



Ministry of Blue Economy and
Disaster Risk Management

ANNUAL TECHNICAL REPORT 2024-2025

SAFEGUARDING LIVES, SEAS, AND A SUSTAINABLE FUTURE FOR BELIZE

Table of Contents

Contents

Message from the Minister	4
Message from the Chief Executive Officer	6
List of Abbreviations.....	8
Executive Summary	9
Introduction	11
Mission, Priorities and Main Achievements	12
Blue Economy Unit.....	12
Belize Fisheries Department.....	23
Coastal Zone Management Authority and Institute.....	36
National Emergency Management Organization.....	44
National Meteorological Service of Belize.....	49
National Fire Service of Belize	54
Lessons Learnt.....	58
Future Priorities and Plans.....	61
Staffing and Financial Considerations.....	66
Conclusion and Recommendations	75
Annex 1. Organizational structure of the Ministry	76
Annex 2. Budget Distribution	77
Annex 3. List of publications, proposals, reports.....	79

Message from the Minister

Honourable Andre Perez



The Ministry of Blue Economy and Disaster Risk Management stands at a pivotal juncture, one that invites reflection, recognition, and renewed resolve. As we examine the contents of this technical report, we are reminded not only of the milestones achieved over the past year, but more profoundly, of the real and lasting impact those achievements have had on the lives of Belizeans across our nation.

This report offers more than a summary of activities; it is a chronicle of collective effort, a testament to what is possible when vision, strategy, and action converge. It underscores our Ministry's dual commitment: to fostering a thriving, inclusive Blue Economy, and to strengthening national resilience through comprehensive and integrated Disaster Risk Management.

Both arms of the Ministry are deeply intertwined in their purpose: they exist not merely to protect, but to empower; not only to respond, but to transform. Together, they serve as engines of economic growth, social equity, and environmental integrity, three pillars that underpin not only our work but our very future.

The positive impact is clear, and the tangible benefits of our work are felt across the nation. Our Blue Economy continues to act as an engine for prosperity, creating invaluable employment and generating essential revenue. At the same time, our focus on Disaster Risk Management equips Belize to face challenges head-on, protecting our people, our land, and our seas. Crucially, underpinning all these efforts is our commitment to the long-term health and vibrancy of our marine and coastal resources, ensuring their preservation and securing a vibrant legacy for generations yet to come.

These remarkable achievements are not forged in isolation but built on the bedrock of strategic partnership, collaboration, transparency, and accountability. As Minister, I fully recognize and sincerely congratulate the exceptional dedication of the Ministry staff, the invaluable contributions

of our partners, and the unwavering support of the Belizean people. Exemplary engagements that empower us all!

This report, detailing the Ministry's wide-ranging and multifaceted impact, also serves as a compelling case for continued investment in these critical areas. It proves that economic prosperity can, and indeed must, thrive in harmony with environmental protection.

As we chart the course ahead, let us remain resolute in our commitment to responsible stewardship and build upon the strong foundation we have established. With shared determination and unity, we shall press forward, knowing that with each determined step, we are forging a path towards a more prosperous, resilient, and vibrantly sustainable Belize.

Message from the Chief Executive Officer

Beverly Wade



As we reflect on the journey of the Ministry of Blue Economy and Disaster Risk Management (MBEDRM) for the fiscal year 2024/2025, I am proud to present this Annual Report which is a testament to the dedication, resilience, and innovation that have guided our work across both the Blue Economy and Disaster Risk Management arms.

This year marked a period of significant transformation for the Ministry. With the strategic integration of the Disaster Risk Management portfolio into our mandate, we strengthened Belize's capacity to address complex environmental and climate-related challenges through a unified, systems-based approach. By bringing together the Blue Economy Unit, the Belize Fisheries Department, and the Coastal Zone Management Authority and Institute with the National Emergency Management Organization, the National Meteorological Service, and the National Fire Service, we have created an institutional model that bridges ocean

governance with national resilience.

In the Blue Economy space, our work this year advanced on multiple fronts, from championing global leadership by ratifying the BBNJ Agreement and elevating our voice on international platforms like the Our Ocean Conference, to deepening local impact through the Blue Bonds framework, marine protected area governance, and investments in coastal community livelihoods. We continued to deliver tangible results: improved marine monitoring, expanded support for sustainable fisheries and mariculture, increased public engagement, and targeted capacity building to ensure long-term stewardship of Belize's marine assets.

Simultaneously, under our Disaster Risk Management arm, we strengthened preparedness and response across the country. From wildfire containment to flood response, from school disaster teams to climate-informed logistics, our agencies mobilized with professionalism and purpose. We developed national plans, rolled out new technologies, engaged youth, supported frontline responders, and fortified inter-agency coordination all with the goal of protecting Belizean lives and livelihoods.

Throughout both portfolios, we continued to drive a cross-cutting agenda grounded in climate resilience, innovation, inclusion, and equity. Whether through the promotion of gender in fisheries, the development of a national seagrass policy, or the expansion of our emergency medical services, our Ministry remained steadfast in its commitment to responsible leadership, evidence-based action, and lasting transformation.

These achievements would not have been possible without the unwavering dedication of our Ministry staff, the strength of our national and international partnerships, and the trust placed in us by the people of Belize. I extend my deepest gratitude to all those who contributed to this year's successes in policy, on the ground, and behind the scenes.

As we look ahead, the path is both clear and urgent. We must accelerate investment in marine conservation, climate adaptation, and disaster resilience. We must continue to leverage science, technology, and traditional knowledge to inform policy and empower communities. And we must remain united in our mission to build a resilient and sustainable Belize — one where our people thrive in harmony with our natural resources, and where future generations inherit oceans and landscapes that are healthy, productive, and protected.

Together, let us move forward with renewed purpose, knowing that our work today shapes the Belize of tomorrow.

List of Abbreviations

BBNJ	Biological Diversity of Areas beyond National Jurisdiction
BBRRS	Belize Barrier Reef Reserve System
BEU	Blue Economy Unit
BFD	Belize Fisheries Department
BSOP	Belize Sustainable Ocean Plan
CAP	Capital Budget
CDEMA	Caribbean Disaster Emergency Management Agency
CDM	Comprehensive Disaster Management
CIMH	Caribbean Institute for Meteorology and Hydrology
	Convention on International Trade in Endangered Species of Wild Fauna and Flora.
CITES	
CZM	Coastal Zone Management
CZMAI	Coastal Zone Management Authority & Institute
DRM	Disaster Risk Management
EMS	Emergency Medical Service
FAO	Food and Agriculture Organization
FY	Fiscal Year
GIS	Geographical Information System
ICZMP	Integrated Coastal Zone Management Plan
IUCN	International Union for Conservation of Nature
MBEDRM	Ministry of Blue Economy and Disaster Risk Management
MBECA	Ministry of Blue Economy and Civil Aviation
MPA	Marine Protected Area
MSP	Marine Spatial Plan
NEMO	National Emergency Management Organization
NFSB	National Fire Service of Belize
NGO	Non-governmental Organization
NMS	National Meteorological Service of Belize
OCPP	Ocean Country Partnership Programme
SMART	Spatial Monitoring and Reporting Tool
SOFF	Systematic Observing Financing Facility
UB	University of Belize
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund

Executive Summary

The Ministry of Blue Economy and Disaster Risk Management presents this Annual Report as a comprehensive reflection of its work over the 2024-2025 fiscal year, a year marked by innovation, collaboration, and transformation in Belize's journey toward a more resilient and sustainable future.

Throughout this year, the Ministry advanced its strategic priorities, reached key milestones and delivered cross-sectoral outcomes. These efforts reflect the strength of an integrated governance approach rooted in policy, science-based management, and inclusive stakeholder engagement in driving sustainable economic transformation while reinforcing national resilience.

A key development during this period was the formal integration of the Disaster Risk Management portfolio into the Ministry's mandate. This strategic realignment brought the National Emergency Management Organization, the National Meteorological Service, and the National Fire Service under the Ministry's leadership, ensuring a more cohesive and coordinated approach to national resilience and emergency preparedness.

Guided by the strategic vision of Plan Belize and aligned with global commitments such as the Sustainable Development Goals, the Ministry's dual arms, Blue Economy and Disaster Risk Management, worked in synergy to advance economic development, safeguard marine biodiversity, and strengthen the nation's adaptive capacity in the face of growing environmental and climate-related risks.

On the Blue Economy front, the Ministry has made significant progress in promoting responsible ocean governance, marine conservation, and ecosystem-based management. Initiatives implemented across the Belize Fisheries Department, the Coastal Zone Management Authority and Institute, and the Blue Economy Unit have contributed to more sustainable fisheries, enhanced compliance and enforcement mechanisms, and strategic partnerships that unlock innovation and finance. These efforts have generated tangible benefits for coastal communities by enhancing livelihoods, supporting sustainable enterprises, and ensuring the long-term health of Belize's marine ecosystems.

Simultaneously, the Ministry's newly established Disaster Risk Management arm focused on strengthening Belize's institutional readiness through targeted investments in early warning systems, emergency response infrastructure, inter-agency coordination, and community-level resilience. These investments have fortified Belize's ability to respond proactively to natural hazards and climate-induced events, protecting both lives and livelihoods.

The Ministry's mission to build a "thriving, innovative, and socially just Blue Economy" is rooted in the recognition of Belize's marine and coastal resources as vital natural capital. However, fulfilling this mission requires sustained investment, particularly in underfunded areas like disaster risk management, marine biodiversity conservation and ocean climate adaptation.

Above all, the achievements highlighted in this report reflect the dedication of the Ministry's staff, the unwavering support of national partners, and the trust placed in us by the people of Belize.

Looking ahead, the Ministry remains determined in its commitment to driving inclusive growth that is environmentally responsible, socially inclusive, and economically resilient.

Introduction

As of March 2024, the Ministry of Blue Economy and Disaster Risk Management (MBEDRM), formerly known as the Ministry of Blue Economy and Civil Aviation (MBECA), made significant progress in advancing sustainable development, environmental conservation, and economic resilience across Belize’s blue space. Guided by national priorities outlined in Plan Belize, the Ministry continued to improve the management and monitoring of marine reserves, strengthen compliance and communication mechanisms, and enhance overall effectiveness in marine governance.

In early 2024, the Ministry’s mandate was formally expanded to include Disaster Risk Management (DRM), reflecting the Government of Belize’s commitment to a more integrated and resilient national framework. This expansion placed the National Emergency Management Organization (NEMO), the National Fire Service of Belize (NFSB), and the National Meteorological Service of Belize (NMS) under the Ministry’s leadership. These three agencies are central to the country’s disaster preparedness, response, and recovery efforts.

MBEDRM now operates through two main functional arms (Annex 1). The Blue Economy arm includes the Blue Economy Unit (BEU), the Belize Fisheries Department (BFD), and the Coastal Zone Management Authority and Institute (CZMAI). The DRM arm includes NEMO, NFSB, and NMS. Together, these entities work collaboratively to safeguard Belize’s marine assets while strengthening national readiness and resilience to natural hazards and climate-related events.

This report provides a comprehensive review of the Ministry’s key priorities, accomplishments, and lessons learnt for the 2024–2025 reporting period. It is organized by department, with each section outlining strategic priorities, summarizing major achievements, and highlighting key partnerships and contributions that have supported the Ministry’s work throughout the year. Finally, the report provides a snapshot of the main future priorities and outlook for the upcoming Fiscal Year (FY) 2025

Mission, Priorities and Main Achievements

In November 2020, the Government of Belize established the MBECA with the mandate of overseeing Belize's diverse and tropical blue seas, and to ensure safe and secure air travel.

On April 3, 2024, with the Ministerial portfolio reshuffling, the Ministry was assigned the portfolio of Blue Economy and Disaster Risk Management. The MBEDRM's overall mandate is to oversee and coordinate the sustainable growth of Belize's blue space, providing weather information and forecasts, emergency management and protecting life and property from fires.

Blue Economy Unit

The BEU is tasked with leading Belize's transition to a blue economy and coordinates and leads marine and coastal initiatives that safeguard biodiversity, support coastal communities, and foster economic innovation in Belize. The work of the BEU is guided by the Blue Economy Development Policy, Strategy, and Implementation Plan (2022–2027).

The BEU's Mission is to increase Gross Domestic Product through a thriving Blue Economy Development pathway that is harmonized, innovative and socially just, supported by a robust, science-based management regime of our aquatic resources and space to improve the livelihood of all Belizeans.

The Blue Economy Development Policy, Strategy, and Implementation Plan (2022–2027) outlines the vision and mission of the blue economy and is structured around four priority areas:

Policy Priority Area 1: Governance Framework for Blue Economy Development

Policy Priority Area 2: Incentives for Blue Economy Development

Policy Priority Area 3: Capacity Building, Education, and Research

Policy Priority Area 4: Resource Mobilization

As Belize continues to chart a sustainable and inclusive course for ocean governance, the BEU has aligned its efforts with the national priorities outlined in Plan Belize. Activities undertaken during the 2024–2025 FY were assessed through this strategic lens, with a focus on marine conservation, institutional strengthening, innovation, and the sustainable development of marine resources. The following key achievements were realized:

Historic ratification of the Biological Diversity of Areas beyond National Jurisdiction (BBNJ) Agreement for Belize

- Belize has made history as the first Caribbean nation to ratify the United Nations Convention on the Law of the Sea regarding the Conservation and Sustainable Use of

Marine BBNJ Agreement. By depositing its ratification on April 8, 2024, Belize has showcased its commitment to global ocean stewardship and positioned itself as a leader in ocean governance. Belize's leadership is further recognized with Her Excellency Janine Coye-Felson's appointment as Co-Chair of the BBNJ preparatory commission.

- Additionally, Belize has secured crucial seed funding of BZD 350,000 from the Global Environment Facility for FY 2025 to support national implementation of these commitments. Through active participation in regional and international forums by the Ministry, Belize is shaping high seas governance, ensuring that the needs of Small Island Developing States are addressed.
- This ratification positions Belize to access benefits outlined in the treaty, such as potential access to and sharing of benefits from marine genetic resources, participation in decisions regarding high seas marine protected areas, access to capacity building and marine technology, and financial support for implementation. These future benefits have the potential to support scientific research, sustainable use of resources, and institutional strengthening, indirectly improving livelihoods and opportunities nationwide over the long term.



Belize's Director of Blue Economy at the organization session of the BBNJ Preparatory Commission (Photo by IISD/ENB Pam Chasek)

- Belize's active and prominent participation in the 9th Our Ocean Conference served as a powerful platform to champion our blue economy vision, forge critical partnerships, and advocate for the vital adaptation finance needed by of Small Island Developing States.
- In April 2024, the Belizean delegation led by Honorable Andre Perez visited Greece and co-hosted a side event titled "Their future depends on it—Building Climate Resilient Ocean Economies in of Small Island Developing States through Partnerships and Adaptation Finance," in partnership with the Stimson Center and Taiwan International Corporation and Development Fund.

- Minister Perez also delivered key ministerial statements during the Our Ocean Conference opening and plenary events, powerfully articulating Belize's commitments to the blue economy, climate resilience, inclusivity, and sustainable ocean management, enhancing our international visibility and influence.



Director Cruz, CEO Carillo, United States of America's Ambassador Lapenn, and Minister Perez at the 5th Our Ocean Conference



Panel speakers at the Belize-USA-Taiwan side eve

Capacity Building to Advance Blue Economy Development in Belize

Technical assistance through the Inter-American Development Bank funded Technical Cooperation (BL-T1145: Blue Economy Development in Belize) supported the completion of:

- An institutional strengthening assessment and action plan of the Ministry, including the BFD, the CZMAI, and the BEU, as well as, to a lesser extent, institutions in other sectors prioritized for Blue Economy development. The assessment evaluated capacity in terms of policy and legal mandates, staffing and skills required for Blue Economy development, governance and decision-making structures, collaboration and cooperation mechanisms, technological and technical capabilities, gender mainstreaming, data collection and reporting, and monitoring and evaluation.
- A Monitoring, Reporting, and Verification framework and toolkit. This component established an approach for developing a Blue Economy Monitoring, Reporting, and Verification system in Belize and produced an initial Excel-based toolkit to demonstrate how data can be used to understand the added value of such an approach. Although the framework and toolkit were completed, the specific goals and targeted performance indicators, which are aligned with existing commitments and national priorities, still require consensus among key stakeholders.
- A comprehensive assessment of the contributions of Blue Economy-related industries to Belize's Gross Domestic Product. The study provided an initial overview of ocean accounting in Belize through a brief desktop review of existing methodologies and approaches to ocean accounting, and an analysis of current socioeconomic and environmental contributions to employment, Gross Domestic Product, and other relevant indicators.
- An institutional capacity assessment of gender-related policies to support Blue Economy development in Belize. The assessment identified policy gaps, opportunities for gender mainstreaming, and specific capacity-building needs within key Blue Economy institutions, including the Ministry of Blue Economy, the CZMAI, and the BFD.

Increasing Public Awareness of the Belize Barrier Reef Reserve System (BBRRS)

- Through the Meso-American Reef Fund funded project titled “Advancing Implementation of the Branding, Marketing, and Communications Strategies of the BBRRS – A United Nations Educational Scientific and Cultural Organization (UNESCO) World Heritage Site,” which is spearheaded by the Ministry of Blue Economy and CZMAI, the following were achieved:

- Celebrated the Belize Barrier Reef’s 10,002nd Birthday, which is in alignment with World Oceans Day. A Blue Economy/Belize Barrier Reef Birthday Gala was held with various marine stakeholders to highlight and raise awareness of the BBRRS and its 10,000th milestone.
- Launched a social media and media campaign to raise public awareness and unify messaging around the seven protected areas that comprise the BBRRS.

In the upcoming fiscal year 2025/2026, this project will complete the development of a universal website for the Belize Barrier Reef, which intends to include a feature to facilitate online donations in support of the management of the World Heritage Site areas. Additionally, new signage will be installed at each of the seven marine protected areas. These efforts will enhance both national and international awareness of the BBRRS and its UNESCO World Heritage designation. Beyond awareness, the project seeks to foster national pride and a stronger connection to Belize’s rich marine heritage, reflecting the core vision of Plan Belize.



Honorable Andre Perez delivering his keynote address at the Belize Barrier Reef Birthday Gala



World Heritage site managers and partners receiving award of recognition on the Belize Barrier Reef Birthday Gala

Portugal Ocean Fellowship Program

- The selection and successful participation of Belize's Director of Blue Economy in the competitive United Nations-Portugal Ocean Fellowship program represents a significant investment in building high-level national capacity in crucial areas of ocean policy, marine conservation, and sustainable blue economy development. This prestigious fellowship was hosted by the Oceano Azul Foundation in Lisbon, Portugal, from October 14 to 18, 2024 and provided an invaluable opportunity to build relationships and networks with leading international experts and counterparts from across the globe, opening doors for future collaboration and knowledge exchange that will directly benefit Belize's ocean management efforts.
- Belize, alongside Seychelles and Cabo Verde, presented case studies on our blue economy development and Blue Bonds initiatives, showcasing our commitment to ocean conservation, sustainable growth, and strategic partnerships. Belize's leadership in ocean stewardship inspires other nations, exemplified by Director Cruz's warm reception from Portugal's President during an executive tour. This initiative builds the institutional strength needed to manage Belize's marine resources, engage in international forums, and drive sustainable blue economy solutions, thereby shaping our national ocean agenda.



Director Cruz and Portugal's President



Distinguished UN-Portugal fellows from the different countries.

Coastal Zone and Fisheries Sector Capacity Building through Climate Change Adaption and Disaster Risk Management

- The Food and Agriculture Organization (FAO) Technical Cooperation Program approved the project “Community Engagement of the Coastal Zone and Fisheries Sector of Belize Through Climate Change Adaptation and DRM Capacity Building,” valued at BZD 400,000. The Project commenced in November 2024 and aims to mitigate risks by strengthening DRM, improving livelihoods and raising awareness about climate change adaptation in key coastal communities. The project is in the implementation phase.
- While final outputs may not be fully completed within the year, significant progress has been made towards advancing components of the engagement strategy, action plan and Monitoring Evaluation, and Learning) framework for San Pedro Town, as well as, initiating the community-based DRM plans and Fisheries and Aquaculture Response to Emergencies training for Dangriga and San Pedro Town. This initiative invests in the human capital of our blue economy, preparing vulnerable populations for future challenges while promoting sustainable practices. The progress made this year sets the stage for expanding these interventions to other coastal communities in Belize.



Initial convening with the members of the Project Steering Committee.

Successful Marine Conservation Outcomes through the Ocean Country Partnership Programme funded by the United Kingdom’s Blue Planet Fund

- As part of ongoing efforts to strengthen MPA management in Belize, the BEU and the BFD through funding support of the Ocean Country Partnership Programme (OCP) facilitated a national workshop in February 2025 to support five key MPAs in assessing and improving their management effectiveness with the goal of achieving International Union for Conservation of Nature (IUCN) Green List status. Using the Green List – Improvement Benchmarking and Evaluation Index tool, participants evaluated their performance against the IUCN Green List Standard, generating scores that reflect how well each site is managed. These results will be used to develop a strategic roadmap to guide each site toward Green List certification between 2025 and 2027 to achieve the milestone under the Blue Bond Commitment.
- An Expert Assessment Group for the Green List for Belize was established in late 2024 consisting of Belizean conservation professionals who will be responsible for evaluating and validating the readiness of MPAs for IUCN Green Listing by their assessing compliance with the Green List standard criteria.
- Capacity building of Blue Economy stakeholders in Artificial Intelligence Machine Learning to monitor marine features such as marine litter using satellite imagery and AI to identify, quantify, and classify.
- Capacity Building of BFD, and MPA stakeholders in MPA Data Indicators Prioritization for improved MPA monitoring; and capacity building of CZMAI and its stakeholders in spatial data management and curation to address CZMAI’s current spatial data needs.

These Green Listing initiatives further support Belize’s Blue Bonds commitments and Plan Belize’s overall goal of protection of the environment through protecting and promoting the sustainable use of marine resources and the expansion of economic options within protected areas.

Initiatives such as AI Monitoring also directly support Plan Belize’s objective of leveraging modern technology for improved governance and strengthened institutional capacities.



Participants at the workshop on "Delivering Coordinated MPA Monitoring Through Standardization of Data Indicators."



Participants at the IUCN Green Listing Phase II workshop with IUCN, Feb 2025.



Participants at the February 2025 workshop on "Delivering AI & Machine Learning for Environmental Monitoring."

World Bank’s Blue Cities and Beyond Project

- Belize achieved a monumental milestone with the approval of the BZD 64.46 million World Bank "Blue Cities and Beyond" project in February 2025. This represents a transformative investment in our blue economy, poised to deliver significant improvements in critical urban and coastal infrastructure, environmental health, and community resilience. The successful preparation, negotiation, and approval of this substantial financing package from the World Bank and co-financiers is a testament to Belize's strategic planning and strong partnerships. It unlocks unprecedented resources to address critical challenges and pursue sustainable development pathways.

- This project is designed to tackle pressing issues such as land-based pollution, inadequate water supply, and climate vulnerability in key urban and coastal areas. While implementation is just beginning, the approval guarantees future investments that will lead to cleaner waters, improved public health, and enhanced resilience for thousands of Belizeans.
- The approval of the "Blue Cities and Beyond" project is a game-changer for Belize's blue economy. It represents years of dedicated effort culminating in a partnership that will drive significant infrastructure upgrades, strengthen governance, create new economic opportunities, and build essential resilience, directly contributing to a healthier environment and improved quality of life in our coastal regions.

Pioneering Data-Driven Ocean Governance through the Belize Ocean Accounts Pilot project

- Belize has launched its first ever Ocean Accounts Pilot Project through a strategic partnership between the MBEDRM and the Global Ocean Accounts Partnership, with funding support from the United Kingdom Government's Blue Planet Fund. The project's overarching goal is to generate robust data that links environmental health with economic value to inform sustainable ocean governance and investment. Key project deliverables include:
 - Conducting a Coral Reef Extent and Coral Reef Condition Account for a portion of the Ambergris Caye Reef which will quantify reef health, spatial extent and ecosystem services, and developing a National Ocean Tourism Satellite Account that will capture economic contribution of ocean tourism to national Gross Domestic Product. These ocean accounts are being aligned with the System of Environmental-Economic Accounting- Ecosystem Accounting and System of National Accounts frameworks, ensuring standardization and long-term monitoring.
 - Strengthening national capacity through the recruitment of three Belizean fellows who will be embedded within key institutions such as the Statistical Institute of Belize, CZMAI, the University of Belize (UB)-Environmental Research Institute, through the Ocean Accounts Fellowship Program. These fellows will support data collection, analysis, and the delivery of stakeholder training workshops.

Advancing Climate Resilience through the National Adaptation Plan for the Coastal Zone and Fisheries Sector

- With support from the National Adaptation Plan Global Network, the "Strengthening the Coastal Zone and Fisheries Sector Through Innovative Solutions" project continued implementation with a six-month extension to July 2025. Major accomplishments of the project include:

- Hosting of the Blue Economy Climate Resilience Forum 2024 to convene stakeholders, government and non-governmental entities, academia to foster collaborative planning.
- Completion of a Vulnerability and Livelihood Assessment for Chunox and Sarteneja informing adaptation measures tailored to the local needs of both coastal communities.
- Recruitment of development consultant ensuring the finalization of the National Adaptation Plan for the Coastal Zone and Fisheries Sector.



Vulnerability and Livelihood Assessment Consultation in Chunox



Presentations being delivered at the 2024 Blue Economy Climate Resilience Forum.

Developing Belize’s National Seagrass Management Policy

- Recognizing the vital ecosystem services and carbon sequestration potential of seagrasses, the National Seagrass Management Policy for Belize was launched in July 2024 and is currently under consultation.

- The national policy will be grounded in updated national seagrass mapping and blue carbon assessments, and it supports Belize’s Second Nationally Determined Contribution (NDC 2.0) commitments to enhance seagrass capacity as a carbon sink by 2030.
- This initiative reflects a proactive approach to marine habitat conservation, emphasizing coastal protection, fisheries productivity and biodiversity conservation and inclusive and transparent stakeholder engagement.
- Once adopted, the policy will fill gaps in governance and provide a framework for enhanced protection of priority seagrass areas, contributing to Belize’s international climate and biodiversity obligations.

Belize Fisheries Department

The mission of the BFD is “to provide the country and the people of Belize with the best possible management of aquatic and fisheries resources, with a view to optimize the present and future benefits through efficient and sustainable management”.

The Fisheries Department continues to support the implementation of the five (5) priority areas identified in the 2020-2024 Belize National Fisheries Policy, Strategy and Action Plan. These priority areas are as follows:

Priority Area 1: Conservation and Management of Fish and Ecosystems

Priority Area 2: Research and Development of the Fisheries Sector

Priority Area 3: Enforcement and Compliance

Priority Area 4: Capacity building and Knowledge Management

Priority Area 5: Fisheries Governance

In 2024, the BFD made significant strides in promoting the sustainable development and management of Belize's marine and aquatic resources. Through comprehensive policy frameworks, scientific research, monitoring, capacity building, and enforcement, the Department played a pivotal role in sustaining key fisheries, supporting community livelihoods, and conserving marine biodiversity.

Highlighting the Economic Impact of Belize’s Marine Capture Fisheries Sector

- The marine capture fisheries sector continued to be a vital contributor to Belize's economy, generating approximately BZD 35.9 million in export earnings despite a slight decline from 2023 (Figure 1). Spiny lobster and queen conch remained the cornerstone species, accounting for most exports. Spiny lobster exports totaled 547,430 lbs. of tails and 147,130 lbs. of whole lobsters, yielding BZD 21.7 million. Queen conch exports reached 952,200 lbs., valued at BZD 13.36 million, representing 97% of the sector's value (Table 1).

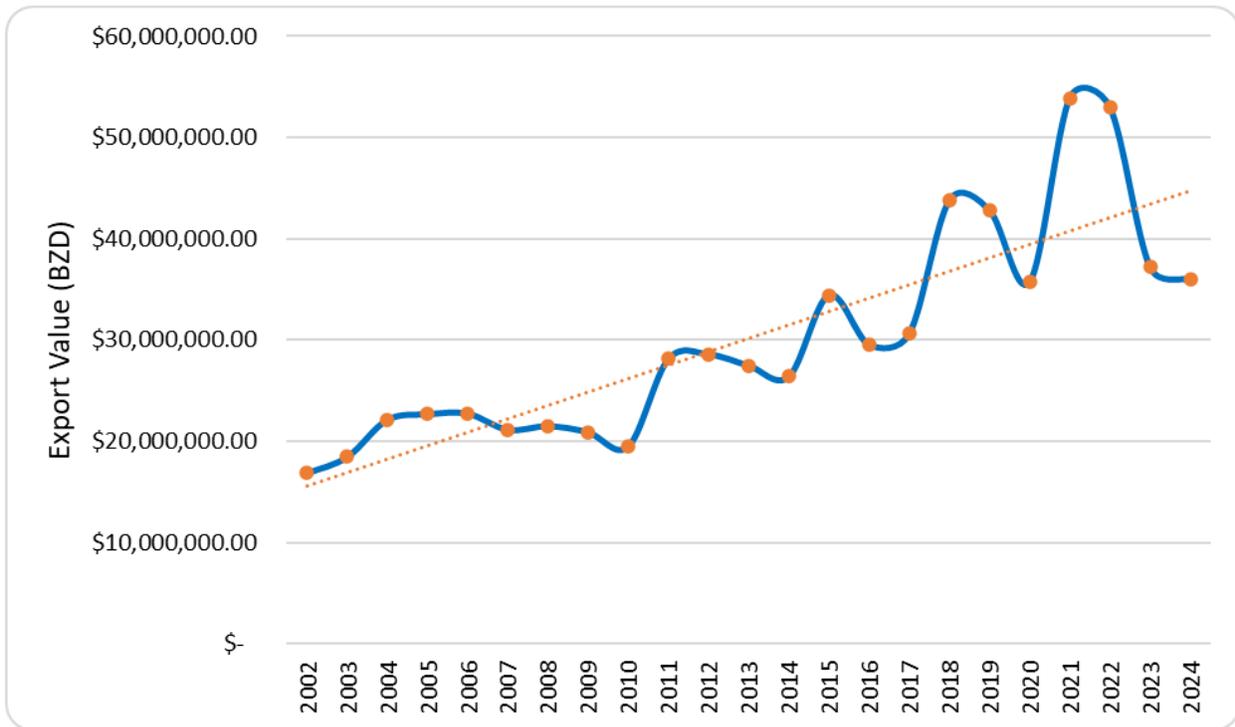


Figure 1 Historical value of the capture fisheries sector during the period 2000 - 2024.

Table 1 Fishery Commodity (2023 & 2024)

Commodity	2023	2024
Lobster Tail	\$ 19,223,080	\$ 19,244,820
Whole Lobster	\$ 4,133,990	\$ 2,492,590
Conch Meat	\$ 13,118,180	\$ 13,365,160
Stone Crab Claw	\$ 432,088	\$ 198,240
Aquarium Fish (No.)	\$ 196,910	\$ 129,030
Shark	\$ 93,460	\$ 224,928
Sea Cucumber (Dry)		\$ 299,124
Grand Total	\$ 37,197,708	\$ 35,953,892

Applying Science to Support Evidence-Based Fisheries Management

The Capture Fisheries Unit spearheaded critical scientific assessments to support evidence-based management.

- For Queen Conch, a Total allowable catch of 982,000 lbs. was established based on a national stock assessment. This was allocated among three cooperatives and two private processors.
- Similarly, Spiny Lobster stock assessments and monthly morphometric surveys informed management strategies, to ensure the long-term viability of the fishery.
- Additionally, the Sea Cucumber fishery, though facing market-related challenges, was managed under a conservative Total allowable catch of 175,000 lbs. However, production reached only 65,195 lbs (Figure 2) due to market and pricing challenges, highlighting the need for improved cooperation between fishers and exporters.

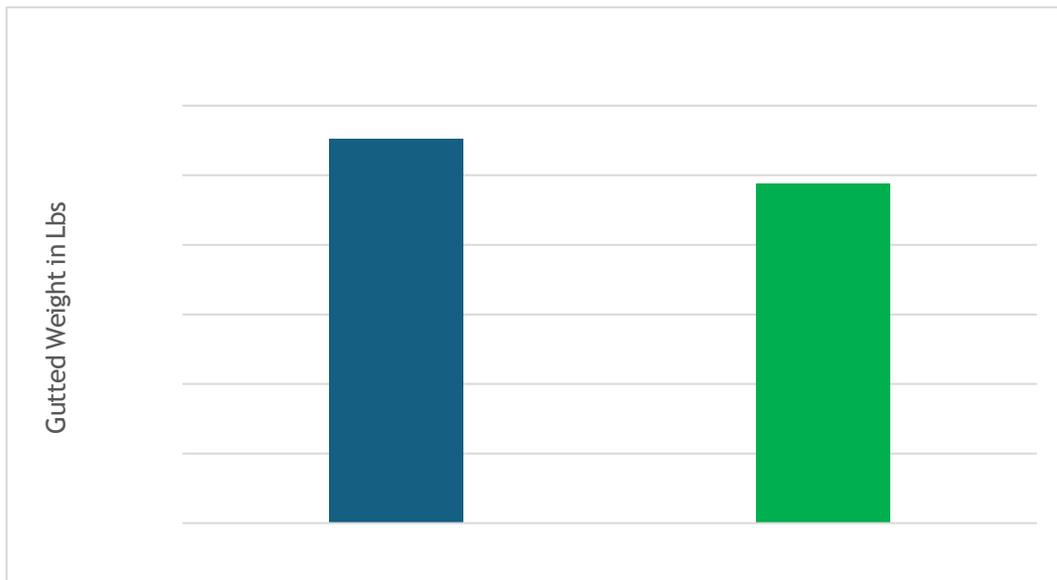


Figure 2 Sea cucumber production and export volume

- For Queen Conch, population assessments revealed increased legal-size individuals and positive biomass estimates. The average conch shell length was 144.5 mm, with 22% of the population exceeding the legal size. The legal-size biomass was estimated at 2.1 million lbs. using the Schaefer Surplus Production Model (Figure 3).

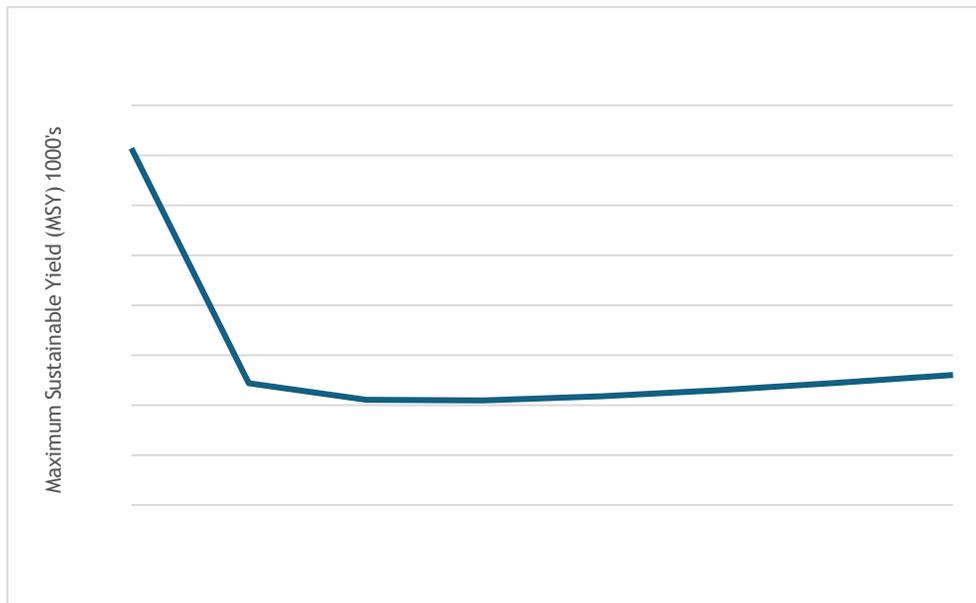


Figure 3 Schaefer Surplus Production Model

- Spiny Lobster surveys, including morphometric data from 760 samples, indicated that 13% of lobsters harvested were undersized, suggesting ongoing challenges with compliance. The average size was around 80 mm, and the sex ratio was approximately 55% male and 45% female. The sexual maturity analysis showed 52% of the population was in early development stages.
- The shark fishery yielded 49,463 lbs. of processed product, with 20,205 lbs. exported to Guatemala for BZD 224,928. The fishery remains compliant with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) requirements, and periodic monitoring and reporting ensures sustainable exploitation of shark species.
- To ensure that continuous capacity is being built for the shark fishery, staff from the Capture fisheries unit benefited from a refresher course focused on standardized shark species identification guidelines, as well as the implementation of a protocol for shark fin identification and data entry.

Advancing Policy Development and Strengthening Regional Integration

The Policy and Planning Unit facilitated the implementation of the Belize National Fisheries Policy, Strategy, and Action Plan (2020-2024), specifically focusing on priority area 5, fisheries Governance. In 2024, the Policy and Planning Unit led key initiatives, including:

- Development of Terms of Reference for a BZD 14 million Inter-American Development Bank-funded stock assessment consultancy (BL-L1042), which targets sustainable management of spiny lobster, queen conch, and finfish in Fishing Area 9. The consultancy also includes exploratory fishing, environmental assessments, training programs, and monitoring and reporting frameworks to support long-term fisheries sustainability.

- Development of Non-Detriment Findings for CITES-listed species, such as requiem and blue sharks.
- Support for the mariculture sector, including seaweed farming regulations and direct assistance to the Belize Women Seaweed Farmers Association.
- Coordination with regional governance frameworks, such as the Mesoamerican Reef Ecoregion Strategy (Sistema de la Integración Centroamericana and Central American Commission for Environment and Development).

Diversifying Livelihoods Through Mariculture and Emerging Fisheries

The Department promoted diversification of marine resource use by supporting mariculture and emerging fisheries.

- Seaweed mariculture was a key focus area, with technical support provided to farmer cooperatives in southern Belize. In the capture sector, stone crab and sea cucumber fisheries were managed under updated regulations, including species-specific Total allowable catch, size limits, and export protocols.
- Sea cucumber production for 2024 totaled 65,195 lbs. gutted weight, with 58,790 lbs. exported, generating BZD 299,122. The legal harvest size is 16 cm (or 7.36 cm dried), and all exports were inspected for compliance.
- The stone crab fishery, formally regulated under Statutory Instrument No. 108 of 2022, continued to operate under a seasonal framework with a closed season from July 1 to September 30. For the 2022/23 season, a catch quota of 15,000 lbs. was established for exporters. In 2023, production totaled 10,341.20 lbs. of stone crab claws. The formalization of this fishery not only enhanced accurate reporting but also contributed to improved compliance and sustainability of the resource. Stone crab management includes mandatory claw-only harvesting and trap regulations, which support ecological resilience and allow for regeneration of the crab population.
- In terms of revenue, stone crab licensing and export permits contributed a combined BZ\$3,800 to departmental revenues in 2024. Though still relatively modest in volume, the fishery shows potential for growth and diversification of Belize's seafood portfolio

Enhancing Ecosystem-Based Management through Marine Protected Areas

- The Ecosystem Management Unit strengthened the management of marine reserves through compliance, monitoring, and enforcement. Key reserves included Glover's Reef, South Water Caye, Sapodilla Cayes, Bacalar Chico, and Caye Caulker.
- Enhanced patrolling efforts were made possible through fuel allocations under the Blue Bonds Government Strategic Allocation (GSA) Project. South Water Caye Marine Reserve led with over 600 gallons used monthly and up to 40 patrols conducted.

Glover’s Reef Marine Reserve followed with consistent patrols and a 1.61% increase in lobster production. Despite limited resources, Bacalar Chico Marine Reserve, a smaller reserve, maintained functional operations.

- Marine reserve visitation contributed significantly to conservation funding. South Water Caye recorded peak revenues of BZD6,780 in April and BZ\$4,900 in February. Glover’s Reef saw consistent revenue, peaking at BZ\$2,970 in January. Sapodilla Cayes ceased reporting mid-year due to the transition to co-management.

Environmental Monitoring for Improved Conservation

The Department conducted critical environmental monitoring programs. These are:

- Beach trap monitoring: Six beach traps operated by a fisher family yielded 13,475 lbs of finfish. The top species included Great Barracuda (4,450 lbs) and Gray Snapper (3,880 lbs). Catch Per Unit Effort declined from 37.4 to 33.3 lbs/day (Figure 4).

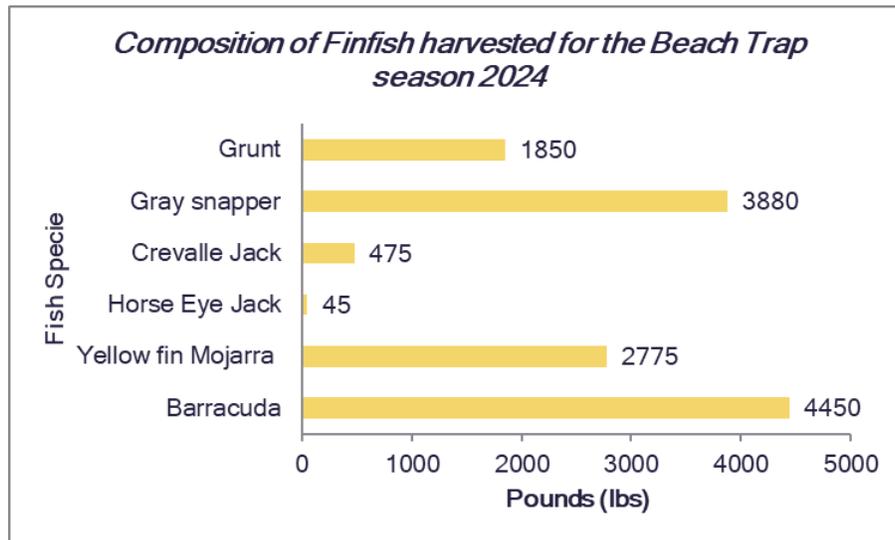


Figure 4 Fish composition of catch from 2024 beach traps season

- Spiny lobster visual surveys: Conducted post-season and pre-season surveys at four reserves. Highest abundance was recorded in Bacalar Chico Marine Reserve while South Water Caye Marine Reserve showed the highest mean carapace length.
- Turtle nesting monitoring: 34 nests were recorded in 2024, with 1,216 Hawksbill turtle eggs and 1,143 eggs of unknown species. Glover’s Reef Marine Reserve and South Water Caye Marine Reserve led the efforts.



Green turtle hatchling just before being released into the sea.

- Coral bleaching monitoring: Severe bleaching affected northern reserves, with Bacalar Chico Marine Reserve showing over 50% of corals bleached. Affected species included *Porites astreoides* and *agaricia tenuifolia*.



Bleached Porites astreoides at Robles Fore Reef



Healthy Orbicella franksi coral at Robles Fore Reef

- Water quality monitoring: Conducted at 27 sites using seasonal sampling. Results remained stable, though seasonal fluctuations influenced parameters.

Ensuring Compliance through Increased Enforcement and Inter-Agency Collaboration

Enforcement activities remained a central focus in 2024, with significant attention placed on improving compliance within MPA. The Conservation Compliance Unit, along with the Ecosystem management Unit, conducted coordinated patrols across key reserves. These efforts were bolstered by fuel allocations through Blue Bonds GSA, enabling more frequent and extended patrols (Figure 5).

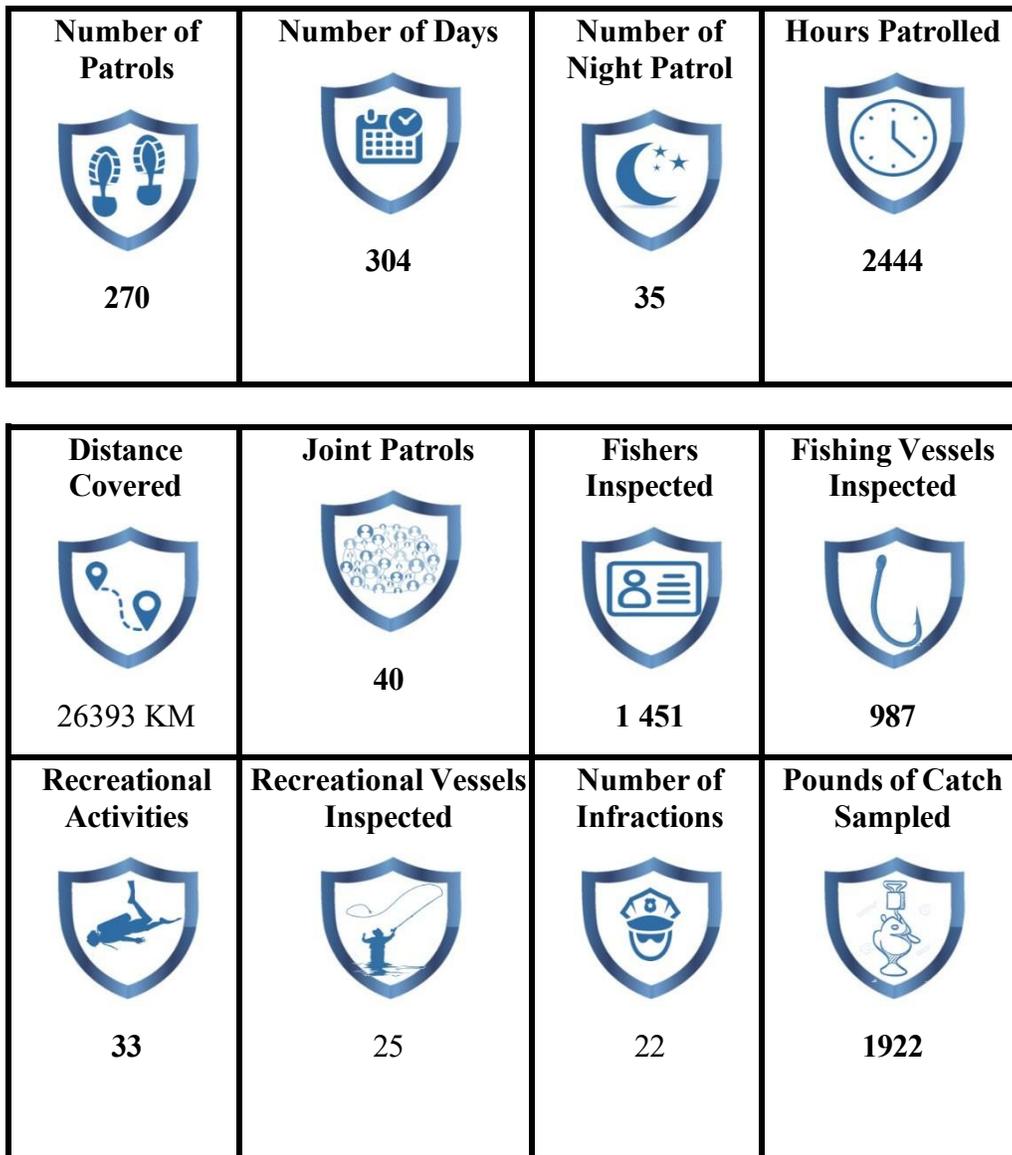


Figure 5 Patrol Summary from SMART shows significant increase.

- Infractions recorded during 2024 included a range of fisheries violations. The most common infraction was fishing within conservation zones, accounting for 24% of offenses. Fishing without a valid license made up 20% of violations, highlighting gaps in regulatory compliance and licensing. Possession of undersized conch and lobster represented 16% and 12% of recorded cases, respectively. Other offenses included possession of out-of-season lobster, lobster with tar spot, and prohibited species (each 8%), and operating without a captain's license (4%).
- These infractions underscore persistent challenges in achieving full compliance and emphasize the need for continued surveillance, community education, and inter-agency collaboration. The Department's joint patrols with the Belize Coast Guard and Department of the Environment contributed to increased enforcement presence and more comprehensive monitoring of illegal activities.

- Spatial Monitoring and Reporting Tool (SMART) patrol data enabled managers to monitor patrol frequency, coverage, and effectiveness, particularly in areas like South Water Caye and Glover’s Reef. The system facilitates real-time reporting and decision-making, improving transparency and operational efficiency.
- Training and capacity building around SMART use were conducted with enforcement officers and marine reserve staff. These efforts have improved data consistency and highlighted trends in illegal activities, further informing management interventions. Moving forward, the Department plans to integrate SMART with other data systems for better fisheries resource monitoring and compliance reporting.



SMART Training Session with the Conservation Compliance Unit Punta Gorda



SMART Training Session with the Conservation Compliance Unit Belize City



SMART Training with the Capture Fisheries Unit

Licensing

In 2024, the BFD continued to refine and enforce its licensing system under the Managed Access Program, which is central to regulating fishing effort and ensuring sustainable resource use.

- A total of 3,701 licensed fishers were registered, of which 96.65% were male and 3.35% female. Licensing remains essential in managing entry to the fisheries, but the Department

acknowledges that current open registration trends, especially among part-time or opportunistic fishers, contribute to the overestimation of fishing effort. This has implications for stock assessments and catch per unit effort calculations.

- The Department aims to address this issue in 2025 through revisions to the Fisheries Resources Regulations. A more structured licensing framework is being considered to improve data accuracy and ensure that only active, full-time fishers are included in assessments.

Managed Access

- As part of Belize's commitments under the Blue Bonds Conservation Agreement, the Managed Access program is undergoing a comprehensive evaluation. This review is being led by the OCPP.
- In January and February 2024, the OCPP team conducted online interviews with government staff, co-managers, NGO partners, and other key contacts. Based on these interviews, an interim report was produced and submitted to the Fisheries Department for feedback.
- Following this, in June 2024, OCPP conducted in-person interviews with selected fishers in all major fishing communities to gather additional insights. A draft of the evaluation report is expected in early 2025, with the final version featuring actionable recommendations to strengthen the Managed Access program scheduled for release by March 2025.

Environmental Impact Assessments

- In 2024, the BFD reviewed a total of twenty-six (26) Environmental Impact Assessments, of which eight (8) were related to proposed coastal and marine development projects.
- The Department actively participated in the National Environmental Appraisal Committee process, providing critical technical input on project proposals and conducting joint site visits with relevant agencies.
- Projects reviewed included the Port of Belize Expansion, Stake Bank Cruise Terminal, and developments at Turneffe Atoll. The Department's feedback focused on the potential impacts on marine biodiversity, fisheries habitats, and compliance with the Fisheries Resources Act and associated regulations. This rigorous review process is part of the Department's mandate to ensure environmentally responsible coastal development and safeguard fishery resources.



Impact Assessment: Vessel Grounding – Half Moon Caye Marine Reserve

Promoting Gender Equity in Fisheries

The Belize Fisheries Department expanded its gender mainstreaming initiatives in 2024 through collaboration with regional and national stakeholders.

- The Department co-hosted the "Gender in Fisheries" training in partnership with the Caribbean Regional Fisheries Mechanism, FAO, and United Nations (UN) Women. This initiative trained Fisheries Officers and community leaders in integrating gender perspectives in fisheries governance.
- The Department also supported women-led mariculture enterprises such as the Belize women seaweed farmers association and included gender-disaggregated data collection in its field assessments. These efforts aimed to increase visibility of women's contributions in the sector and ensure equitable participation in decision-making and livelihood opportunities across Belize's fisheries landscape.

Monitoring Marine Mammals to Inform Conservation and Response

In 2024, the Department collaborated with the Clearwater Marine Aquarium Research Institute and the Belize Marine Mammal Stranding Network to monitor and respond to marine mammal strandings.

- A total of eight (8) marine mammal sightings and three (3) stranding events were recorded, including incidents involving bottlenose dolphins and West Indian manatees.
- The Department's officers were trained in first response protocols, contributing to improved coordination and timely intervention. Public awareness campaigns were also

conducted, particularly in high-traffic coastal areas, to reduce threats such as boat strikes and entanglement. These activities support Belize’s international commitments to marine mammal conservation and help to maintain accurate national records of marine mammal activity and threats.



Fisheries Department's team responding to a manatee stranding in the Belize river.

Education, Outreach, and Compliance

The Fisheries Department emphasized compliance and awareness through:

- Shark Sensitization Workshops covering CITES updates and export protocols.
- Training in data collection, species identification, and monitoring techniques.
- Public education on sustainable fishing practices and resource stewardship.
- Community outreach campaigns targeting fisherfolk and coastal communities.

Additional workshops and events aimed at raising awareness, promoting collaboration, and building capacity within the fisheries sector and related fields included:

- A screening of “*Treasure of the Caribbean*”, a documentary highlighting The Cayman Crown. This was presented as part of the Big Fish Campaign to raise awareness about marine biodiversity and conservation efforts.
- The Blessing of the Boats, which is an event that marks the start of the lobster fishing season and includes community engagement and activities promoting sustainable fishing practices.

- The Fisher of the Year Awards Ceremony, held annually during Fisherfolk Month, which honours the Fisher of the Year and other outstanding fishers for their contributions to the industry.
- The contribution of fishmeal to food and nutritional security workshop showcased the nutritional benefits and production process of fishmeal, highlighting its potential to support food and nutritional security in the Central American region. It included a tasting session and feedback from primary school students.



Boat-to-Boat outreach at Lighthouse Reef Atoll



United Community Primary School's visit to Belize Fisheries Department Belize City office



St. John's College High School Business Expo 2024



Blessing of the Boats 2024



Screening of "Treasure of the Caribbean", a documentary about the Cayman Crown



Contribution of Fishmeal to Food and Nutritional Security workshop

Coastal Zone Management Authority and Institute

The CZMAI's mission is to lead the sustainable use and planned development of Belize's coastal zone. The priority areas are as follows:

1. Strengthening Coastal and Marine Data Management and Research

- Goal: Improve knowledge of Belize's coastal ecosystems through data collection, monitoring, and research.
- Key Actions:
 - Enhance water quality monitoring (e.g., monthly sampling in key areas).
 - Develop geospatial data management systems for marine planning.
 - Fill critical knowledge gaps in coastal zone management.

2. Sustainable Marine and Coastal Resource Management

- Goal: Ensure long-term protection and sustainable use of Belize’s coastal resources.
- Key Actions:
 - Implement the Belize Sustainable Ocean Plan (BSOP) to expand Marine Protected Areas (MPAs) (25% ocean protection).
 - Update the Integrated Coastal Zone Management Plan (ICZMP) and Coastal Zone Management (CZM) Act.
 - Develop sport fishing regulations through community consultations.

3. Enhancing Coastal Community Resilience and Livelihoods

- Goal: Support climate-resilient and economically sustainable coastal communities.
- Key Actions:
 - Implement Ridge-to-Reef programs to improve watershed and reef health.
 - Conduct community engagement (e.g., sport fishing consultations, summer camps).
 - Promote alternative livelihoods (e.g., sustainable fishing, eco-tourism).

4. Stakeholder Engagement and Public Awareness

- Goal: Strengthen partnerships and public understanding of coastal conservation.
- Key Actions:
 - Host Coastal Awareness Week and educational events (e.g., school programs, expos).
 - Collaborate with government agencies, Non-Governmental Organizations (NGOs), and local communities.
 - Improve transparency and communication on coastal management policies.

In the FY 2024/2025, the CZMAI advanced Belize's integrated coastal management efforts through comprehensive data collection, coastal planning, stakeholder engagement, and marine spatial management. These efforts were guided by CZMAI's Strategic Plan 2020-2025 and Annual Operational Plan, aligning closely with Belize's commitments under the Blue Bond Agreement and global resilience initiatives.

Strengthening Coastal Knowledge and Filling Gaps to Inform Public Policy on Health and Resilience of the Coastal Zone

CZMAI significantly enhanced its coastal knowledge base by addressing data gaps and expanding research.

- With support from the OCPP and the UK Blue Planet Fund, CZMAI developed data curation guidelines and conducted a spatial data management workshop focused on geospatial data handling, metadata creation, and marine resource applications.



Participants of spatial data management workshop

- Under the Ridge-to-Reef project, monthly water quality monitoring commenced at 17 coastal and marine sites along with the Fisheries Department. 6 coastal sites near the North Stann Creek and Sitte River watersheds and 11 historical water quality monitoring sites in the South Water Caye Marine Reserve (Figure 6).
- Biophysical parameters (e.g., temperature, pH, chlorophyll a) and nutrient concentrations (e.g., nitrate, phosphate) were collected and compiled into a dedicated database. Training was provided to South Water Caye Marine Reserve staff, enabling better water quality management and comparative historical analysis.

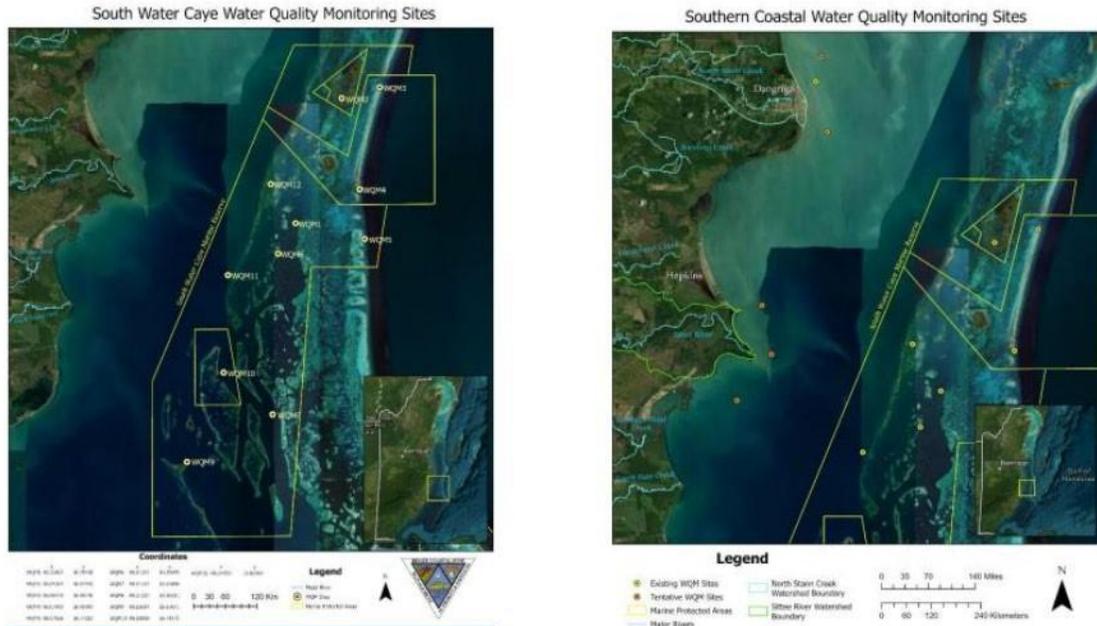


Figure 6 historical water quality monitoring sites in the SWMR

Advancing Sports Fishing Management

Sport fishing management saw major advances with three rounds of consultations conducted in seven coastal communities.

- A Sport Fishing Technical Working Group, established with Environmental Defense Fund support, reviewed and validated regulatory recommendations.
- Draft Sport Fishing Regulations were presented in final consultations, and participatory mapping was conducted to create heatmaps of sport fishing hotspots. These findings support the BSOP and ICZMP revisions.



Community Members discussing methodology for sport fishing mapping data collection

Advancing Marine Spatial Planning and Integrated Coastal Zone Development

Key milestones were achieved under the Belize Blue Bond framework.

- The ICZMP and CZM Act underwent major revisions through a consultancy with IH Cantabria.
- Stakeholder feedback was gathered during Coastal Advisory Committee meetings, workshops, and steering committee sessions.
- A draft ICZMP and nine CZM guidelines will undergo public review early FY 2025/2026.



Coastal Advisory Committee Meeting in Corozal



National workshop on the updating of the ICZM Plan and development of the ICZM Policy

- Simultaneously, the Marine Spatial Plan (MSP) otherwise known as the Belize Sustainable Ocean Plan (advanced toward Milestone 4: protecting 25% of Belize’s ocean space. This included national validation sessions and the submission of documentation for Biodiversity Protection Zones expansion.
- In December 2024, the CZMAI also participated in a Peer to Peer Exchange in Belize with the Barbados Coastal Zone Management Unit.



Barbados-Belize MSP Peer Learning Exchange

- Additionally, the MSP Unit with support from Enumerators conducted the second round of Ocean Use Survey during the period, January to March 2025.



Ocean Use Survey being conducted in the field.

Enhancing Community Resilience Through the Resilient Reefs Initiative

- CZMAI implemented critical components of the Resilient Reefs Initiative, including subprojects and the launch of the Ridge-to-Reef project in collaboration with the Great Barrier Reef Foundation and UNESCO. These efforts focus on watershed health, reef protection, and community engagement. Additionally, Public education materials and videos were developed to raise awareness about reef resilience.



Compilation of images from RRI funded activities, training, meetings, and events etc.

Expanding Public Engagement and Institutional Visibility

- CZMAI prioritized stakeholder engagement through participation in national and international forums including the UB Geographical Information System (GIS) Expo, Blue Economy Forum, Reef Week Expo, and the 10th Annual Coastal Awareness Week. Signature events such as a TED Talk, run for the Coast, and trivia competitions have increased public awareness of coastal issues.
- The MSP Unit also participated in two key international events to share Belize's progress in developing the BSOP.



MSP Forum in Bali and International Waters Conference in Uruguay

- Institutional partnerships were reinforced through participation in National Environmental Appraisal Committee site visits, written submissions on coastal developments, and educational sessions with UB students.
- Youth outreach was strengthened through the 2024 Fly Fishing Summer Camp in five coastal communities. The camp provided hands-on training in fly and spin fishing, habitat conservation, and marine stewardship, with the aim of creating a future pipeline of skilled recreational fishers and guides.



Route for run for the coast as part of the activities for Coastal Awareness Week.



Educational Sessions with the UB Students



Participants at sports fishing summer camp

National Emergency Management Organization

The NEMO is the government department responsible for the training and coordination across the public and private sector to prepare for, mitigate from, respond to, and recover from disasters. NEMO is a participating state of the Caribbean Disaster Emergency Management Agency (CDEMA) and embraces Comprehensive Disaster Management (CDM).

The NEMO's mission is to preserve life and property in the event of an emergency, threatened or real, and to mitigate the impact on the country and its people. The priority areas are as follows:

1. Enhancing Disaster Preparedness and Response
 - Strengthen early warning systems, Emergency Operations Centres, and Incident Command Structures (e.g., wildfire/hurricane responses).
 - Improve coordination with local and national agencies for rapid, effective disaster response.
2. Strengthening National and Regional Planning
 - Finalize and implement the National Relief Plan and Logistics Management Plan to streamline resource distribution.
 - Advance the CDM framework through audits, 5-year Country Work Programmes, and sector-specific plans.
3. Building Community and Youth Resilience
 - Expand outreach (e.g., school leadership teams, youth forums, public campaigns) to engage communities in disaster risk reduction.
 - Empower businesses via continuity clinics and partnerships (e.g., Belize Chamber of Commerce).

4. Investing in Training and Partnerships

- Upskill staff and stakeholders in disaster management (e.g., Incident Command System training, psychosocial first aid, Geographical Information Systems tools).
- Foster regional/international collaborations (e.g., CDEMA, Japan International Corporation Agency (JICA), United Nations International Children's Emergency Fund (UNICEF)) to share best practices and resources.

In 2024, NEMO advanced its mission to enhance disaster risk reduction, preparedness, and emergency response across Belize. Through strategic partnerships, capacity building, community outreach, and operational readiness, NEMO demonstrated resilience and adaptability in addressing multiple hazard scenarios and building national capabilities.

Enhancing Disaster Response Operations Across the Country

NEMO successfully coordinated multiple emergency operations throughout the year:

- Wildfire Response in May: The Emergency Operation Centres in Toledo and San Ignacio were activated in response to wildfires in the Toledo and Cayo Districts, leading to effective wildfire containment.
- Hurricane Beryl: The National EOC was activated, enabling a coordinated and proactive response to the impending hurricane.
- Tropical Storm Nadine: Both the National EOC and Ladyville EOC were activated to manage flooding, and storm impacts in the Belize District, ensuring a timely and effective response.

Developing Strategic Frameworks to Strengthen National Planning

- Drafting of the National Relief and Logistics Management Plans: These were developed with support from CDEMA to improve coordination and distribution of emergency supplies.
- Completion of the CDM Audit: The Comprehensive Disaster Management Audit, supported by the CDEMA, assessed Belize's capacity to address all disaster management phases and will inform future strategic resource allocation.
- Development of a 5-Year Country Work Programme: The Country Work Programme establishes a strategic plan to monitor and report on Disaster Risk Reduction efforts and outcomes, supporting a national framework for long-term CDM implementation.

Strengthening Institutional Capacity and National Preparedness

- **Plan Review and Development:** With support from UNICEF, approximately 40 national plans, including hazard-specific plans, were reviewed and updated.
- **Logistics System Audit:** In partnership with the World Food Programme, NEMO used the Supply Chain Assessment Navigator tool to identify strengths and weaknesses in national disaster logistics.
- **GIS Tools Development:** With UNICEF's assistance, GIS-based tools were created to enhance emergency shelter management and other key disaster management functions.

Building Human Capital Through Training and Skills Development

- **Incident Command Structures Training:** Three levels of Incident Command Structures training (100, 200, and 300) were completed to improve incident management across all EOC levels.
- **Staff Development with Belize Trade and Investment Development Service:** Training covered Psychosocial First Aid, Basic First Aid, Effective Communication, and Conflict Resolution to enhance public engagement and support services.
- **School Disaster Leadership Development:** A plan was developed to empower youth through school-based disaster leadership teams.
- **Business Continuity Clinics:** Three clinics were held in northern and central Belize in collaboration with the Belize Chamber of Commerce and Industry to enhance small business disaster preparedness.

Promoting Community Awareness and Youth Engagement in Disaster Risk Reduction

- **Agriculture and Trade Show Outreach:** Public awareness and demonstration of new emergency technology.
- **Youth Forum on Disaster Risk Reduction:** Held in September 2024 and early 2025 (San Pedro), offering a platform for youth to express views on Disaster Risk Reduction.
- **Hurricane Preparedness Conference:** The first conference of its kind convened government and development partners to improve national preparedness.

Fostering Regional Collaboration and Knowledge Exchange

To enhance technical expertise and strengthen partnerships, NEMO participated in a broad range of international conferences and training initiatives in 2024. These engagements reinforced Belize's regional and global connections and contributed to the professional development of NEMO personnel:

- Engaged in a Tsunami Preparedness Conference in Chile, facilitating direct collaboration with the Pacific Tsunami Warning Centre to enhance tsunami readiness strategies.
- Collaborated at the Earthquake Preparedness Conference in Nicaragua, sharing knowledge with the Central American Tsunami Advisory Centre on seismic risk management.
- Exchanged knowledge at a Disaster Risk Management Seminar in Colombia, organized by Presidential Agency for International Cooperation Colombia and the Singapore Cooperation Programme, to learn from leading DRM institutions.
- Participated in a Training of Trainers Workshop on Animals in Disasters in Panama, hosted by the Brooke Institute, focusing on the Livestock Emergency Guidelines and Standards.
- Attended a course on Understanding DRM in Mexico City, coordinated by JICA and Agencia Mexicana de Cooperación Internacional para el Desarrollo, to gain regional insights into disaster risk strategies.
- Joined the Climate Action 2030 Tabletop Exercise in Puerto Rico, supported by the US Department of the Navy, to enhance understanding of climate resilience planning.
- Engaged in policy-level dialogue during the CDEMA CDM Conference in St. Kitts, strengthening connections with the World Food Programme and the International Charter for Space and Major Disasters.
- Contributed to planning efforts for the 2024 regional disaster season during the CDEMA Technical Advisory Committee Meeting in Trinidad and Tobago.

Supporting Academic and Technological Innovation

- A Postgraduate Diploma in Disaster Risk Management developed in collaboration with Galen University and UNICEF, this program enabled over 40 public officers, including NEMO staff, to pursue advanced training in DRM.
- Humanitarian Open Street Maps Project: Mapping of four Belizean communities helped improve spatial data for emergency planning while also engaging youth.

Implementing Targeted Community Resilience Projects

- Support for Wildfire Emergency Operations: NEMO launched a targeted initiative to enhance community wildfire response, including training Community Disaster Response Teams, public outreach in Toledo, and provision of equipment to the Belize Defence Force.



NEMO staff working on Wildfire Damage Assessments in the Cayo District



District Emergency Operations Centres meeting across the country in preparation for Hurricane Beryl.



NEMO staff receiving training from BELTRAIDE on Effective Communication



National Coordinator participating at the 13th CDE



Disaster Risk Management Youth Forum 2025

National Meteorological Service of Belize

The NMS is responsible for providing aviation weather information and forecasts, and specialized weather forecasts for the agriculture, forestry, marine, military, and tourism sectors. It also provides public weather forecasts for the media, which then distributes this information via newspapers, radio and television. Forecasts are also regularly distributed and updated on the department's website.

As the leading governmental authority on weather and climate, the NMS's mission is to provide meteorological and climate-based products and services to the Belizean public through systematic and accurate data monitoring and collection, reliable data analyses and forecasts, and timely dissemination of user-friendly reports and forecasts on all weather and climate-related events and hazards. This is undertaken to contribute to the safety and well-being of the people of Belize and the sustainable development of the nation.

The priority areas are as follows:

1. Strengthening Weather Forecasting and Early Warning Systems

- Improve accuracy and reliability of weather forecasts and climate services.
- Expand multi-hazard impact-based forecasting (e.g., Belize River Watershed project) to better prepare for disasters.
- Enhance public access to weather information through mobile apps, websites, and media.

2. Modernizing Weather Observation Infrastructure

- Upgrade and maintain weather stations, radar systems, and data networks (e.g., 35 new stations under Energy Resilience for Climate Adaptation Project).
- Secure funding (e.g., Systematic Observing Financing Facility (SOFF) grant) to improve observation systems and fill gaps (e.g., Caye Caulker's first weather station).
- Strengthen Information Technology security to protect critical weather data.

3. Building Human and Institutional Capacity

- Continue staff training in forecasting, disaster risk management, and climate policy (e.g., Caribbean Institute for Meteorology and Hydrology (CIMH), New Zealand courses).
- Strengthen institutional frameworks (e.g., legal establishment through Cabinet approval).
- Use data (e.g., socio-economic analysis) to justify investments in the NMS.

4. Supporting Climate Resilience and Sustainable Development

- Provide specialized forecasts for agriculture, aviation, tourism, and disaster management.
- Secure and manage international funding (e.g., Caribbean Development Bank, Caribbean Action for Resilience Enhancement Programme, SOFF) for climate adaptation projects.
- Demonstrate the economic value of meteorological services.

The NMS significantly advanced its mandate during the 2024–2025 FY through capacity building, infrastructure enhancement, digital innovation, and multi-sectoral service delivery. These achievements have improved weather and climate services for the Belizean public and contributed to disaster risk reduction, sustainable agriculture, and aviation safety.

Strengthening Human Resource Capacity Through Education and Training

NMS enhanced its human resources by supporting advanced academic training and expanding in-house knowledge.

- Two officers pursued postgraduate studies in Disaster Risk Management and Climate Change Policy in New Zealand, while another two continued formal forecasting training at CIMH in Barbados.
- Staff also participated in a wide range of workshops, webinars, and refresher courses, including practical training sessions for out-district weather observers. Additionally, three new entry-level staff members successfully completed in-house training in meteorological observations, boosting the department’s operational strength.

Enhancing Public Services and Digital Innovation

- Service delivery was elevated with the launch of NMS’s first mobile weather application, available for Android users.
- The app provides real-time data from automatic weather stations across Belize and delivers various types of forecasts directly to users.
- The department also initiated a project focused on implementing Multi-Hazard Impact-Based Forecasting in the Belize River Watershed, which was approved by the Caribbean Development Bank under the Caribbean Action for Resilience Enhancement Programme and scheduled for rollout in FY 2025–2026 with a total budget of BZD 2.46 million.
- Further progress was made when Belize became one of the first countries to receive support from the SOFF, securing BZD 1,506,000 to enhance its observation network and institutional capacity.

Expanding and Modernizing Meteorological Infrastructure

- NMS significantly expanded its infrastructure by installing 35 new weather stations under the Energy Resilience for Climate Adaptation Project, including the first-ever station in Caye Caulker.
- Through support from the Capital II budget and funding from the Resilient Rural Belize Programme and the Climate Resilient and Sustainable Agriculture Project (CRESAP), the department procured critical spare parts for its Doppler radar and other weather stations.
- In addition, computer network security was improved through the installation of a firewall, and IT personnel received training in cybersecurity protocols via the Resilient Rural Belize Programme.

Promoting Institutional Strengthening and Policy Development

The department continued to strengthen its institutional foundation. A Cabinet paper proposing the legal establishment of the NMS was submitted and endorsed, marking a major policy milestone. A socio-economic analysis conducted with support from the UK Met Office demonstrated that every dollar invested in the NMS yields a return between BZD 3.30 and BZD 6.80, emphasizing the substantial national value of meteorological services.

Increasing Sectoral Impact Through Forecast Products and Outreach

- NMS expanded its impact across multiple sectors by producing thousands of weather and climate forecast products.
- General weather forecasts and alerts were issued 1,929 times, reaching nearly the entire Belizean population and visitors (872,994 reach) through media broadcasts, the NMS website, Facebook, and the new mobile app.
- In aviation, the department provided 1,460 forecasts that supported over 34,000 domestic and international flights, ensuring the safety of approximately 1.2 million passengers. Marine forecasts were issued 730 times, benefiting over one million users including fishermen, tour operators, and maritime transport providers. Meanwhile, 128 agrometeorological forecasts, seasonal outlooks, and monthly summaries were shared with approximately 300,000 people, primarily supporting farmers and decision-makers in agriculture, energy, and water management.

Advancing Strategic Projects to Improve Service Delivery

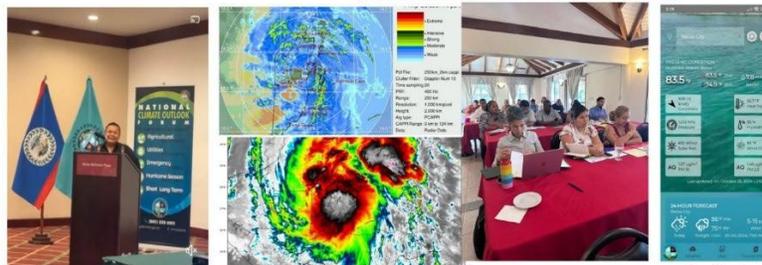
NMS led the implementation of multiple ongoing projects designed to improve service delivery and climate resilience.

- Through the Resilient Rural Belize Project, the department continued developing a Climate Information System to assist small farmers with planning and reduce climate-related losses.
- Similarly, the CRESAP, funded by the World Bank, provided critical support to improve agricultural productivity in the face of extreme weather.
- A pilot Multi-Hazard Impact-Based Forecasting project, funded by the Caribbean Development Bank and Government of Belize, is being launched in Belize City and the Belize River Watershed to deliver timely and hazard-specific warnings.
- In addition, SOFF funding will upgrade the country's observation infrastructure and enhance staff training.
- The department also participated in the Enabling Belize's Statistical System initiative, aimed at modernizing the country's national data infrastructure through collaboration with Korea International Cooperation Agency and United Nations Development Program.



Upper Left: Ms. Shanea Young, Senior Climatologist, representing Belize at the 61st Session of the Intergovernmental Panel on Climate Change in July 2024.

Lower Right: Mrs. Shanika Matura attending a training workshop in the installation of local weather forecasting model.



Upper Left: Mr. Ronald Gordon, Chief Meteorologist, presenting a live television weather forecast during the approach of Hurricane Beryl

Upper Right: A local Television station alerting viewers of the upcoming joint press conference between the NMSB, NEMO and Hydrology on Hurricane Beryl

Lower left: CEO Kennedy Carillo delivering the Opening Remarks at the Annual National Climate Outlook Forum in June 2024

Lower Center 1: Radar and Satellite Imagery of Tropical Storm Nadine as it approached Belize

National Fire Service of Belize

The NFSB mission is to create a safer Belize from fires and explosive hazards for its people through public education and highly trained personnel working in cooperation with other relevant agencies and organizations.

The priority areas are as follows:

1. Enhancing Emergency Response Capabilities
 - Expand and improve firefighting, rescue, and Emergency Medical Services (EMS) across all districts.
 - Strengthen disaster preparedness for extreme weather events (e.g., wildfires, floods).
2. Investing in Personnel and Training
 - Continue promotions, leadership training, and recruitment to address staffing needs.
 - Provide specialized training (e.g., high-angle rescue, paramedic skills) to improve emergency outcomes.
3. Modernizing Operations and Infrastructure
 - Digitize inspections and equip officers with technology (e.g., tablets) for efficiency.
 - Upgrade fire stations, equipment, and dispatch systems for faster, safer responses.
4. Strengthening Public Safety Partnerships
 - Collaborate with agencies (e.g., NEMO, United States (U.S.) Embassy, NGOs) for resources and training.
 - Increase public education on fire prevention, road safety (e.g., motorcycle accidents), and emergency preparedness.

The NFSB achieved significant administrative, operational, and institutional milestones during the 2024/2025 FY. Under the newly assigned MBEDRM, the department undertook extensive reforms and initiatives to expand its service delivery, strengthen its human capital, and enhance its emergency and rescue operations.

Enhancing Operational Capacity Amid Rising Emergencies

- The operational challenges of 2024/2025 were significant, particularly due to prolonged dry conditions that led to large-scale wildfires, especially in the southern districts. The scale of the crisis necessitated the activation of NEMO to provide additional resources.

- The department also responded to a notable increase in severe motorcycle accidents, highlighting the need for expanded public awareness campaigns.
- NFSB conducted a comprehensive three-month firefighter training program, graduating 24 new recruits who were deployed across various stations. Another cohort has already begun training.
- Additionally, firefighters continued to deliver building inspections, emergency planning support, and fire extinguisher use training for government offices and private businesses.
- Digitization of inspection reports has begun, and officers will soon be equipped with tablets for real-time reporting and faster response.
- Community engagement also remained strong, with fire stations participating in “Child Stimulation Month” activities to promote fire safety awareness among young children.
- The National Rescue Team underwent high-angle rescue training with Empact International and later successfully rescued two tourists from floodwaters in the Mountain Pine Ridge area.
- The dispatch service continued to evolve. Volunteers, who had been assisting for several years, were officially appointed to new positions.
- The 990-emergency dispatch service has since enabled real-time coordination of emergency calls, integration with hospital systems, and tracking of emergency response vehicles to reduce response times.

Expanding EMS to New Regions

- The EMS program in the Cayo District has become one of the department’s most vital services, surpassing even fire-related calls. In 2024/2025, EMS was successfully expanded to the Corozal District following the training of additional firefighter-medics. Plans are in place to launch EMS operations in the Orange Walk District within the next few months.
- A major milestone for the EMS team was the return of a firefighter from Virginia, USA, where he became the first department-certified paramedic. He now supports the Cayo District operations and trains new EMS personnel.

Upgrading and Renovating Fire Station Infrastructure

- Significant improvements were made to several fire stations. Renovation works were completed at the San Pedro and Ladyville Fire Stations, including upgrades to roofing, electrical and plumbing systems, and the installation of energy-efficient lighting. The Placencia station was relocated to a more secure and stable temporary site, greatly improving working conditions for staff.

- Additionally, a new fire station was constructed in Independence Village through a collaboration with NEMO, utilizing land near their warehouse. This strategic placement supports better emergency coverage in the southern region.

Fostering Local and International Partnerships

- The Belize Heroes organization continued to be a strong partner, helping secure a new ambulance via the U.S. Denton Program, along with key EMS equipment and supplies. This organization has played a crucial role in the expansion of both the EMS and Dispatch services.
- Collaboration with the U.S. Embassy's Security Cooperation Office also contributed to the continued development of the department's rescue operations. The embassy provided technical support, equipment, and training to bolster the capabilities of rescue teams.



Attending to the bush fires



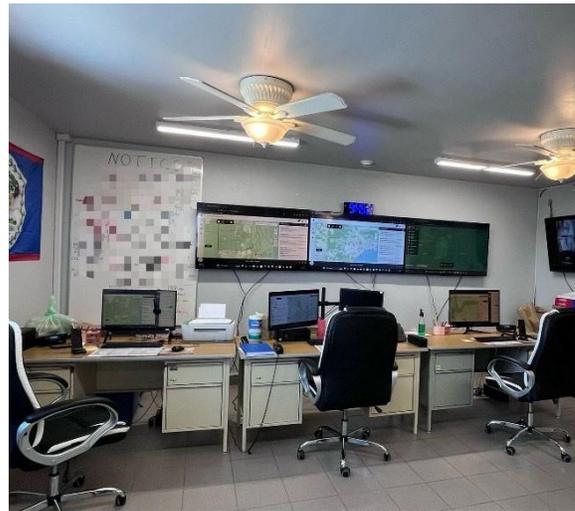
Firefighters in Training



EMS training



990 Outreach



Emergency Communications Center

Lessons Learnt

Blue Economy Unit

- The 2024/2025 FY offered critical lessons that will inform the Unit’s strategic planning for 2025/2026:
- The absence of a comprehensive legal framework specific to the blue economy hindered coordinated management and investment readiness. Developing an enabling legislative environment is a priority.
- Several initiatives revealed a lack of clear roles and responsibilities, resulting in delays and duplication. This underscores the need for formalized partnerships, robust Memorandum of Understanding, and improved coordination mechanisms across marine stakeholders.
- Relying on traditional funding alone is insufficient. Forming strategic partnerships and seeking diverse funding, including innovative mechanisms for blue economy investments is vital for long-term success.
- Having general awareness of blue economy development is a starting point, but achieving tangible results requires a more strategic approach. Awareness campaigns must be more impact-oriented and targeted emphasizing the benefits and sustainability of the blue economy.
- Projects such as the Ocean Accounts Pilot and the OCPP exposed weaknesses in national data systems, including fragmented collection, inconsistent methodologies, and limited protocol sharing. Addressing these requires investment in marine data infrastructure and capacity-building for standardized monitoring.
- Staffing shortages, due to leave and resignation, stretched the Unit’s capacity. Strengthening human resources, particularly in resource mobilization, is vital to meet growing operational demands.

Belize Fisheries Department

- Key insights from the reporting period highlighted operational and compliance challenges that informed us of future improvements:
- Early communication with developers and communities could have mitigated non-compliance issues. Clearer permitting guidance and outreach are needed.
- The barge grounding incident emphasized the need for maintained navigational markers and stricter enforcement of vessel access in marine protected areas.
- While joint inspections were conducted, the absence of structured follow-ups reduced impact. A shared inspection reporting and tracking system is recommended.

- Short-term assessments are not sufficient to capture long-term ecological impacts such as cumulative damage to seagrass beds and nesting sites. Sustained monitoring capacity is needed.
- Some stakeholders lacked awareness of regulatory requirements, reinforcing the need for targeted education and compliance campaigns.

Coastal Zone Management Authority and Institute

- Despite achieving key deliverables, CZMAI encountered systemic and operational challenges:
- Limited staffing affected the implementation of sport fishing management activities. Partnerships with Environmental Defense Fund and UB students helped bridge gaps during key events.
- Leading activities under Milestones 4, 5, and 6 of the Blue Bonds Conservation Commitments presented coordination challenges. The establishment of the MSP Unit was a critical step forward, though demand remains high.
- A comprehensive terms of reference was developed to contract external support for updating the ICZMP and CZM Act, reflecting the importance of structured external engagement to meet deadlines.
- Despite resource constraints, CZMAI met its annual operation plan targets and self-rated overall progress as satisfactory.

National Emergency Management Organization

- Lessons learned in 2024/2025 revealed key areas for capacity enhancement:
- A more robust understanding and analysis of potential threats is essential for proactive planning.
- Current practices need refinement to enable faster and more effective response during crises.
- Emergency preparedness should be mainstreamed at all institutional levels to ensure readiness.
- Sustained and expanded collaboration with local, regional, and international partners remains a strategic priority.
- Proposal development must continue to bridge critical funding gaps and strengthen program implementation.

National Meteorological Service of Belize

- The NMS reflected on capacity and collaboration as central themes during the reporting year.
- The implementation of projects is constrained by a shortage of multi-disciplinary expertise within the department.
- Partnerships with the Climate Finance Unit and the National Climate Change Office proved essential in executing climate-related projects.
- Having a well-defined Annual Operational Plan is crucial, but further development is needed in monitoring and evaluation to support effective project delivery.

National Fire Service of Belize

- The transition to the MBEDRM marked a period of transformation:
- Integration into the new ministry led to the creation of essential administrative posts, including an accounts unit, and improvements in procurement processes—enabling acquisition of urgently needed equipment.
- The intense dry season and increased brush fire incidents highlighted the need to expand fire prevention and containment services to peri-urban areas.
- Collaboration with NEMO has been instrumental in securing training and equipment to address emerging fire threats.
- These changes encouraged a shift in planning practice and reinforced the need for forward-looking strategies to meet evolving service demands.

Future Priorities and Plans

Blue Economy Unit

- Building on a year of foundational progress and lessons learned, Belize's BEU is set to enhance existing programs and launch initiatives aimed at advancing sustainable blue economy development in line with the Plan Belize. The focus for the upcoming year and the medium term will be on strengthening the institutional and legislative framework for the Blue Economy, fostering greater collaboration, building capacity, and mobilizing resources to ensure the long-term health and prosperity of Belize's vital marine and coastal resources. Last year's efforts highlighted the need for coordinated planning, addressing institutional gaps, sustainable financing, and continuous capacity building at all levels.
- Looking ahead and building on these achievements and insights, the BEU will make strategic additions and changes to the following existing programmatic areas.
- A key focus will be on expediting the remaining steps for the enactment of comprehensive Blue Economy legislation. This will involve targeted consultations with targeted stakeholders and policymakers to address any outstanding issues and ensure the legislation provides a robust framework for sustainable development activities.
- While collaboration has been ongoing, a key change will be the formalization of coordination mechanisms. This includes establishing regular inter-ministerial coordination groups with clear mandates and reporting lines, as well as developing a centralized platform for sharing information and coordinating activities among government agencies, NGOs, the private sector, academia, and communities involved in the blue economy. The lessons learned about the need for coordinated planning will directly inform this enhanced approach.
- Recognizing the critical need for human resources, the priority is to swiftly fill the vacant Blue Economy Officer position. Additionally, a staff expansion request will be actively pursued, potentially prioritizing roles identified as essential for the implementation of key strategic areas. This addresses the lesson learned regarding capacity limitations.
- The strategic partnership with the Belize Fund for a Sustainable Future is crucial for sustainable financing. The focus will be on finalizing the proposal to leverage the fund effectively for priority blue economy initiatives. Adjustments will be made to ensure alignment with national blue economy goals and Plan Belize and includes shortening timeframe for course development, preparation and delivery; reassessing the number of target beneficiaries impacted to the overall investment; prioritizing engagement with community-based organization, grassroots organizations, private entities, and emerging NGOs; and including small grants application support as a target training indicator.
- Although awareness campaigns have been pursued, they will be greatly improved to focus on impact. This will involve creating a long-term communication strategy that uses various

media channels, including community radio, social media platforms, and educational resources. A significant new element will be impact-reports and targeted awareness initiatives aimed at specific groups of stakeholders, such as fisherfolk, tourism operators, and young people, emphasizing the advantages of the blue economy and their contribution to its sustainability.

- With the Blue Economy Development Policy and Strategy in place, the next step is to focus on actionable implementation plans. This will require dissecting the strategy into concrete, time-bound actions with assigned responsibilities and key performance indicators. A notable change will be the creation of a specialized mechanism for tracking implementation to oversee progress, pinpoint obstacles, and provide recommendations for modifying strategies, as necessary. This will address the lesson learned regarding the need for coordinated implementation.
- Building on existing efforts, resource mobilization will be intensified. This involves actively pursuing funding opportunities from international donors, multilateral development banks (like the recently approved World Bank Blue Cities and Beyond project) and exploring innovative financing mechanisms such as blue carbon and payments for ecosystem services. A key addition will be the creation of incentive packages for Blue Economy industries and investments, which will highlight prospective projects to draw in both public and private sector funding.

Belize Fisheries Department

- Building upon lessons from 2024/2025, the BFD will enhance marine and coastal ecosystem protection through proactive management, improved compliance, and strengthened collaboration.
- The Department will maintain its commitment to the Blue Bond Agreement and international fisheries obligations, collaborating with regional and international organizations (Organización del Sector Pesquero y Acuícola del Istmo Centroamericano, Caribbean Regional Fisheries Mechanism, Western Central Atlantic Fishery Commission, FAO, UN, etc.) to secure additional funding, staff training, and resources for fisheries research, Monitoring, Control, and Surveillance. Belize will prioritize becoming a party to the FAO's Port State Measures Agreement to demonstrate its commitment to combating Illegal, Unreported, and Unregulated fishing.
- The Department will continue to support the Inter-American Development Bank-funded "Promoting Sustainable Growth in the Blue Economy Program" (BL-L1042), overseeing its key components, including the 2025 stock assessments for spiny lobster, queen conch, and finfish, which are expected to significantly benefit the fishing industry.
- A primary focus for 2025 is streamlining management operations, including departmental restructuring to optimize human and material resources, as well as an increase in budgetary allocations. This includes leveraging technology for fisheries enforcement and monitoring

of commercial fishing operations, and strengthening institutional capacity through technical training in GIS, Monitoring, Control, and Surveillance, fisheries data collection, stock assessment (shallow and deep water), and ecosystem assessment, including seagrass bed Carbon dioxide sequestration potential.

- Determining fish biomass availability and correlating fishing effort for commercially important fisheries in each fishing area remains a management priority.
- Increased joint operations with law enforcement agencies and co-management partners are planned for 2025. The development and national implementation of the National Fisheries Enforcement & Conservation Monitoring Strategy & Action Plan (2026-2031) in 2025 will provide a comprehensive approach to enforcement in Belize's marine environment. This plan will include a standardized training guide for professionalizing enforcement capacity building.
- Priority areas remain in southern Belize and the atolls. Ongoing monitoring will continue in southern areas identified as transboundary illegal fishing hotspots, especially during closed seasons. Improvements are anticipated in 2025 with the procurement of additional vessels, refurbishment of existing vessels, purchase of engines and maintenance supplies, uniforms, tactical gear, and staff training.

Key enhancements for the Department include:

- Expanded Compliance and Education: Increased outreach to developers and communities, with assistance from NGOs and local councils, to improve regulatory awareness and reduce violations.
- Improved Inter-Agency Coordination: Utilizing digital platforms like SMART to enhance communication and reporting for inspections and assessments.

Coastal Zone Management Authority and Institute

- Building on the work established in the previous year, the CZMAI is set to focus on several key priorities for the upcoming 2025/2026 FY. Foremost among these is the completion of the comprehensive update of the ICZMP, alongside the revision of the CZM Act. Both initiatives are targeted for finalization by November 2025 and are critical to achieving Milestone 5 of our strategic objectives.
- In addition to this, we aim to advance our efforts towards Milestone 6. This includes the development of the BSOP, which is designed to ensure the sustainable use and conservation of our marine resources. A significant component of this plan is the commitment to expanding biodiversity protection zones to encompass 30% of our coastal and marine environments. This ambitious target reflects our national priorities as articulated in the Belize Blue Bonds

Conservation Agreement, emphasizing the need for enhanced protection of our unique biological diversity.

- By focusing on these initiatives, the CZMAI aims not only to manage our coastal resources more effectively but also to bolster our commitment to environmental sustainability and the health of Belize's marine ecosystem.

National Emergency Management Organization

- Following the groundwork laid in the previous year, the NEMO is now operating under a newly established Ministry, which enhances its authority and support for disaster management initiatives. NEMO is focusing its future efforts on the comprehensive implementation of the National Disaster Preparedness and Response Plan. This strategic plan aims to bolster the nation's resilience against natural disasters, ensuring efficient coordination and responsiveness during emergencies. NEMO is also dedicated to advancing the 5-Year Country Work Programme, which outlines specific objectives and actions to improve disaster preparedness and recovery processes.
- By integrating these initiatives, NEMO aspires to create a more robust framework for safeguarding communities and minimizing the impact of disasters across the nation.

National Meteorological Service of Belize

Building on last year's efforts, the NMS, now functioning under a newly established Ministry, is concentrating on continued institutional capacity development, strengthening governance, and enhancing meteorological services and infrastructure. The key areas of focus include the following.

- Continued capacity development:
 - Training of three additional weather forecasters
 - Training for a radar technician
 - Training for two officers in instrument maintenance and applied meteorology
 - Training for two officers at the bachelor's and master's degree level in Meteorology and applied Meteorology
- Complete restructuring, updating job descriptions and review of pay scales with the Job Classification and Compensation Unit
- Strengthening governance:
 - Passage of Bill to legally establish the NMS of Belize
- Enhancing Service and Infrastructure:

- Development of multi-hazard impact-based forecasting including development of hazard maps
- Continued development of the Climate Services section and the establishment of the National Framework for Climate Services
- Further roll-out of the Common Alerting Protocol
- Continued maintenance of weather stations
- Further development of Mobile App to include extending it to IOS/Apple platform and development of additional features including automated features to downscale weather forecasts to the community level at more frequent intervals
- Re-launching of television weather broadcasts
- Deployment of the local Weather Research and Forecast Model
- Procurement of a satellite receiver and training in satellite meteorology for weather forecasting staff

National Fire Service of Belize

- Now under a new Ministry, we are excited about the future and eager to enhance our services. Expanding EMS to the Orange Walk District and Belize City will significantly improve care and service to the people of Belize, transforming the perception of the NFSB and establishing us as a crucial emergency service provider.
- With the ongoing growth in villages and towns, the NFSB is focusing on strategic expansion to new areas with new stations and equipment. Large villages such as Ladyville and Belize Rural area now require more attention due to population growth and should be a focus for the coming year.
- Modernizing our fleet is also essential. Securing at least two government-funded fire trucks annually would enable us to retire aging vehicles. This would also assist in improving our operational capabilities.
- The digitization of our records through the NeoPeople software is ongoing and progressing. Full completion, including the facial recognition portal is expected by the end of 2025.

Staffing and Financial Considerations

Blue Economy Unit

The BEU continues to work towards its objectives with a team of five staff: a Director of Blue Economy, a Senior Blue Economy Officer, a Monitoring and Evaluation Officer and two Blue Economy Officers. The team remains committed to carrying out the Ministry's mandate while improving on internal processes despite the need to improve on aligning strategic priorities within budgetary constraints and staffing limitations and the need to improve budget oversight and execution. Considering these constraints, the BEU has relied heavily on project-based and partner-driven funding to support most of its technical programming.

Strengths

- The BEU team remains committed to advancing Belize's blue economy objectives, despite operational challenges.
- There are ample opportunities for capacity building among staff, though these need to be better aligned with the unit's operational needs to maximize effectiveness.
- The BEU team maintains strong technical expertise, which is essential for advancing key initiatives.

Weaknesses

- The absence of a legal framework limits the unit's ability to drive sector-wide coordination and impactful collaboration.
- Insufficient high-level governance engagement slows decision-making and policy implementation.
- Budget execution remains a challenge due to a lack of structured guidance, and limited staff initiative in driving activities from planning to execution.
- Limited financial resources for training, operational functions and program implementation hinder the unit's ability to meet its full potential.

Desired Changes

a) Human Resources

To strengthen the BEU's effectiveness, the recruitment of additional personnel to support core functions is recommended:

- Two additional Blue Economy Officers to enhance technical implementation.

- One Assistant Blue Economy Officer to support administrative and program tasks.
- One Communications and Public Outreach Officer to improve stakeholder engagement and visibility.
- One dedicated driver to facilitate staff mobility for fieldwork and coordination.

b) Financial Resources

- Increased recurrent budget (by at least 50%) for Strategic Management and Administration to support day-to-day operations.
- Higher allocation for Capital II programs to fund critical blue economy projects and initiatives.
- Clearer budget alignment with priorities to ensure funds are utilized effectively for policy implementation.

c) Other Considerations

- Enactment of Blue Economy legislation to provide a clear legal mandate and operational framework.
- Development of regulations and policies to guide implementation and sector coordination.
- Provision of operational resources, including a vehicle and fuel allocation for field operations.

Belize Fisheries Department

The BFD plays a crucial role in marine resource management and conservation. While it has several strengths, there are also challenges that, if addressed, could significantly improve its efficiency and effectiveness. Below is an analysis of the current situation, followed by recommendations for improvement.

Strengths:

1. Skilled and Collaborative Staff
 - The Department has technical officers with strong collaboration across different units, fostering teamwork and knowledge-sharing.
2. Stable Core Funding
 - The Department receives consistent government funding, supplemented by external grants.
3. Adequate Field Equipment & Infrastructure

- Basic operational tools and infrastructure are in place for fieldwork and enforcement.
4. Recent Staffing Improvements:
- The Amnesty Program (March 2025) allowed 22 open-vote workers to gain permanent status, improving job security.
 - Four new staff members were hired in 2025, filling critical roles in marine reserves.

Weaknesses

1. Human Resource Challenges:

- Skill Gaps: Lack of expertise in specialized areas such as GIS analysis and environmental law.
- Understaffing: Key positions remain vacant (e.g., biologists, rangers, assistant coxswains), leading to overburdened employees.
- Limited Succession Planning: No clear strategy for replacing senior staff, risking leadership gaps.
- Insufficient Training: Few opportunities for professional development, especially in leadership and management.

2. Financial Constraints

- Dependence on Unpredictable Funding: Heavy reliance on donor funds, which may not be sustainable.
- Limited Budget for Technology: Aging equipment and slow acquisition of modern tools (e.g., drones, SMART devices).

3. Operational Inefficiencies

- Security Staff Overworked: Watchmen work long shifts (7+ days without breaks) and lack proper security training.
- Enforcement Challenges: Understaffing makes it difficult to monitor fishing activities and marine reserves effectively.

Desirable Changes for Improvement

a) Human Resources

1. Recruitment & Retention Strategies

- Fill vacant positions promptly, especially in marine reserves and enforcement roles.
- Offer competitive salaries and benefits to attract skilled professionals.

2. Training & Capacity Building

- Provide continuous training in GIS, environmental law, and leadership.
- Implement mentorship programs to prepare junior staff for leadership roles (succession planning).

3. Workload Management

- Redistribute tasks to prevent burnout.
- Convert watchmen to trained security guards with proper weapons handling certification.

b) Financial Resources

1. Diversify Funding Sources

- Seek partnerships with NGOs, private sector (eco-tourism), and international grants.
- Develop revenue-generating initiatives (e.g., visitor fees for marine reserves).

2. Prioritize High-Impact Investments

- Allocate funds for technology upgrades (drones, SMART devices, data analysis tools).
- Modernize aging equipment to improve efficiency.

c) Other Important Considerations

1. Improved Technology & Equipment

- Invest in modern monitoring tools (e.g., drones for surveillance, digital reporting systems).
- Upgrade communication systems for better coordination.

2. Stronger Enforcement & Compliance

- Increase patrols in marine reserves with additional rangers.
- Strengthen partnerships with the Coast Guard for better enforcement.

3. Employee Well-being & Engagement

- Ensure fair shift rotations for field staff to prevent exhaustion.
- Encourage staff involvement in decision-making to boost morale.

Coastal Zone Management Authority and Institute

CZMAI plays a critical role in Belize's sustainable coastal development, balancing conservation, economic livelihoods, and climate resilience. Below is an analysis of its strengths, weaknesses, and recommended improvements in human resources.

Strengths

- Dedicated staff with expertise in marine science, policy, and community engagement.
- Strong partnerships (e.g., universities, NGOs, international donors) providing technical support.

Weaknesses

- High turnover in key positions due to limited career growth and competitive salaries.
- Understaffing in critical areas (e.g., sport fishing management, marine spatial planning).
- Workload imbalance, with staff stretched thin across multiple high-priority projects.
- Heavy reliance on external funding, creating uncertainty for long-term planning.
- Limited core budget for operational costs (e.g., staff retention, equipment maintenance).

Desirable Changes

a) Human Resources

1. Stabilize Workforce & Reduce Turnover
 - Improve staff retention through competitive salaries, career development opportunities, and clear advancement pathways.
 - Implement succession planning for critical roles to ensure continuity.
2. Expand Technical & Field Staff
 - Hire additional personnel for key programs (e.g., Sport Fishing Unit, MSP Unit, compliance monitoring).
 - Strengthen training programs to enhance technical skills (e.g., GIS, policy analysis, community engagement).
3. Enhance Leadership & Coordination
 - Strengthen management capacity to oversee multiple projects efficiently.
 - Foster inter-departmental collaboration to avoid duplication of efforts.
 - Strengthen grant management systems to ensure timely and effective use of funds.

National Emergency Management Organization

NEMO is the lead government agency responsible for disaster preparedness, mitigation, response, and recovery in Belize. While NEMO has a clear mission and structured priorities, it faces challenges in human resources, financial limitations, and long-term planning. Strengthening these areas is crucial to fulfilling its mandate effectively.

Strengths

- Dedicated staff committed to disaster management.

Weaknesses

- Slow implementation of plans due to funding and staffing gaps.
- Limited specialized training – Only two staff members hold academic degrees in disaster management.
- Chronic underfunding – Budget constraints limit investments in preparedness and mitigation.
- Limited community engagement in some areas, reducing local resilience.
- Technological gaps – Need for better early warning systems, GIS tools, and data management.
- Dependence on external training – Most capacity-building happens through regional programs rather than local institutional development.

Desirable Changes:

- Higher Government Budget Allocation to fund the implementation of the 2025-2030 Country Work Programme.
- Diversify Funding sources – Seek grants from international donors (e.g., United Nations Development Program, World Bank, United States Agency for International Development) for specific projects (e.g., warning systems, community resilience programs).

National Meteorological Service of Belize

The NMS plays a fundamental role in Belize by providing weather forecasts, early warnings, and specialized climate services for aviation, agriculture, disaster management, and other key sectors. Despite its importance, the NMS faces challenges in human resources, funding, and infrastructure that hinder its ability to fully meet growing demands.

Strengths

- Long-serving staff possess valuable expertise in Belize’s unique weather patterns and climate risks.

Weaknesses

- There is a critical lack of trained meteorologists, forecasters, and technical personnel, limiting the NMS’s ability to expand services.
- Inadequate Pay Scales: Salaries for technical staff do not match their qualifications or responsibilities, leading to low morale and difficulty retaining talent.
- Limited Training Opportunities
- Insufficient Operational Budget: Current funding does not cover equipment maintenance, IT upgrades, or expansion of services.
- Dependence on External Grants: While international funding helps, long-term sustainability requires stronger government investment.
- Lack of Capital Investment: Aging equipment, insufficient field vehicles, delays in replacing faulty weather station parts reduce efficiency.

Desirable Changes

a) Human Resources

1. Increase Staffing Levels

- Hire additional meteorologists, forecasters, and IT specialists to improve service delivery.
- Expand internship and apprenticeship programs to build a talent pipeline.

2. Improve Salaries and Incentives

- Revise pay scales to reflect technical skills and qualifications, ensuring competitive compensation.
- Introduce performance-based incentives to retain skilled personnel.

3. Enhance Training and Development

- Secure more government scholarships for meteorology and applied climatology studies.
- Partner with international institutions (e.g., CIMH, World Meteorological Organization) for advanced training.

b) Financial Resources

1. Increase Government Funding
 - Advocate for a larger annual budget based on socio-economic benefit analyses.
 - Allocate dedicated funds for equipment maintenance and IT security upgrades.
2. Diversify Funding Sources
 - Strengthen partnerships with regional and international donors (e.g., Green Climate Fund, United Nations Development Program).
3. Prioritize Capital Investments
 - Secure funding for new weather stations, radar upgrades, and field vehicles.
 - Establish a reserve fund for emergency equipment repairs.

National Fire Service of Belize

The NFSB focus on fire prevention, emergency response, and public safety. Recent improvements include expanded EMS services, new administrative structures, and better procurement processes. However, challenges remain in staffing, equipment modernization, and financial sustainability.

Strengths

- Growing Workforce: The NFS has 179 personnel, with approval to recruit 80 additional firefighters, improving response capabilities.
- Recent procurement improvements have allowed the acquisition of needed equipment.

Weaknesses

- While regional training is planned, budget constraints may restrict the number of personnel who can attend.
- Dependence on Government Funding: Most equipment purchases (e.g., fire trucks) rely on government budgets, with delays (last government-funded truck acquired over 20 years ago).
- Limited self-generated revenue: Fee structures (e.g., inspections, EMS charges) are still pending approval, leaving funding uncertain.
- Many fire trucks are outdated, affecting response efficiency.
- Some stations (e.g., San Ignacio, Placencia, Punta Gorda) still lack permanent facilities.

Desirable Changes

- a) Human Resources

1. Accelerate Administrative Hiring: Ensure new clerks and finance staff are onboarded alongside firefighters to manage increased workload.
 2. Expand Training Access: Secure partnerships (e.g., regional fire academies, international donors) to train more personnel in leadership and technical skills.
 3. Career Development Programs: Implement structured promotion pathways with mandatory training to prepare future leaders.
- b) Financial Resources
1. Approve and Implement Fee Systems:
 - Fast-track approval for building inspection fees (Trade Licenses, Belize Tourism Board, Liquor).
 - Introduce a small surcharge (e.g., \$0.50 on water bills) to fund equipment and training.
 2. EMS Cost Recovery: Formalize billing agreements with insurance companies for accident responses.
- c) Other Key Considerations
1. Modernize Equipment & Infrastructure:
 - Acquire at least two new fire trucks annually to phase out outdated units.
 - Complete digitization of records (NeoPeople software) and expand tech use (e.g., tablets for inspections).
 2. Expand Station Coverage:
 - Prioritize construction of permanent stations in Ladyville, San Ignacio, Placencia, and Punta Gorda.
 - Relocate the Marion Jones Stadium station to the new Chetumal Street headquarters.
 3. Strengthen Community & Partnerships:
 - Increase public fire prevention campaigns, especially in expanding rural areas.
 - Enhance collaboration with NEMO, Belize Tourism Board and NGOs for disaster preparedness.

Budget Distribution

Annex 2 outlines the approved budget distribution for the Capital Budget (CAP) II Programs executed in FY 2024/25 and the proposed estimates for CAP II Programs for 2025/26.

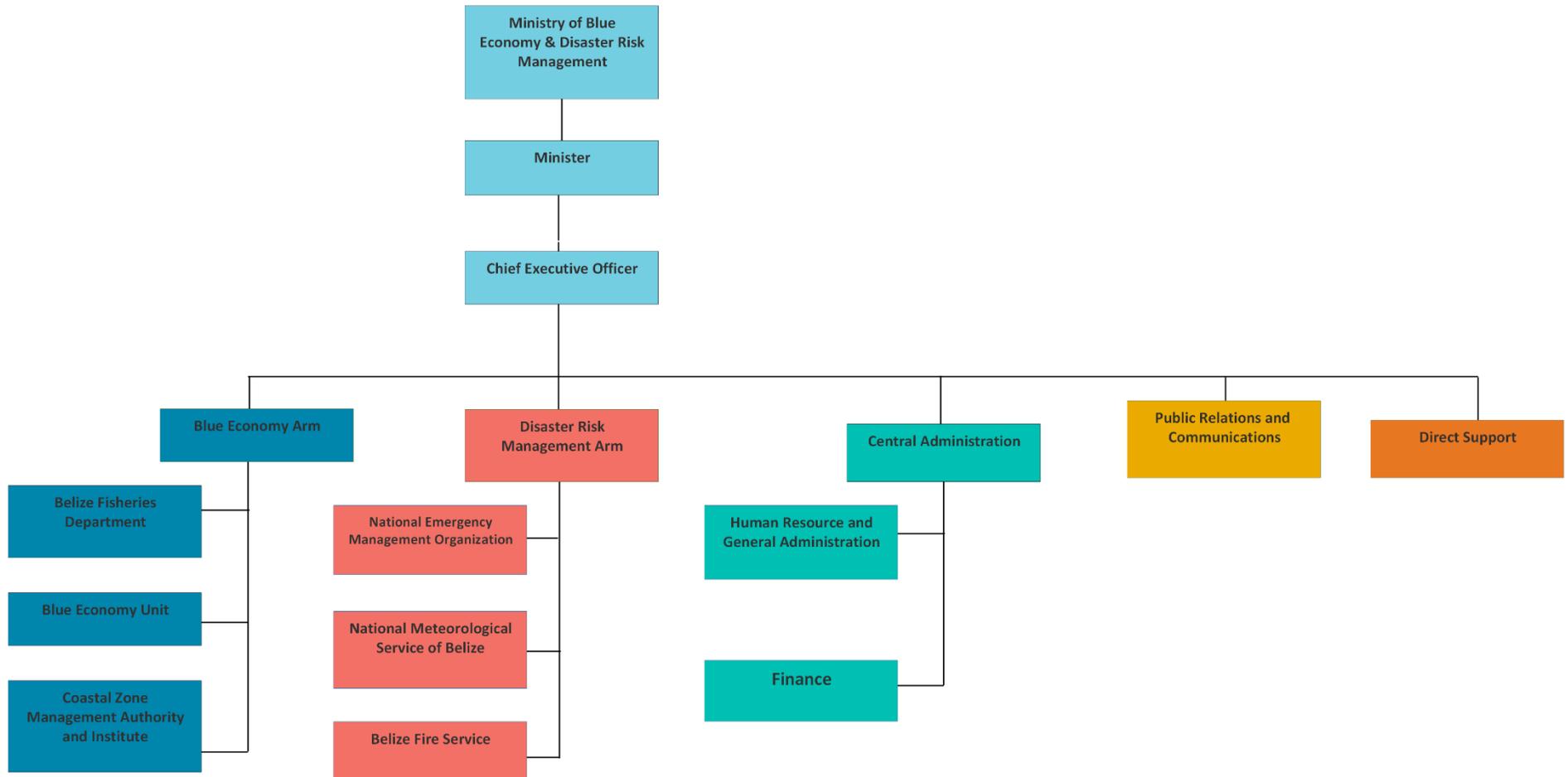
Conclusion and Recommendations

The MBEDRM concludes another dynamic year. The Ministry's work continues to demonstrate that economic growth, environmental conservation, and social well-being are not mutually exclusive, but rather mutually reinforcing pillars of development. This year's efforts underscore the value of long-term vision, evidence-based planning, and inclusive partnerships in shaping a future where Belize's marine and coastal resources are protected and leveraged for national prosperity.

However, to maintain momentum and deepen impact, there is a clear need for continued investment in institutional strengthening, legal frameworks, and human capacity. As environmental pressures and climate risks grow more complex, so too must the systems that manage them. Strengthening data governance, fostering cross-sector collaboration, and accelerating legislative processes will be critical in addressing gaps and unlocking new opportunities across the blue economy and disaster risk management sectors.

Looking ahead, the Ministry must continue to be adaptable and forward-thinking, anchoring its work in sound science, guided by on-the-ground realities, and aligned with both national priorities and global sustainability ambitions. With continued collaboration among government, communities, civil society, and international partners, Belize is well-positioned to emerge as a leader in building a resilient, inclusive, and sustainable blue economy.

Annex 1. Organizational structure of the Ministry



Annex 2. Budget Distribution

Annex 2. Approved Budget distribution for CAP II Programs for FY 2024/25 and the estimated budget for CAP II Programs for FY 2025/26.

Strategic Management and Administration (115)

Account	Description	2024/25 Budget approved (BZD)	2025/26 Estimated Budget (BZD)
2019	Public Education & Awareness Program and Consultancy for Community Innovation and Resiliency	75,000	0
9328	Development and implementation of the Blue Economy Policy	100,000	50,000
9318	Professional Service Fee	0	50,000

Fisheries Resource Management and Development (053)

Account	Description	2024/25 Budget approved (BZD)	2025/26 Estimated Budget (BZD)
1112	Conservation Compliance Unit	150,000	0
1985	Sustainable Development of Belize Fishery Resources	120,888	120,888
9000	Purchase of Furniture & Equipment	25,000	25,000
9001	Purchase of Specialized Equipment	42,000	42,674
9003	Purchase of Computers & Peripherals	20,000	20,000
9006	Purchase of Air Conditioning Unit	7,490	0
9021	Capital Improvement to Building and Facilities	30,000	35,000
9326	Ongoing Conservation Activities	75,000	100,112
9327	Marine Reserve and Ecosystem Management Programs	180,000	180,000
9346	Sustainable Development of Belize Fishery Resources	16,603	160,000

Office of Emergency Management (100)

Account	Description	2024/25 Budget approved (BZD)	2025/26 Estimated Budget (BZD)
9162	Disaster and Emergency Contingency	25,000	0
9163	Disaster and Emergency Supplies and Inventory	2,000,000	1,000,000

National Meteorological Services (102)

Account	Description	2024/25 Budget approved (BZD)	2025/26 Estimated Budget (BZD)
9001	Purchase of Specialized Equipment	150,000	98,684

National Fire Services (101)

Account	Description	2024/25 Budget approved (BZD)	2025/26 Estimated Budget (BZD)
9000	Purchase of Furniture & Equipment	27,000	27,000
9001	Purchase of Specialized Equipment	185,000	119,079
9021	Capital Improvement to Building and Facilities	600,000	150,000
9175	Skills Training Programs	61,706	0

Annex 3. List of publications, proposals, reports

Title of Report	Owners
1. Institutional Capacity Assessment of Gender Related Policies to Advance Blue Economy Development in Belize	BEU
2. Institutional Strengthening Assessment and Action Plan	BEU
3. Monitoring, Reporting and Verification and Partnership Creation Report	BEU
4. Draft Blue Economy Monitoring, Reporting, and Verification Framework Toolkit	BEU
5. Vulnerability (V&L) Assessment for Chunox and Sarteneja	BEU
6. Blue Economy Climate Resilience Forum Report	BEU
7. Draft National Fisheries Enforcement and Conservation Monitoring Strategy & Action Plan	BFD
8. National Queen Conch Stock Assessment	BFD
9. Lobster Morphometric Surveys	BFD
10. BSOP Documentation for Milestone 4	CZMAI
11. Ocean Use Survey Results	CZMAI
12. Draft Sports Fishing Regulations	CZMAI
13. Draft National Relief Plan	NEMO
14. Draft National Logistics Management Plan	NEMO
15. Comprehensive Disaster Risk Management Audit Report	NEMO
16. Logistics System Audit Report	NEMO