

PROJECT REPORT

SUSTAINING CETACEAN BYCATCH REDUCTION IN GHANA THROUGH UPSCALING OF MONITORING OF LANDINGS, DEPENING FISHER ENGAGEMENT AND PROMOTING POLICY REFORMS PROJECT



AUGUST – 2024

Cover Photo: A Group photo of participants at the bycatch identification and data collection training workshop.

Credit: Bycatch network Project Coordinator-Eric Mawuko Atsiatorme



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This document is made possible by support from NOAA Award #NA20NMF0080322 to the Consortium for Wildlife Reduction, based at Ocean Associates Incorporated (OAI). The views expressed and opinions contained in this report are those Friends of the Nation and are not intended as statements of policy of either OAI. As such, the contents of this report are the sole responsibility of Friends of the Nation.



CSOs	Civil Society Organizations
DFAS	Department of Fisheries and Aquatic Sciences
FoN	Friends of the Nation
FC	Fisheries Commission
FTOs	Field Technical Officers
IUU	Illegal Unreported Unregulated fishing
IWC	International Whaling Commission
LoP	Life of Project
MoFAD	Ministry of Food and Agriculture Development
UCC	University of Cape Coast

Table of Contents

Acronyms	i
I.0.....	ii
Executive Summary	ii
I.0 Introduction	1
I.1 The Project.....	1
I.1.2 The award and committed funding.....	2
I.1.3 Project start and end dates.....	2
I.1.4 Profile of implementing partners	3
I.2 Project Aim, Objectives, Expected Outcomes	4
I.2.1 Objective 1: Upscaling by-catch reporting into the database of the newly initiated marine mammal by-catch monitoring programme.....	5
I.2.2 Objective 2: Reducing by-catch of marine mammals by deepening engagement with drift gill net (DGN) fishers for by-catch reduction solutions.	5
I.2.3 Objective 3: Operationalizing the draft Memorandum of Understanding (MoU) with Fisheries Commission for uptake of data into policy reforms	5
2.0 Progress on activities	5
2.1 Safeguarding	5
2.2 Objective 1: Upscaling bycatch reporting into the database of the newly initiated marine mammal bycatch monitoring programme	6
2.2.1 Activity 1.1 Identify, engage and train additional marine mammal reporting network members (along Eastern coast of Ghana) for wider data coverage.	6
2.2.2 Activity 1.2 Training of additional marine mammal reporting network members	6
2.2.3 Activity 1.3 Equipping network members with mobile technology devices for enhanced reporting with the CetaData Application.....	8
2.2.4 Activity 1.4 Upgrade cetacean online database	9
3.0 Objective 2.0 Reducing by-catch of marine mammals by deepening engagement with drift gill net (DGN) fishers for by-catch reduction solutions	10
3.1 Activity 2.1 Engage Drift Gill Net fishers on marine mammal conservation regulations for behavioural change.....	10
3.2 Activity 2.2: Increase dialogue with DGN fishers for gear reforms and other by-catch solutions	11

4.0 Objective 3: Operationalization of Draft Memorandum of Agreement with Fisheries Commission for uptake of data into policy reforms	12
4.1 Activity 3.1: Engage the Fisheries Commission to finalize and sign draft MoU on Cetacean Bycatch data sharing.	12
4.1.3 Activity 3.3: Produce and publish a policy paper on cetacean capture and awareness for behavioral change.	15
4.1.4 Activity 3.4: Design and printing of fact sheets	16
5.0 Conclusions and recommendations	17
 Figure 1: Professor Patrick Ofori Danson, taking participants through basic taxonomy and identification of marine mammals.....	6
Figure 2: A collage photo of Dr. Passadore of the IWC Secretariat and Dr. Wim C. Mullie a marine mammal expert based in Senegal participate in the training session via zoom.	7
Figure 3 A photo showing a screengrab of the improved cetadata web platform.....	Error!
Bookmark not defined.	
Figure 4: Presentation of Mobile Phone Devices to the bycatch network members	9
Figure 5: A picture of DGN fishers seated for discussion on bycatch solutions	11
Figure 6: Professor Francis Ewusie Kofi Nunoo, Board Chair and Ghana's representative on the IWC contributing to the discussions.....	12
Figure 7: A picture of Project Team holding a review meeting with the Alexander Adu-Antwi Esq. of the Legal Department of the Fisheries Commission	13
Figure 8: A screenshot of a letter from the Fisheries Commission informing the project partners of the establishment of the Marine Mammal desk office and requesting access to the Cetadatabase	14
Figure 9: A photo showing a screengrab of some feedback from reviewers to improve the manuscript.....	15
Figure 10: A screenshot of email acknowledgement of the manuscript received from the Frontiers Marine Science.	16
Figure 11: A photo showing a screenshot of the IWC commendation of the project	17

1.0 Executive Summary

The **“Sustaining cetacean bycatch reduction in Ghana through upscaling monitoring of landings, deepening fisher engagement, and promoting policy reforms”** is the second phase of a project to enhance cetacean conservation in Ghana through improved data management, behavioral change advocacy and increased deterrence in fishing communities.

The objectives of the project are to expand the geographical coverage of the bycatch reporting network towards the eastern coast of Ghana, engage the drift gill net fishers on behavioral change and bycatch solutions, and to operationalize the draft MoU with the Fisheries Commission for uptake of the data into policy reforms. The project is being implemented by the Friends of the Nation, and the University of Cape Coast with the support of the Marine Mammals Bycatch Solution and the Ocean Associates Incorporated. It was implemented from August 29, 2023 - August 31, 2024.

Achievements to date include:

- Capacities of five new recruits together with eleven existing network members strengthened on key physical morphometrics to use for identification in collecting marine mammal data.
- Enhanced capacity of sixteen FTO's on data collection for proper tracking of marine mammal landings through introduction to the database geo-tracking Ceta Data App
- Sixteen bycatch network members provided with mobile phones installed with the Ceta Data App to enhance data collection and submission into the database.
- A marine mammal desk office established and operationalized resulting in regular communication and updates that ensures that all relevant stakeholders are kept informed about ongoing activities, research findings, and any emerging issues.

Overall, the project has fostered a sense of responsibility and collaboration among policy makers, local fishing communities, which contributes to the long-term sustainability of marine mammal bycatch reduction efforts. This project has built on the successes of the initial phase, aiming for broader impact through expanded geographical coverage, deeper fisher engagement, and stronger policy integration representing a significant step forward in cetacean conservation efforts in Ghana.

I.0 Introduction

I.1 The Project

Conservation of marine mammals (especially cetaceans) has been an issue of global concern as increased exploitation of cetaceans has led to significant decline of cetacean populations in many coastal marine waters around the world. In Ghana, there has been an increasing trend in the directed catch of cetaceans as “marine bushmeat” in the face of the country’s near-collapse marine fisheries in recent times. Unfortunately, data availability on cetacean landings has remained scanty for decades, and available data are usually limited in geographical scope and time.

To address this problem, Ocean Associate Incorporated (OIA) supported Friends of the Nation to collaborate with the Department of Fisheries and Aquatic Sciences (DFAS) of the University of Cape Coast, to implement a one-year (March 2022- February 2023) marine mammal bycatch project titled: ***“Enhancing cetacean conservation in Ghana through improved data management, behavioral change advocacy and increased deterrence in fishing communities.”***

Through this support, the project established a multistakeholder marine mammal bycatch reporting network, and implemented activities that resulted in long-term monitoring, advocacy and continued data collection and reporting on cetacean landings among some hotspot fishing communities in Ghana. Additionally, the project developed an android-based mobile phone application named Ceta Data app hosted on Google Play Store with in-built ArcGIS functionality for geo-location-based data collection and submission.

Furthermore, the project developed a web database named CetaData hosted by the Centre for Coastal Management (CCM) of the University of Cape Coast for receiving transmitted data from the CetaData mobile phone application, storage, processing, analyzing and visualizing data. The data from the database was used to engage relevant stakeholders in designing cetacean conservation actions based on trends.

Since its establishment in April 2022, this cetacean management programme is addressing the current constraints faced with national coordination, availability, frequency, and continuity of cetacean data (also including strandings) and provides a decision support system for collaborative management.

Over the twelve-month period (April 2022 to March 2023), the first phase of this project documented a total of 254 individual cetaceans from 18 species comprising 249 (98%) landings from artisanal fisheries and 5(2%) strandings from nine sites. Although Phase I of the project produced significant successes in improving cetacean monitoring and time series data availability in Ghana, there is the need to sustain the gains on by-catch reduction through on-going monitoring, upscaling and expanding the geographical coverage of the network and reporting towards the Eastern Coast of Ghana (current reports cover nine landing beaches from the Western and Central coast of Ghana), engaging the drift gill net fishers on behavioral change and by-catch solutions, and operationalizing the draft MoU with the Fisheries Commission for the uptake of the data into policy reforms.

This project received a second year of support from the Consortium for Wildlife Bycatch Reduction to implement the project **“Sustaining cetacean bycatch reduction in Ghana through upscaling monitoring of landings, deepening fisher engagement, and promoting policy reforms.”** This was aimed at expanding the network membership and data collection/monitoring activities towards the Eastern Coast of Ghana to cover communities such as Senya Breku, Jamestown, Kpong, Old Ningo, Ada Foah and Keta. Further, the second phase of the project also intended to improve the data collection and transmission systems by upgrading the web database CetaData page and procuring Android mobile phones on which the CetaData App was installed for the network members to improve their work. Finally, the project will organize a refresher training on cetacean identification, data collection and transmission.

I.1.2 The award and committed funding.

In August 2023, the consortium comprising two institutions (FoN and DEFAS-UCC) led by FoN was awarded a grant for the Project with a committed Life of Project (LoP) funding of US\$ 32,000 by Ocean Associates Incorporated (OAI) to implement phase II of the project.

I.1.3 Project start and end dates

The project commenced on August 29, 2023, as scheduled, and is expected to end on August 31, 2024.

I.1.4 Profile of implementing partners

I.1.4.1 Friends of the Nation

Friends of the Nation (FoN), established in 1993, is a registered socio-environmental advocacy, non-profit, non-governmental development-oriented organization based in Adiembra in the Sekondi-Takoradi Metropolis of the Western Region of Ghana. Incorporated in Ghana, March 1994 as a company limited by guarantee, it received certificate # 54457 from the Registrar General's Department (Appendix 1) and registered with the Department of Social Welfare with registration # DSW/625. FoN is committed to enhancing active citizenship, social accountability and promoting human rights in Resource governance. A philosophy guided by a rights-based and eco-based approach to sustainable development employing the principles of Technology of Participation (ToP) with beneficiaries such as communities and institutions. FoN's mission is to catalyze increased action for sustainable natural resource governance and healthy environments as well as provide services to communities and institutions through Knowledge Transfer, Advocacy, Capacity Building, Networking & Research. FoN has previous experience with cetacean strandings since 2010 and was the key player in addressing the problem of increased whale strandings in Ghana coinciding with the start of offshore oil exploration and production which has led to official government investigations (EPA 2014). FoN also produced a policy paper on cetacean conservation for Ghana's delegation participating in the IWC meeting in Brazil in September 2018 (Mullié 2018) and co-signed with the Environmental Investigation Agency (EIA) in London a request to the Minister of Fisheries and Aquaculture Development to vote in favor of whale protection and against use of cetaceans as marine bushmeat (EIA 2018).

I.1.4.2 Department of Fisheries and Aquatic Sciences (DFAS), University of Cape Coast

The University of Cape Coast (UCC) is one of the rare sea front universities in the world. It was established in 1962 as a University College and attained the status of a full and independent University in 1971 with the authority to confer its own degrees, diplomas, and certificates by an Act of Parliament - The University of Cape Coast Act, 1971 [Act 390] (Appendix 2) and subsequently the University of Cape Coast Law, 1992 [PNDC Law 278]. In 2002, the Departments of Botany and Zoology of the erstwhile Faculty of Science were merged and elevated to the status of a School, the School of Biological Sciences

(SBS), out of which six new Departments were born. The Department of Fisheries and Aquatic Sciences (DFAS) is one of the six Departments in the School of Biological Sciences established from the former Zoology Department and has been running since the 2004/2005 academic year. The mandate of DFAS is to provide training, research, and extension for the sustainable management of coastal and aquatic resources. The Department therefore conducts research and trains middle- and high-level personnel in fields related to productivity, conservation, sustainable use, and management of aquatic resources with an emphasis on fisheries management and related resources. Within the mandate of DFAS, extensive research works have been carried out on various marine resources in Ghana's coastal-marine waters including cetaceans. The Department therefore has previous experience in field work on cetacean bycatch in Ghana (see Debrah 2010; Debrah et al., 2010) and intends in a follow-up phase to develop a course to familiarize BSc or MSc students with cetacean ecology, morphology, taxonomy, and economy to understand their role in marine food webs and their potential in generating income in a non-destructive way, such as by whale-watching tourism. DFAS partners with development agencies, including the United States Agency for International Development (USAID) to implement its activities, and has recently implemented a US\$ 5.5 million grant support project (USAID/UCC Fisheries and Coastal Management Capacity Building Support Project) focused on capacity building in fisheries and coastal resources of Ghana for sustainable management outcomes (<https://dfas.ucc.edu.gh/section/usaيدucc-fisheries-and-coastal-management-capacity-building-supportproject>). The Department works in collaboration with the Ministry of Fisheries and Aquaculture Development, other state institutions, NGOs, and local coastal fishing communities in contributing to policy formulation and implementation.

1.2 Project Aim, Objectives, Expected Outcomes

The current phase II of the project aims to scale up the bycatch reporting by expanding the network membership towards the eastern coast of Ghana. Additionally, the project intends to deepen engagement with DGN fishers to consider bycatch reduction solution measures and finally get the outstanding draft MoU with the Fisheries Commission signed and operationalized. The Project objectives cover three broad areas:

1.2.1 Objective 1: Upscaling by-catch reporting into the database of the newly initiated marine mammal by-catch monitoring programme.

The Expected Outcomes of this objective were:

- A number of reports received from new or additional landing beaches along the Eastern Coast of Ghana where there is currently no record of landings documented.

1.2.2 Objective 2: Reducing by-catch of marine mammals by deepening engagement with drift gill net (DGN) fishers for by-catch reduction solutions.

The Expected Outcomes were:

- The number of engagements with drift gill net fishers and by catch solutions proposed.

1.2.3 Objective 3: Operationalizing the draft Memorandum of Understanding (MoU) with Fisheries Commission for uptake of data into policy reforms.

The Expected Outcomes were:

- A MoU is signed with the Fisheries Commission and operationalized and evidence of by catch data incorporated in policy or management decisions by the Fisheries Commission of Ghana.

2.0 Progress on activities

2.1 Safeguarding

At the commencement of the project, FoN shared its safeguarding policy with the project team and reminded all about its zero-tolerance for sexual harassment, exploitation, abuse, and discrimination. This policy was also shared at the training workshop where all participants were sensitized and provided clear notice that this project has a zero tolerance for sexual harassment in any form and that any individual who violates the policy will be disciplined and/or dropped from participating in the project implementation. All participants consented and committed to abide by the zero-tolerance sexual harassment policy and signed the safeguarding policy after same was read and explained to them in their local language.

2.2 Objective 1: Upscaling bycatch reporting into the database of the newly initiated marine mammal bycatch monitoring programme

2.2.1 Activity 1.1 Identify, engage and train additional marine mammal reporting network members (along Eastern coast of Ghana) for wider data coverage.

The project identified five (5) new cetacean landing sites namely; Kpong, New Ningo, Prampram, Jamestown and Ada Foah from which 5 Fisheries Technical Officers (FTOs) were selected and included in the marine mammal reporting network. These sites added up to the nine (9) landing beaches in Western and Central coast of Ghana already identified under the phase one of the project, most of which were known hotspots for landing cetaceans.

2.2.2 Activity 1.2 Training of additional marine mammal reporting network members

The project organized a one-day refresher training on photographic documentation of cetacean parts for identification, data collection, monitoring, and reporting for all the network members including the newly selected members from the eastern coast of Ghana. The training also encompassed the use of the CetaData Application for collecting and submitting data into the online CetaData web portal in order to enhance the skills of the



Figure 1. Professor Patrick Ofori Danson, taking participants through basic taxonomy and identification of marine mammals.

participants on effective data gathering on cetaceans and reporting. The participants at the workshop included the project partner institution, University of Cape Coast, a marine mammal expert in Africa, Professor Patrick Ofori-Danson, Fisheries Technical Officers (FTO), and Community Volunteers from nine coastal communities namely Kpong, Jamestown, New Ningo and Prampram, Ada Foah, Tema Newtown, Nyenyano, Apam, Mumford, Elmina, Shama, Dixcove, Axim, and Half Asini. Other representatives included were from the International Whaling Commission (IWC), Dr. Wim Mullie, and Board Chairman of the Fisheries Commission (FC).

Prof. Patrick Ofori-Danson took the participants through basic data collection skills, basic features of cetaceans and a step-by-step guide towards identifying cetaceans. The IWC Secretariat represented by Dr. Cecilia Passadore (Bycatch Coordinator) who joined the training session by zoom link gave a presentation on the IWCs initiatives to address threats to cetaceans. These initiatives included the bycatch mitigation initiative (BMI, since 2016) which seeks to assess and promote bycatch prevention and mitigation measures world-wide, strandings initiative (since 2016) which ultimate global goal is building capability in strandings response, research, and data collection. The IWC's Scientific and Conservation Committee welcomed the phase II of the project which according to the Committee exemplifies the value of collaboration between a wide range of stakeholders from government agencies, academic institutions and civil society and noted the utility of the approach particularly for areas with difficult-to-monitor artisanal fisheries and encouraged further information from the region. Contributing to the training, a marine mammal expert, Dr. Wim C. Mullié, encouraged the project to focus more of its efforts on locations where the marine mammal landings are high in terms of their temporal and spatial distribution.

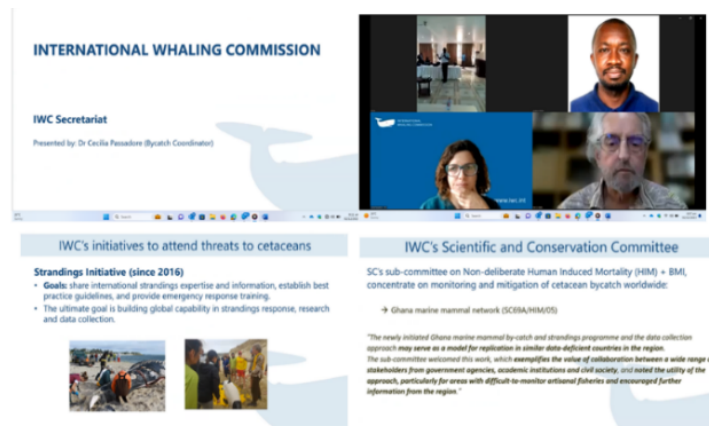


Figure 2. A collage photo of Dr. Passadore of the IWC Secretariat and Dr. Wim C. Mullié a marine mammal expert based in Senegal participate in the training session via zoom.

By the end of the workshop, the following results were accomplished:

Strengthened Capacities: The capacities of five new recruits and eleven existing network members were enhanced, focusing on key physical morphometrics for identifying marine mammals and collecting relevant data.

Improved Data Collection Skills: Sixteen Fisheries Technical Officers (FTOs) gained improved skills in data collection for accurately tracking marine mammal landings. This was achieved through their introduction to the geo-tracking Ceta Data App.

Enhanced Data Submission Tools: Sixteen bycatch network members were equipped with mobile phones pre-installed with the Ceta Data App, facilitating better data collection and submission to the database.

Enhanced Web Platform: The project improved the cetadata web platform by consolidating all activities covered by the By-Catch network onto one single web platform (<https://cetadata.ucc.edu.gh/>) with placeholders for the different activities hyperlinked to the original source. This also included the geo-tracking database and has improved the visibility of activities of the network and public access to information provided to the public.

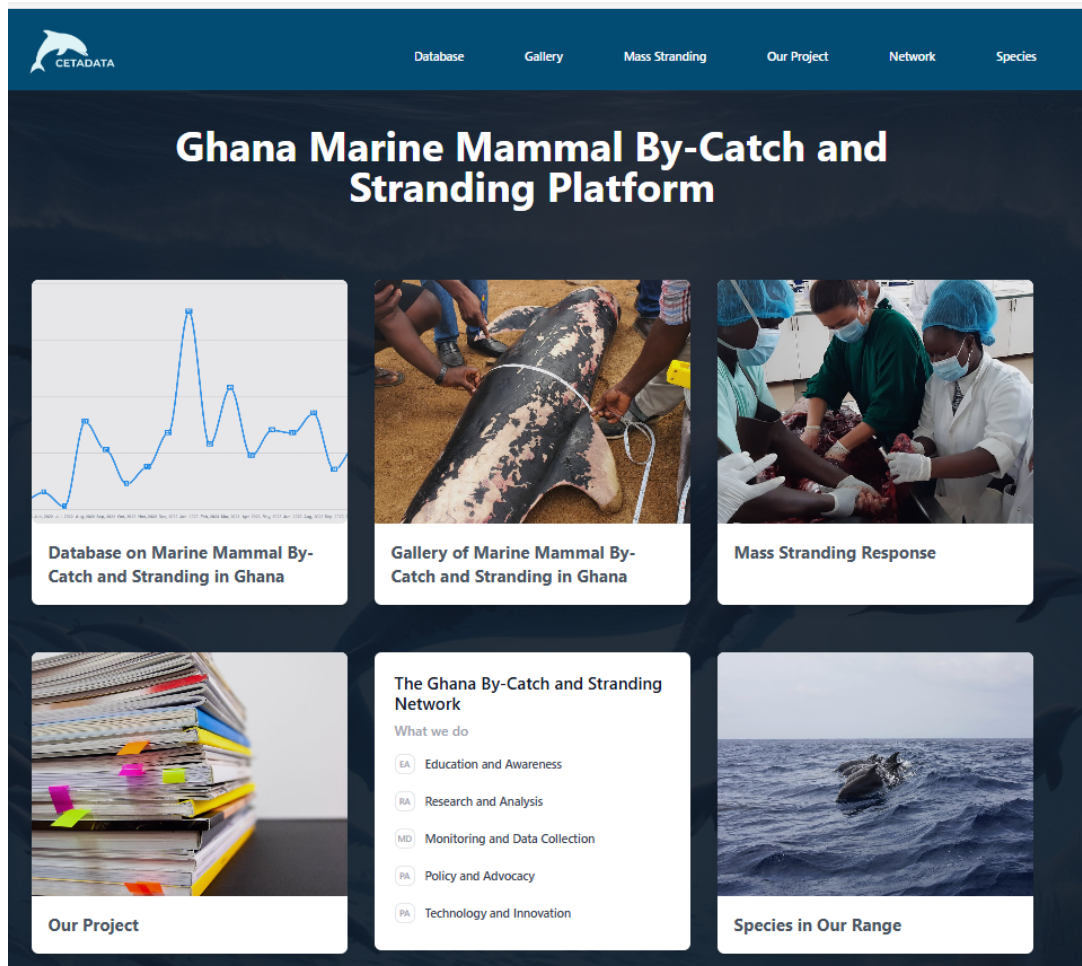


Figure 3. A photo showing a screengrab of the improved cetadata web platform.

2.2.3 Activity 1.3 Equipping network members with mobile technology devices for enhanced reporting with the CetaData Application

As part of the project's ongoing efforts to enhance data collection and transmission activities, twenty-five high-end Android mobile phones equipped with the Ceta Data App were procured and distributed to the bycatch network members. This initiative aimed to streamline and improve the efficiency of marine mammal data gathering and reporting. The distribution was followed by a comprehensive training session where members were guided on how to maximize the app's functionalities. This training was essential to ensure that all network members could effectively use the app for data collection, validation, and transmission. The provision of these advanced mobile phones enabled network members to collect data more accurately and efficiently. The Ceta Data App, installed on each device, streamlined the process of recording and submitting marine mammal sightings and bycatch incidents. Additionally, Equipping the bycatch network with these devices strengthened the overall reporting network. It ensured that all members had the necessary tools to contribute to the collective effort of marine mammal conservation and management.



Figure 4. Presentation of Mobile Phone Devices to the bycatch network members

2.2.4 Activity 1.4 Upgrade cetacean online database

In the project's ongoing commitment to improving data management and accessibility for cetacean conservation, the project significantly enhanced the user interface of the online Cetadatabase. These enhancements aimed to make the platform more user-friendly, intuitive, and efficient for researchers, conservationists, and stakeholders involved in tracking and managing cetacean data. The new design of the Cetadatabase interface prioritizes user experience, offering a more intuitive layout that simplifies navigation and data entry. Key functions are now easily accessible from a streamlined dashboard, allowing users to quickly find and use the tools they need. Additionally, the project has implemented several usability improvements, such as clearer menu structures, more straightforward workflows, and simplified

forms for data input. These changes reduce the learning curve for new users and enhanced overall productivity. By creating a more user-friendly, intuitive, and powerful platform, the project has enabled researchers, conservationists, and stakeholders to work more effectively and collaboratively. These improvements have undoubtedly contributed to more robust data collection, better-informed decision-making, and ultimately, the successful conservation of cetacean populations.

Also, to assist users in better understanding and interpreting data, the project integrated advanced data visualization tools into the Cetadatabase. These tools included interactive charts, graphs, and maps that allow users to explore data trends and patterns more effectively. The visual representations help in making data-driven decisions and identifying key insights at a glance.

Furthermore, to ensure that users have access to the most current information, the Cetadatabase now supports real-time data updates. This feature is particularly valuable for monitoring cetacean sightings, strandings, and bycatch incidents, as it allows for immediate data entry and instant access to the latest reports.

3.0 Objective 2.0 Reducing by-catch of marine mammals by deepening engagement with drift gill net (DGN) fishers for by-catch reduction solutions

3.1 Activity 2.1 Engage Drift Gill Net fishers on marine mammal conservation regulations for behavioural change

In response to the increasing concerns over marine mammal bycatch, a series of focused engagement sessions were held with Drift Gill Net (DGN) fishers in Apam and Sekondi. The aim of these sessions was to collaboratively explore and discuss effective solutions, including gear modifications, to mitigate this threat while maintaining the economic viability of the fishing industry. The engagement sessions began with detailed presentations on the critical issue of marine mammal bycatch. Experts provided an overview of the impact of bycatch on marine mammal populations, highlighting the species most at risk and the broader ecological implications. The sessions also addressed the legal and regulatory frameworks governing marine mammal protection, underscoring the importance of compliance for sustainable fisheries management. Also, fishers from Apam and Sekondi were invited to share their experiences and challenges related to

marine mammal bycatch. This included discussions on the frequency of bycatch incidents, the species most commonly affected, and the specific circumstances under which bycatch occurred. This open exchange allowed for a deeper understanding of the issue from the fishers' perspective and highlighted the practical challenges they face in mitigating bycatch.

Furthermore, participants were divided into smaller groups to brainstorm and develop potential solutions tailored to their specific fishing practices. These collaborative discussions focused on identifying practical and acceptable gear modifications that could be integrated into their operations. Fishers provided valuable insights into the feasibility and potential challenges of various solutions, and also requested that the Commission share with them the DGN gear performance review to help them recommend workable solutions that help reduce cetacean bycatch.



Figure 5. A picture of DGN fishers seated for discussion on bycatch solutions

The sessions also emphasized the need for long-term monitoring and support to ensure the sustained success of bycatch reduction efforts. Plans were developed for ongoing data collection and monitoring of bycatch incidents, with regular follow-up sessions to review progress and address emerging challenges. Support mechanisms, such as access to technical expertise and financial assistance for gear modifications, were also discussed to facilitate the transition to more sustainable fishing practices.

3.2 Activity 2.2: Increase dialogue with DGN fishers for gear reforms and other by-catch solutions

The project held a series of dialogue meetings with DGN fishers in Tema, Apam and Sekondi for gear

modifications and other bycatch solutions which are considered critical components of the project's strategy to promote sustainable fishing practices. Consequently, a significant portion of the engagement focused on exploring gear reforms as a strategy to reducing marine mammal bycatch. Various gear modification options were presented, including: Acoustic Deterrent Devices (ADDs)--devices that emit sounds to deter marine mammals from approaching fishing nets; net modifications--adjustments to net design, such as using stiffer nets or altering mesh sizes to prevent entanglement; and Bycatch Reduction Devices (BRDs) which are specialized attachments in the nets to facilitate the escape of marine mammals while retaining the target catch. Demonstrations and visual aids were used to illustrate how these modifications could be implemented and their potential effectiveness in reducing bycatch.

The regular engagement with the DGN fishers in Tema, Apam and Sekondi represented a proactive and collaborative approach to addressing the critical issue of marine mammal bycatch. By fostering open dialogue, exploring practical gear reforms, and emphasizing capacity building, the sessions aimed to develop viable solutions that balance ecological conservation with the fishers' livelihoods. Continued efforts and ongoing support will be crucial in ensuring the successful implementation of bycatch reduction measures and the long-term sustainability of marine mammal populations and local fisheries.

4.0 Objective 3: Operationalization of a Draft Memorandum of Agreement with the Fisheries Commission for uptake of data into policy reforms

4.1 Activity 3.1: Engage the Fisheries Commission to finalize and sign draft MoU on Cetacean Bycatch data sharing.

During the first phase of the project, the Fisheries Commission of Ghana was engaged in monitoring outcomes, trends of landings, the existence of an easy-to-access centralized database, and availability of a functional reporting network for broader



Figure 6. Professor Francis Ewusie Kofi Nunoo, Board Chair and Ghana's representative on the IWC contributing to the discussions.

geographical coverage at a minimal cost. This resulted in a draft tripartite Memorandum of Understanding (MoU) between the Commission, UCC and FoN on data effort. The Board Chairman of the Fisheries

Commission and Ghana's representative on the IWC, Professor Francis Kofi Ewusie Nunoo, at the training workshop indicated that the draft MoU between the project partners and the FC has been included in the agenda to be discussed by the board at its next meeting in December 2023. Professor Nunoo indicated that the FC was fully in support of the project and will consider establishing a desk office at the Commission's head office in Accra to coordinate the work of the bycatch network members. He expressed the hope that the data gathered on cetacean landings would strengthen Ghana's policy position towards conservation of marine mammals as required by section 90 of the Fisheries Act 2002 (Act 625). Subsequently, FC appointed an officer from its legal department to liaise with the project team and finalize the Memorandum of Understanding (MoU). This appointment underscored the commitment of both parties to formalize their partnership and ensure that all legal and procedural aspects were thoroughly addressed. The appointed legal officer served as the primary point of contact between the FC's legal department and the project team. The legal officer's role involved facilitating clear and effective communication, ensuring that both parties were aligned on legal and procedural matters related to the MoU.

The legal officer collaborated with the project team to conduct a comprehensive review of the draft MoU. This included analyzing the document to ensure that it complies with relevant laws, regulations, and policies. Based on the review, both parties worked on the recommendations resulting in a strengthened MoU. These recommendations covered key areas such as roles and responsibilities, dispute resolution mechanisms, and confidentiality agreements. The aim is to create a robust and legally



Figure 7. A picture of Project Team holding a review meeting with the Alexander Adu-Antwi Esq. of the Legal Department of the Fisheries Commission

sound agreement that supports the objectives of both parties. The appointment of a legal officer by the Fisheries Commission to finalize the MoU with the project team represented a significant step forward in formalizing the partnership. Through thorough legal review, collaborative discussions, and iterative revisions, the legal officer ensured that the MoU is robust, compliant, and supportive of our shared objectives. Consequently, both friends of the Nation and the University of Cape Coast have signed the MoU, awaiting an engagement with the Fisheries Commission possibly on Thursday August 29, 2024 to

sign the MoU.

4.1.2 Activity 3.2: Promote the uptake of Cetacean Monitoring data into policy reforms and management decisions.

The project engaged the Fisheries Commission (FC) on the data sharing modalities for uptake of the data from the monitoring into policy reforms and management decisions focused on curbing cetacean by-catch and protecting cetacean populations.

In response, the Fisheries Commission took a significant step towards enhancing marine mammal conservation efforts by establishing and operationalizing a Marine Mammal Desk Office. This office is now staffed with a dedicated desk officer who has been granted full access to necessary resources and data. The desk officer is actively coordinating data gathering and sharing between our project and the Fisheries Commission (FC), ensuring streamlined and effective communication and collaboration. By facilitating regular communication and updates, the desk officer ensures that all relevant stakeholders are kept informed about ongoing activities, research findings, and any emerging issues. This role is crucial for maintaining transparency and fostering a collaborative working environment. The desk officer's role in facilitating communication and coordination has strengthened the collaboration between our project and the Fisheries Commission. This enhanced coordination helps to ensure that all stakeholders are working towards common goals and that efforts to reduce marine mammal bycatch are aligned and complementary.



Figure 8. A screenshot of a letter from the Fisheries Commission informing the project partners of the establishment of the Marine Mammal desk office and requesting access to the Cetadatabase.

Also, in a significant development for the sustainability of the DGN (Drift Gill Net) artisanal fisheries sector, one of the Project's Principal Investigators (PI) has been appointed to the Scientific and Technical Committee of the Fisheries Commission. This appointment underscores the commitment to addressing bycatch reduction strategies and enhancing the environmental and economic viability of the fisheries industry.

As a member of the Scientific and Technical Committee, the PI will have the opportunity to influence fisheries policy at the national level. This includes advocating for regulations and incentives that support the adoption of bycatch reduction measures, securing funding for research and implementation, and ensuring that policies are aligned with international conservation standards and best practices. The appointment of the Project Principal Investigator to the Scientific and Technical Committee of the Fisheries Commission is a significant step forward in the project's mission to comprehensively address bycatch issues in the DGN artisanal fisheries sector

4.1.3 Activity 3.3: Produce and publish a policy paper on cetacean capture and awareness for behavioral change.

Producing a publication to communicate the work of the project to increase awareness for behavioral change in cetacean bycatch landings has been an integral part of the project. In this regard the project earlier submitted the manuscript ***"A novel digitalization approach and multistakeholder involvement for tracking cetacean landings and strandings in small scale fisheries along Ghana's coast"*** to be considered for publication in Frontiers Marine Science journal. The manuscript was reviewed and suggestions were made for improving it. Since the last

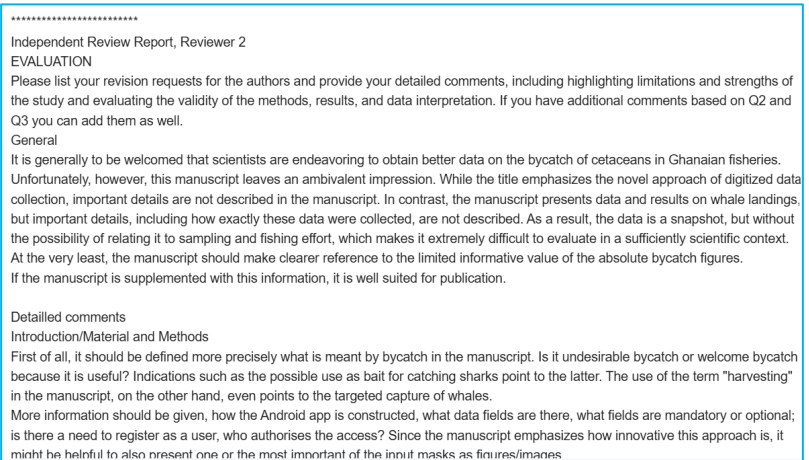


Figure 9. A photo showing a screengrab of some feedback from reviewers to improve the manuscript.

review, the manuscript has undergone a significant revision process following feedback from peer reviewers, and is being finalized for resubmission to a more targeted marine resource management journal, possibly Marine Policy of Elsevier. This critical work, which explores innovative methods for monitoring cetacean interactions in Ghana's small-scale fisheries, has been resubmitted to the Journal of Marine Science for further review and potential publication. The publication of this manuscript has the potential to significantly impact cetacean conservation efforts along Ghana's coast.

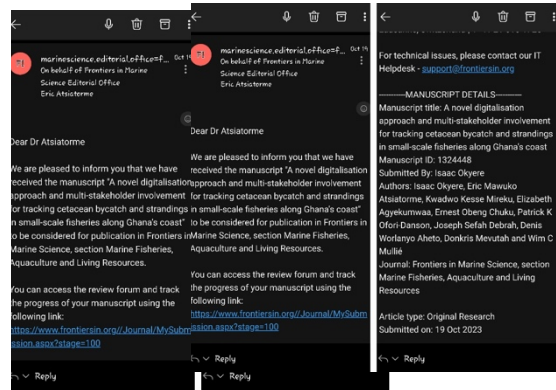


Figure 10. A screenshot of email acknowledgement of the manuscript received from the Frontiers Marine Science.

By showcasing an innovative digitalization approach and emphasizing multistakeholder involvement, the study provides a model that can be replicated in other regions facing similar challenges. The findings can inform policy decisions, enhance conservation strategies, and promote sustainable practices in small-scale fisheries.

4.1.4 Activity 3.4: Design and printing of a billboard in replacement of fact sheets

As part of the project's outreach and education efforts, the project is working on installing a marine mammal protection billboard (instead of fact sheet) in Shama, one of the cetacean bycatch hotspot communities. It will be strategically placed at a prominent location within the community. The placement will ensure high visibility, making it an effective tool for reinforcing the message about responsible fishing practices and the need to protect marine mammals.

The production and installation of the billboard in marine mammal bycatch hotspot community will represent a significant step in the project's educational outreach. This material is integral to enhancing the knowledge of fishers about bycatch reduction strategies emphasizing practical steps they could take to minimize unintentional captures of marine mammals and promoting sustainable fishing practices. By

increasing visibility and awareness, the project aimed to create lasting behavioral changes that would contribute to the conservation of marine mammal populations and the overall health of the marine ecosystem.

Other Important Milestones Achieved

In recognition of the achievements by the by-catch team through this project, the International Whaling Commission (IWC) extended an invitation to the project to participate in the 2024 annual meeting of the IWC Scientific Committee (SC/69b) in Bled, Slovenia, from 22 April – 3 May 2024. The team subsequently

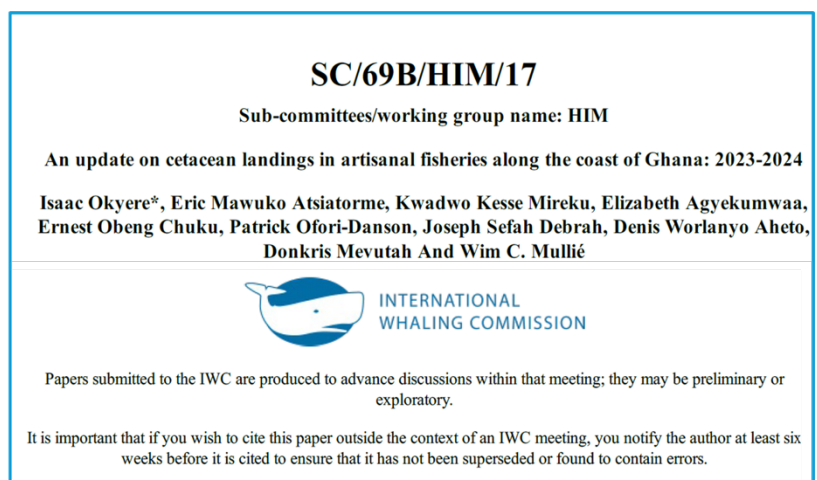


Figure 11. A photo of the IWC's commendation of the project.

submitted and presented a report on Ghana titled “An update on cetacean landings in artisanal fisheries along the coast of Ghana: 2023-2024”. The Subcommittee commended the impressive amount of data collected by the bycatch monitoring project in Ghana, and recommended that the IWC provide technical support to the project to expand its assessment and sampling protocols through the BMI and Strandings Initiative as requested by the project.

5.0 Conclusions and recommendations

The support for implementation of this project has resulted in the achievement of a number of significant milestones towards the protection and conservation of marine mammals in the Ghanaian waters of Ghana, importantly (1) continuous data collection and monitoring, (2) government policy reforms through establishment of marine mammal desk at the fisheries commission, (3) availability of cetacean landings data

and annual reports for Ghana to the IWC, (4) fishers' recognition of the need for cetacean by-catch mitigation solutions and (4) local capacity building for addressing cetacean by-catch and target takes. Through the support of this project, the by-catch team has provided for the first time a two-year continuous cetacean data reportage in twelve coastal communities. This proves that with continuous support, the project can achieve significant milestones in scientific, policy and community-based reforms needed for effective conservation of cetaceans in the Gulf of Guinea. It is therefore recommended that the project is further supported to:

- (1) sustain the monitoring of cetacean bycatch and policy engagement with the Fisheries Commission
- (2) build the capacity of the by-catch network in strandings response
- (3) conduct by-catch assessment and surveys
- (4) advance the by-catch mitigation initiative that has been started with the drift gillnet fishers conduct robust scientific trials of methods to reduce bycatch in the bycatch 'hotspot' communities.