



FINAL EVALUATION  
**MINIMIZING SEABIRD AND SEA TURTLE BYCATCH IN  
WEST AFRICAN INDUSTRIAL FISHERIES  
2018-2022**

28.09.2022

# 1. INTRODUCTION

Bycatch, the incidental capture of non-target species during commercial fishing, is a global problem and among the biggest threats to marine fauna. In West Africa, bycatch is under-researched but believed to be a significant problem given the well-developed industrial fishing sector. And bycatch of seabirds and sea turtles in particular has contributed to serious declines in their populations with many species considered at risk of extinction. Many affected species migrate across continents and oceans, and their ranges cover several West-African countries Exclusive Economic Zones exploited by foreign fleets, including from Europe and Asia. This makes bycatch a politically as well as technically complex challenge that requires international cooperation to overcome. In addition, bycatch data are sparse and our understanding of impacts on affected populations is limited. In data-deficient regions, numerical models provide invaluable information to support fisheries management and marine conservation. This programme sought to measure, understand and minimize bycatch in industrial fisheries in Cabo Verde, Guinea, Guinea Bissau, Mauritania, Senegal, Sierra Leone, and The Gambia.

## OBJECTIVES

- By 2022, the extent and impact of seabird and sea turtle bycatch in industrial fisheries in the West African region is well understood and solutions, roles, and political responsibilities are identified.
- By the end of the project, current bycatch data (including those from observer programmes) are available and properly managed in a regional bycatch database.
- National observer programmes are in place and operational for local and distant water fisheries.
- Compliance, monitoring and surveillance systems are implemented in target countries.
- By 2022, the industrial fisheries sector is aware of bycatch issues in the West African region which contributes to strong government commitments to bycatch reduction.
- By end of the project, partners have enhanced project coordination and governance to ensure a lasting partnership.

## BUDGET ENGAGED

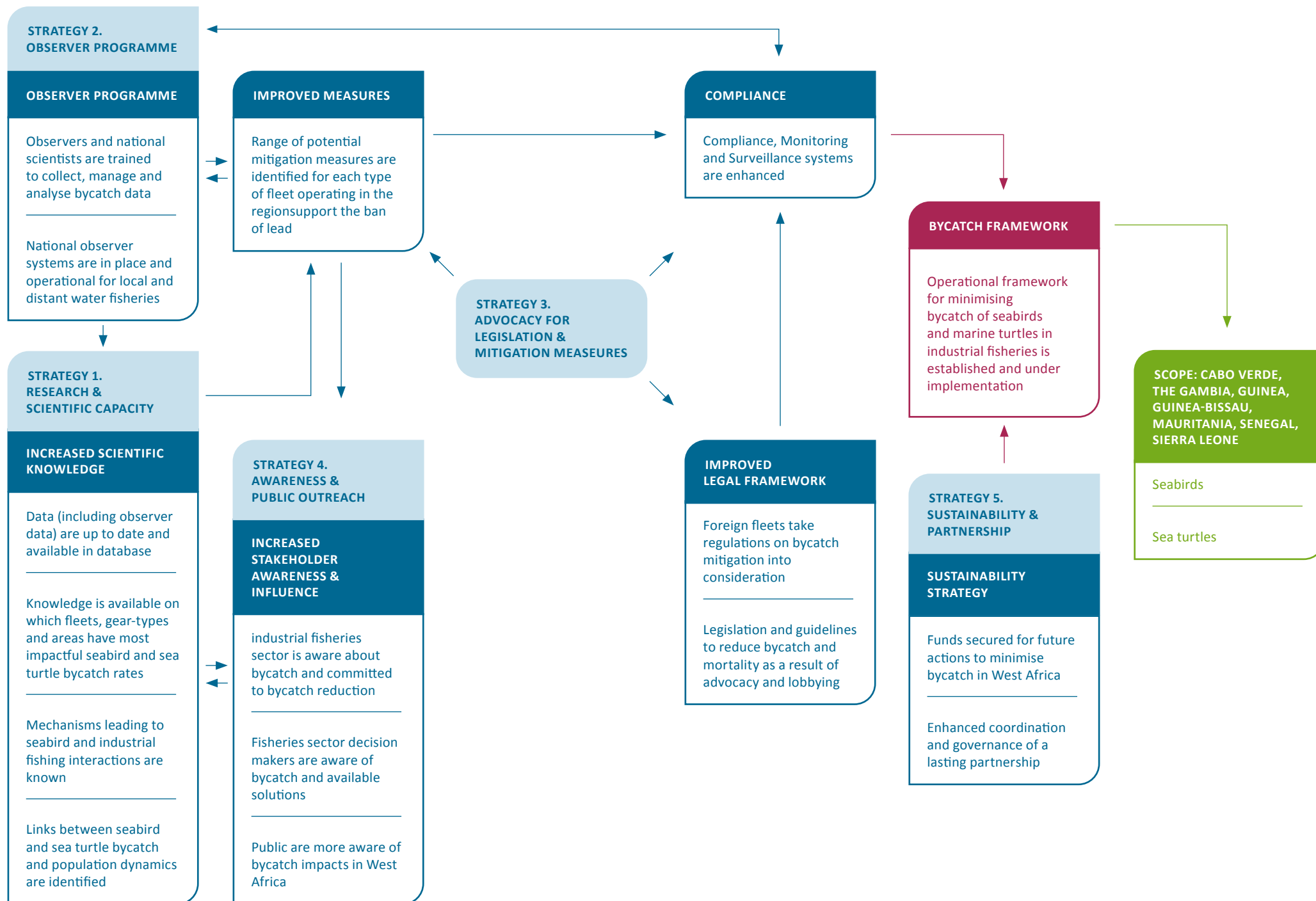
**€3,579,482**

**Phase 1: €1,945,157**

**Phase 2: €1,634,325**

## THE PARTNERSHIP





## 2. PROGRESS AND ACTIVITIES

To understand and minimize bycatch impacts, we needed to combine several approaches. First, we needed to gather data on bycatch rates of both sea-birds and turtles in industrial fisheries to understand its dynamics and demographic impacts. Then, we needed to analyse when and where animals were being caught, and build the first-ever regional mapping of bycatch risk. We also built a broad partnership across Western African countries and beyond to share experience, expertise and data. And we undertook national level capacity building to monitor fishing activities and provide recommendations for mitigating bycatch. Finally, we needed to engage in advocacy and communication with policymakers to improve and shape policies for sustainable fisheries management. Our key innovations included training national onboard observers on collecting standardized data on bycatch, analysing data sets on animal and fishing vessel tracking, deploying novel radar detector devices on seabirds to sense fishing vessels remotely, and developing demographic models on affected species to understand extinction risks.

### STRATEGY 1: RESEARCH AND SCIENTIFIC CAPACITY

To understand the dynamics of seabird and sea turtle interactions with fishing vessels at both large and fine scales, we focused on scientific data analysis, estimating rates of bycatch, the impact on seabird and turtle populations, and identifying political responsibilities. Our activities included:

- assessing the distributions of seabirds and sea turtles;
- estimating turtle bycatch rates (for all species) with projected population impacts (on loggerhead turtles, *Caretta caretta*);
- inferring bycatch risk maps for fishing vessels for the most affected species;
- measuring fine-scale movements and understanding interactions between individual animals and vessels.

### STRATEGY 2: OBSERVER PROGRAMS

To strengthen scientific skills of fisheries observers and improve bycatch data collection, we conducted several activities, including:

- building the capacity of observers and local scientists;
- creating an observer programme in Cabo Verde;
- developing various manuals including seabird, sea turtle, sharks and ray identification guides; and an observer manual
- implementing bycatch data collection in existing observer programmes.

### STRATEGY 3: INTERNATIONAL POLICY ADVOCACY

To pave the way for improved fisheries governance that ensures sustainable use of marine species, we conducted several activities, including:

- advocating bycatch mitigation measures in industrial fisheries;
- developing a regional bycatch mitigation roadmap;
- updating annexes to the Convention on Minimal Access Conditions;
- undertaking various meetings and developing policy briefs to generate positive outcomes for other marine animals such as sharks and rays.

#### STRATEGY 4: AWARENESS AND PUBLIC OUTREACH

To change attitudes in the fishing sector and promote sustainable practices, our activities included:

- raising awareness of bycatch issues with fishers and the public;
- encouraging fisheries stakeholders to commit in implementing mitigation measures.

#### STRATEGY 5: SUSTAINABILITY AND PARTNERSHIP

To identify new potential donors and secure future funding, our activities included:

- developing a bycatch action plan;
- developing and submitting funding proposals;
- establishing a framework to coordinate the partnership.

#### KEY LESSONS

1. Updating and strengthening regional fisheries policies requires sustained advocacy with policymakers and other stakeholders, and will take several years to complete.
2. Observer programmes for monitoring seabird and sea turtle bycatch are operational but effective data collection and development of mitigation recommendations requires further capacity building and long-term support.
3. Deploying observers on board longline vessels to improve data collection of seabird bycatch in the region requires additional effort.
4. There is a need to consult with governments prior to finalizing project proposals to ensure deliverables are realistic.
5. 'Seeing is believing' – knowledge exchange with governments and regional partners outside West Africa has proved to be positive and fruitful and should be made part of any future effort to replicate bycatch mitigation.
6. Effectively advocating change requires face-to-face communication with governments and stakeholders but the Covid pandemic limited opportunities and caused delays.
7. Combining animal tracking data with environmental variables was crucial for developing species distribution models and identifying bycatch risk hotspots.



### 3. ACHIEVEMENTS AND IMPACTS

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#### **Potential mitigation measures have been identified for each fleet type operating in the West Africa region**

We identified West African industrial fisheries with a potentially negative impact on seabirds and sea turtles through literature review and site visits. Based on the type of vessels operating in the region, we undertook a global review of effective bycatch mitigation measures. We developed a series of practical guidelines and awareness-raising materials. And we developed a bycatch mitigation roadmap and recommendations for decision-makers.

#### **Fisheries sector decision-makers are aware of bycatch and available solutions**

Prior to the start of the project, the concept of 'bycatch' was not well understood across partner countries in the region, and normally used in reference only to the incidental capture of non-target fish species rather than also including that of animals such as seabirds and sea turtles. In addition, standard solutions designed to minimize interactions of seabirds and sea turtles with industrial fishing vessels were unknown in the region. For example, in Senegal, sea turtles and seabirds were protected in environmental and fisheries legislation but bycatch monitoring did not include these species.

After a number of workshops, stakeholders are now aware of the challenge of seabird and sea turtle bycatch along with globally accepted solutions for mitigating their interaction with industrial fisheries. Bycatch is now accepted as a key threat to marine fauna and countries have started updating legislation accordingly. Provisions on sea turtle bycatch have been strengthened in various pieces of fisheries legislation which now includes recommended measures to reduce interactions with industrial fisheries (longliners, trawlers, and purse seiners), and facilitate the safe release of all accidentally captured turtles.

#### **Factors leading to seabird and industrial fishing interactions are known**

By combining location data of over 15 seabird species and two sea turtle species with location data of fishing vessels, we have been able to identify the spatio-temporal overlap and the risk of bycatch for each species in relation to different types of industrial fisheries. These analyses also helped us understand the political implications of seabird-fishery interactions, not only in terms of the Exclusive Economic Zone (EEZ) of each country where interactions occur but also in terms of the flag of involved vessels. In the project timeframe, we were unable to study factors that exacerbate seabird-fishery interactions due to the complexity of the analysis. Data sets are in place but analysis is ongoing. Overall, however, our results will inform practical guidance for conservation managers and decision-makers on how to reduce bycatch in industrial fisheries.

## DEGREE OF ACHIEVEMENT OF THE DESIRED OUTCOME AND RESULTS

We identified seabird and sea turtle bycatch risks and the main hotspots for the most impacted species. Bycatch rate estimates for all turtle species are now available, and this has enabled us to understand the extent and impacts of industrial fisheries. We found that unless bycatch is reduced, loggerhead turtles are at risk of local extinction within a hundred years. Overall, 52% of regional observers have been trained on bycatch data collection and a new observer programme was set up in Cabo Verde. Despite our efforts advocating for legislative improvement, policy changes have been limited and bycatch mitigation measures are yet to be implemented in regional fisheries. Nevertheless, most stakeholders are now aware of the problem of bycatch which has led to policymakers making a strong commitment to improve legislation.

### CASE STUDY 1: SCALING UP POLITICAL WILL

One of the biggest challenges we faced was that decision-makers' limited knowledge of bycatch meant they considered seabird and sea turtle bycatch mitigation to be very complicated. To scale up political will in the region, we organised a knowledge exchange visit to Namibia in May 2022 in partnership with the Albatross Task Force. One of the first countries to effectively implement bycatch mitigation measures, Namibia has successfully reduced seabird bycatch in longline fisheries by up to 98%. Our aim was to understand how Namibia has reduced seabird bycatch so that similar measures might be developed in West Africa. The delegation included decision-makers and stakeholders of West African industrial fisheries, including directors, and senior managers from the Ministries of Fisheries of Senegal, Mauritania, and The Gambia. As a result, Senegal has issued a by-law on the management of sea turtle bycatch and the remaining countries are in the process of updating their legislation.



Walvis Bay, Namibia: West African industrial fisheries decision-makers and stakeholders visiting Namibian fishing industry to learn about seabird bycatch mitigation measures implementation

## CASE STUDY 2: ESTABLISHING THE SCIENTIFIC OBSERVER PROGRAMME IN CABO VERDE

All countries in the region have recognized the importance of data collection on bycatch. Although Cabo Verde waters are subject to intense industrial-scale exploitation by foreign fleets, it was the only country lacking an observer programme. In June 2022, the Sea School of Mindelo trained a group of 14 people, mostly young university students, who will be part of a newly launched fisheries observers programme. This crucial achievement came about through intense effort in collaboration with our national partners, and with considerable support from the Cabo Verde government. With the establishment of the observer programme, the government and its Ministry of the Sea have taken an important step towards the sustainable management of marine resources in a large and critically important oceanic area.



Mindelo, Cabo Verde: New Cabo Verdean fisheries observers during their training



## 4. WHAT WILL HAPPEN NEXT

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Despite substantial progress in recent years, bycatch remains a significant threat to marine fauna in the West African region and conservation is still hampered by important data gaps on bycatch. Our programme has built a broad and strong partnership across the region to tackle the problem from different angles, and a central data server now enables partners to access existing and new data, as well as facilitate further exchange and collaboration.

To meet international standards on sustainable fisheries and bycatch mitigation, the region requires additional capacity building, policy development, area-based management, and conservation action. We will keep working on these strategies by strengthening current partnerships to implement the most suitable mitigation measures that we have identified. The partnership will also expand to address marine fauna bycatch across the whole of the Eastern Atlantic. It is also imperative that we include the artisanal fisheries sector.

Without ongoing action, we risk a continuing loss of species at alarming rates. Growing the existing programme on bycatch will help widen the scope and impact of our work, allow us to include other threatened taxa such as sharks, rays and marine mammals, identify critical pelagic habitats, and secure existing conservation achievements.

*“The bycatch partnership has paved the way towards better management of West African industrial fisheries for the benefit of people and nature.”*

Ahmed Diame, Bycatch Project Manager,  
BirdLife International

*“The project has been instrumental in building a multi-stakeholder partnership in West Africa to address bycatch, one of the most pressing threats to migratory marine species.”*

Amy Fraenkel Convention on the Conservation of  
Migratory Species of Wild Animals (CMS)

