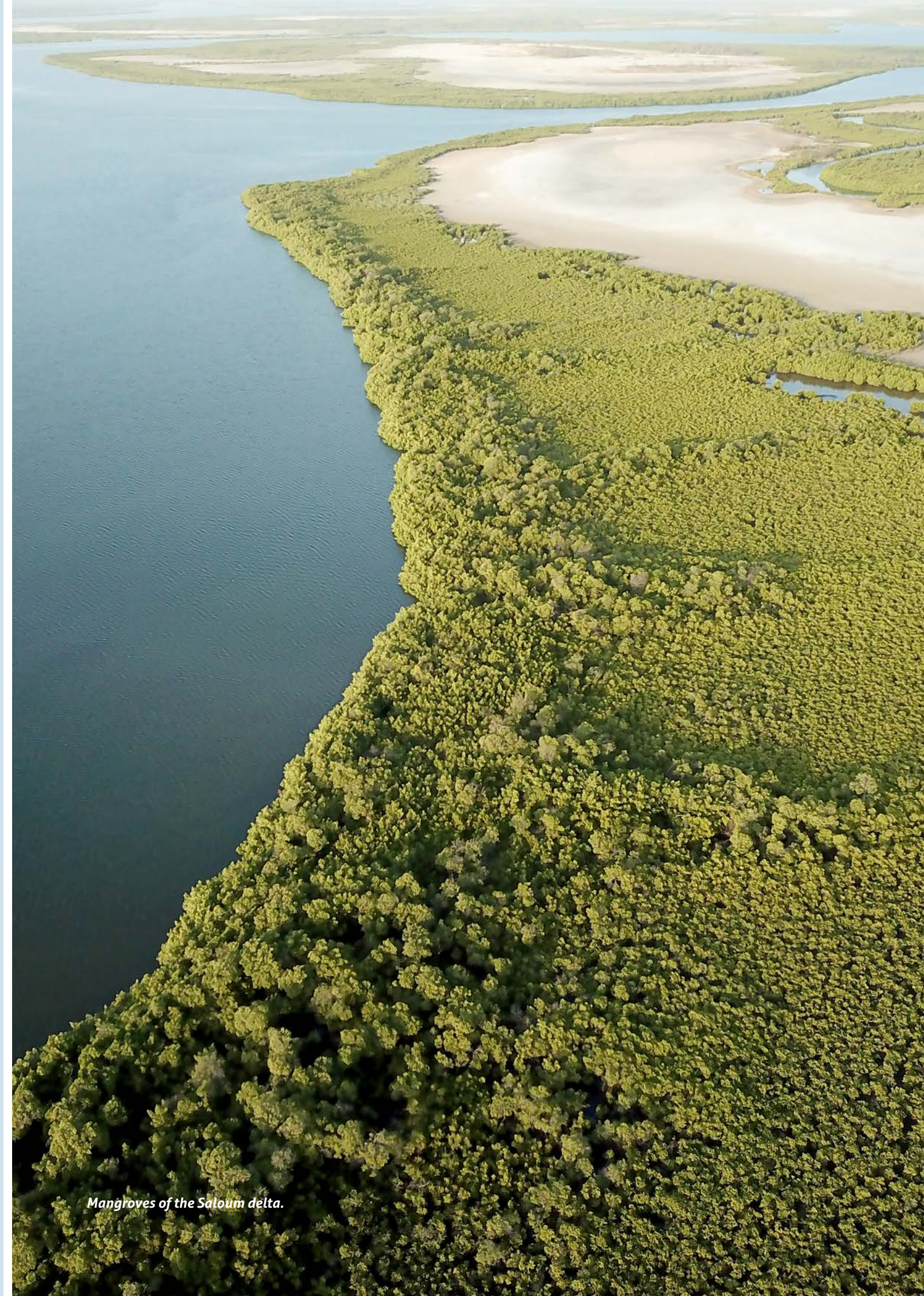
In partnership with the Marine Protected Area Community Directorate (DAMCP) we organized and funded a consultation exercise together with the Pabio mangrove project on setting up a national mangrove forest restoration and conservation strategy. The strategy has since been developed and adopted, with targets set on knowledge, conservation, governance and finance of mangrove ecosystems. The next step is to create an action plan and a national platform for execution, and then to disseminate the strategy to all stakeholders. This national mangrove strategy is essential for upscaling all our best practices in conservation, restoration and sustainable livelihoods development widely throughout Senegal.

The involvement of the private sector is also critical. We're in discussions with the Department of Imports and Exports in the Ministry of Commerce on how to facilitate partnerships between community associations and local entrepreneurs to open up regional and international markets for sustainable livelihood products from mangrove areas, such as oysters, NTFPs etc. We're working with agricultural banks to explore how they can support community projects and build local capacity in our intervention areas.

Finally, in partnership with the University of Dakar, we're working at a national and regional (west Africa) level to train specialist mangrove practitioners – including some 40 from Senegal – both to work on the ground and to share their expertise with others. This has been a successful exercise so far: upskilling is a key element in upscaling our impact more broadly.



The launch of the national mangrove strategy.



Mangroves of the Saloum delta.



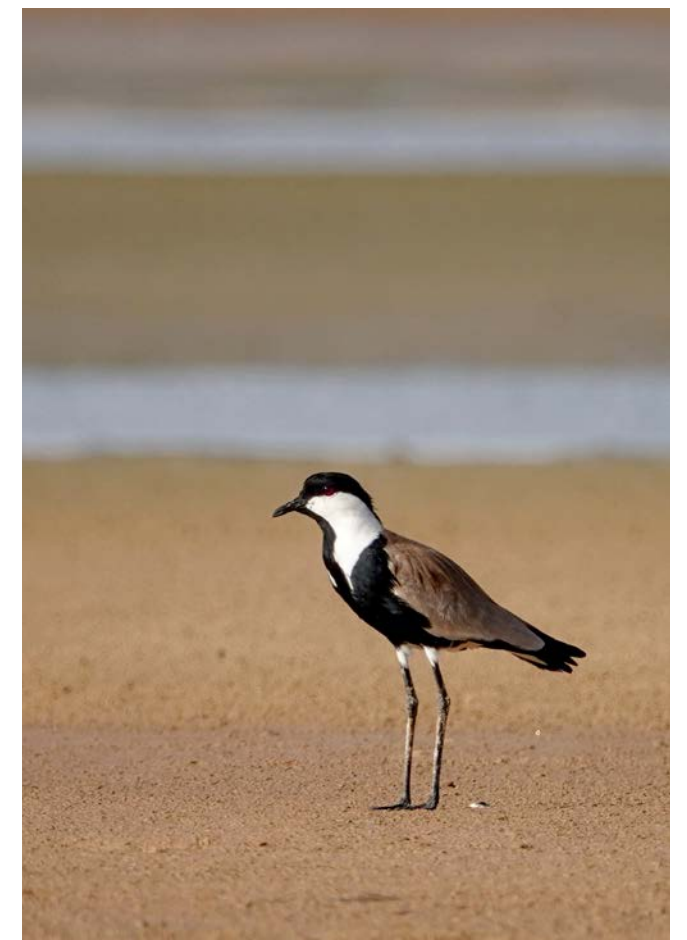
Wetlands International is supporting women with vegetable gardening to sell at the market.

NEXT STEPS

With the national mangrove strategy adopted, there is momentum and opportunity to enhance collaboration at the national level to bring mangrove conservation and restoration action and investments at scale in Senegal, building on the best practices piloted on the ground in Wetlands International's programme.

Progress has been encouraging so far, but there is a great deal of work which remains to be done. We need your support for priorities such as:

- Further developing the national mangrove platform by bringing together stakeholders and building capacities, and collaboratively implementing the national mangrove strategy.
- Providing technical support, value chain support, and access to finance so people can earn a secure income in areas such as oyster farming, beekeeping and ecotourism.
- Supporting authorities in Casamance to update and implement management plans to address specific threats, such as overfishing, coastal erosion and conversion of mangroves for rice farming.
- Developing conservation plans for specific species and species groups, such as the Atlantic humpback dolphin, which is highly dependent on the mangroves of Senegal.



Spur-winged lapwing.



Channel for hydrological restoration to enable natural mangrove regrowth.

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Salt mining.