IMA NEWS

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Dr. Ava Maxam Director of the IMA, Mr. Ermath Harrington Chairman of the Board of Governors IMA, Dr. Rahanna Juman Deputy Director of Research

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INSTITUTE OF MARINE AFFAIRS

Road to the Extraordinary: The Path Less Travelled, IMA Stakeholder Consultation Session Shapes Strategic Vision for 2025-2030

Dr. Maxam presents during the stakeholder engagement session

The Institute of Marine Affairs (IMA) convened its Stakeholder Engagement Session on Wednesday, 27th November 2024, under the theme "Road to the Extraordinary: The Path Less Travelled." This landmark event brought together a diverse group of stakeholders to collaboratively shape the organisation's 2025-2030 Strategic Plan. The session highlighted the importance of innovation, resilience, and transformative decision-making in addressing marine and coastal challenges.

Delivering the keynote address on behalf of the Honourable Pennelope Beckles, Minister of Planning and Development, Deputy Permanent Secretary Ms. Melanie Noel underscored the vital role of stakeholder engagement. She remarked, "All sectors of society need to be engaged. Public policy is not worth the paper it is on if stakeholders are not engaged." She further emphasised, "Stakeholder engagement is essential for a country's sustainability."

IMA's Chairman of the Board of Governors, Mr. Ermath Harrington, welcomed participants and set the tone for the session by highlighting the organisation's foundational pillars of People, Plant, Process, and Product. He reaffirmed IMA's dedication to "innovation and transformation" and called for bold, collective action to navigate the challenges ahead.

A key highlight of the session was the unveiling of IMA's proposed vision: "To be a centre of excellence at the forefront of marine and coastal research, expertise, innovation, development, and outreach – locally for Trinidad and Tobago and regionally for the Caribbean." This ambitious vision reflects the organisation's commitment to addressing critical marine and coastal issues through cutting-edge research and collaboration.

The proposed mission further reinforced the IMA's strategic objectives: "To be an internationally recognised marine and coastal research institute that addresses current and anticipated environmental challenges – specifically the triple planetary crises of pollution, biodiversity loss, and climate change – for sustainable development."

Deputy Director of the IMA, Dr. Rahanna Juman, provided an insightful overview of the organisation, highlighting that its greatest assets are its dedicated and capable staff. She noted the integral role of the IMA team in driving the organisation's initiatives forward. Meanwhile, Director of the Institute, Dr. Ava Maxam, addressed both opportunities and challenges, including the need to explore new funding sources and investments to sustain and expand the IMA's environmental initiatives.

The Stakeholder Engagement Session served as a dynamic platform for dialogue, fostering collaboration and inspiring participants to contribute to the IMA's future direction. The event reaffirmed the organisation's commitment to innovation and sustainability while setting the stage for impactful marine and coastal management in the years ahead.

Deputy Permanant Secretary Melanie Noel gives remarks

His Excellency Seijoong Kwon, Ambassador of the Republic of Korea to Trinidad and Tobago (center), (far left) Dr. Seung-ok Ryu, Researcher in the Political and Economic Affairs Division of the Korean Embassy, engaged in discussions with IMA Director Dr. Ava Maxam (left) and Dr. Rahanna Juman (right).

Fostering International Collaboration: Korean Ambassador Visits IMA

On November 8th, 2024, His Excellency Seijoong Kwon, Ambassador of the Republic of Korea to Trinidad and Tobago, accompanied by Dr. Seung-ok Ryu, Researcher in the Political and Economic Affairs Division of the Korean Embassy, visited the IMA. This significant courtesy call highlighted the Republic of Korea's interest in climate change and environmental sustainability, reflecting shared priorities between the two nations.

Ambassador Kwon, who presented his credentials to the President of the Republic of Trinidad and Tobago on September 5th, 2024, brought extensive expertise in climate and environmental issues. His visit to the IMA emphasized the critical role marine research plays in shaping sustainable development and addressing environmental challenges in Trinidad and Tobago.

IMA's Director, Dr. Ava Maxam, warmly welcomed Ambassador Kwon and Dr. Ryu, expressing her enthusiasm for deepening collaborations with the Republic of Korea. She highlighted the potential for transformative partnerships to advance marine research initiatives. Notably, Trinidad and Tobago has already benefited from Korean collaboration through the Association of Caribbean States (ACS) Sandy Shoreline Project. This project demonstrated the positive outcomes of international cooperation in tackling coastal erosion and climate resilience challenges.

The visit included a comprehensive tour of the IMA's state-of-the-art research facilities and specialised laboratories, beginning with the Geomatics Unit. Researchers detailed their work on oil spill monitoring, sargassum forecasting, and advanced mapping of coastal ecosystems, including mangrove forests. The importance of mangroves in carbon sequestration and their role in the development of a blue carbon credit scheme to offset greenhouse gas emissions was also highlighted.

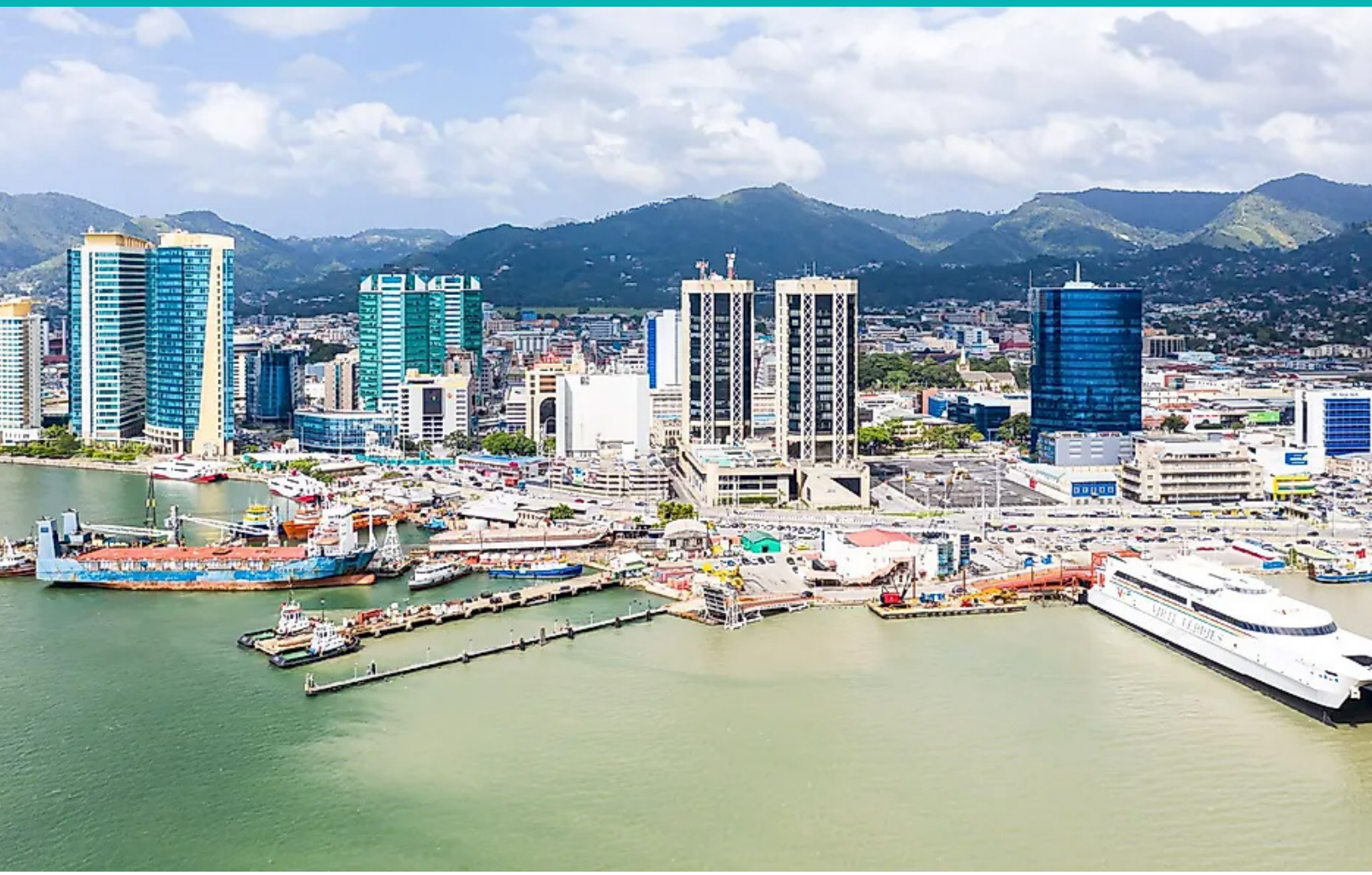
Next, the delegation explored the Oceanography and Coastal Processes Programme (OCP), where IMA researchers showcased the achievements of the 'Sandy Shorelines Project.' This initiative, supported by the Korea International Cooperation Agency (KOICA) and the Korean Institute of Ocean Science and Technology (KIOST), has completed Phase 1 with a feasibility study for a regional monitoring network to enhance coastal resilience. Proposals for Phase 2 are underway, promising further advancements in addressing coastal erosion and climate impacts.

Ambassador Kwon and Dr. Ryu were introduced to the Environmental Quality Programme (EQP), which focuses on hydrocarbon studies, trace metals, microbiology, and nutrient analysis. Discussions included cutting-edge research on microplastics, ocean acidification, eutrophication, and mercury analysis, as well as the national benefits of bacterial recreational water quality monitoring and oil fingerprinting analysis.

The tour concluded at the Fisheries Laboratory, where scientists discussed the Green Fund Project on the Lionfish invasive species. By using DNA barcoding to study lionfish gut contents, researchers gain insights into their dietary habits and ecological impacts. This data informs strategies to control the spread of this invasive species, which poses a significant threat to Caribbean marine ecosystems. IMA's efforts to promote lionfish as a sustainable food source also align with broader environmental management goals.

Ambassador Kwon's visit highlighted the importance of international collaboration in marine science. The IMA remains committed to exploring partnerships with nations like the Republic of Korea to achieve sustainable management of marine and coastal ecosystems for Trinidad and Tobago and the wider Caribbean. Such collaborations not only strengthen research capabilities but also foster innovative solutions to pressing environmental challenges.

Research building - Chemistry lab



Aerial view of the Port of Spain - the capital city of Trinidad and Tobago, that is located on the Gulf of Paria. Editorial credit: maloff / shutterstock.com

Protecting Our Waters:
Marine Spatial Planning in the Gulf of Paria

On October 2024, the Institute of Marine Affairs (IMA) partnered with the United Nations Office for Project Services (UNOPS) to create a Marine Spatial Plan (MSP) for the Gulf of Paria. This initiative is part of a broader regional project called "Protecting and Restoring the Ocean's Natural Capital, Building Resilience, and Supporting Region-Wide Investments for Sustainable Blue Socio-Economic Development" (PROCARIBE+), funded by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF).

PROCARIBE+ is a five-year program that focuses on safeguarding and revitalising coastal and marine ecosystems across the Caribbean and the North Brazil Shelf. Its primary goal is to foster sustainable ocean-based economies, often referred to as blue economies, by addressing key challenges such as marine conservation, sustainable fisheries, and land-based pollution. The project also integrates critical themes like climate change, gender equality, and post-COVID-19 recovery into its initiatives.

Building on earlier successes from the CLME (2009-2014) and CLME+ (2015-2021) projects, PROCARIBE+ aims to advance regional collaboration and operationalise an Ocean Coordination Mechanism. This mechanism will enhance the sustainable use and conservation of marine resources in the region.

What is Marine Spatial Planning?

Marine Spatial Planning (MSP) is a process that organises human activities in marine areas to achieve ecological, economic, and social goals. By analysing how marine spaces are used, MSP helps balance competing demands like development and ecosystem protection. This approach ensures sustainable management and allows stakeholders to plan for the future while preserving vital marine habitats.

Fishing boats Gulf of Paria

Why Focus on the Gulf of Paria?

The Gulf of Paria, a shallow and semi-enclosed basin shared between Trinidad and Venezuela, is one of Trinidad's most heavily utilised coastal areas. It supports a wide range of activities, including oil and gas exploration, shipping, fishing, and industrial development. This makes it an ideal location for implementing MSP to balance development with environmental conservation.

Looking Ahead

The IMA's collaboration with UNOPS under the PROCARIBE+ initiative reflects a commitment to sustainable marine management. Through Marine Spatial Planning and regional cooperation, the IMA aims to protect the Gulf of Paria's unique ecosystems while supporting economic growth and resilience. By aligning with global environmental priorities, Trinidad and Tobago is paving the way for a sustainable blue economy in the Caribbean.

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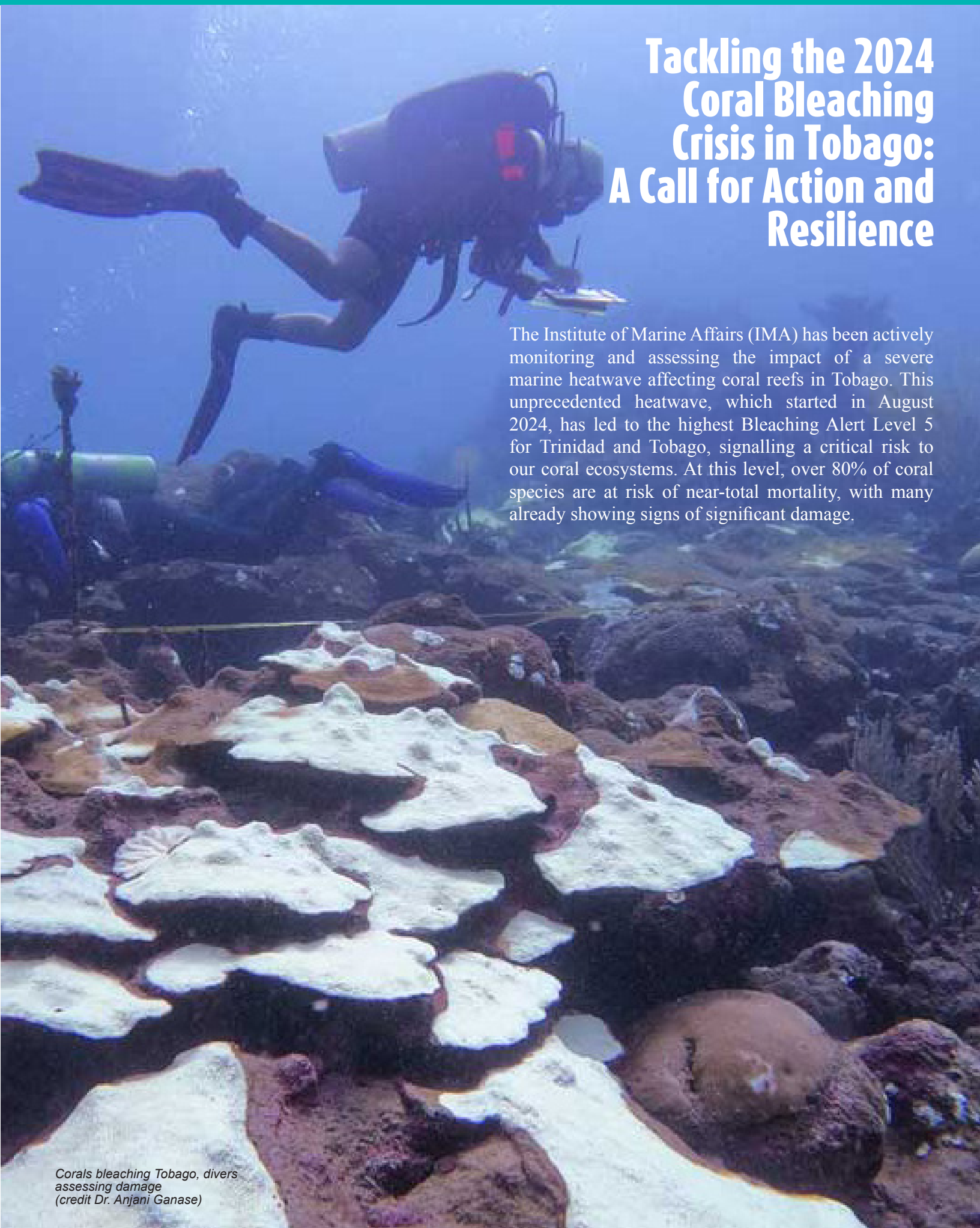
Tackling the 2024 Coral Bleaching Crisis in Tobago: A Call for Action and Resilience

The Institute of Marine Affairs (IMA) has been actively monitoring and assessing the impact of a severe marine heatwave affecting coral reefs in Tobago. This unprecedented heatwave, which started in August 2024, has led to the highest Bleaching Alert Level 5 for Trinidad and Tobago, signalling a critical risk to our coral ecosystems. At this level, over 80% of coral species are at risk of near-total mortality, with many already showing signs of significant damage.



Corals bleaching Tobago, divers assessing damage (credit Dr. Anjani Ganase)

Since the alert was issued, the IMA team has worked tirelessly to assess the extent of coral bleaching at key sites across Tobago, including Mount Irvine, Castara, Culloden Reefs, and the Buccoo Reef Marine Protected Area. Early findings indicate widespread bleaching, with some areas showing up to 95% bleaching in certain species. This loss of coral health is directly linked to elevated sea temperatures in the Lesser Antilles, which have affected the region the most. The corals, stressed by prolonged heat, expel the algae that live within them, losing their primary food source and turning white. While bleached corals do not die immediately, continued exposure to high temperatures will lead to coral mortality.

Coral bleaching Tobago

This year's coral bleaching event has been particularly severe, with Tobago's reefs enduring record-breaking heat stress from June to October. The IMA has expanded its monitoring efforts to assess the full extent of the bleaching, especially along Tobago's Caribbean coast and northeastern waters. The Institute is committed to intensifying its response and working with local partners to implement long-term restoration strategies, including ongoing efforts under the Marine Resilience Network (MARIN), which focuses on coral restoration and resilience-building.

As part of this response, the IMA hosted a community presentation on the 22nd of November 2024 at the Buccoo Community Centre in Tobago. The presentation, titled "The Status of the 2024 Mass Coral Bleaching Event and its Implications for Tobago", provided an update on the situation and discussed potential mitigation and adaptation strategies. The session was an opportunity for the community to learn about the impacts of the bleaching event, share concerns, and contribute to the conversation on protecting and restoring Tobago's coral reefs.

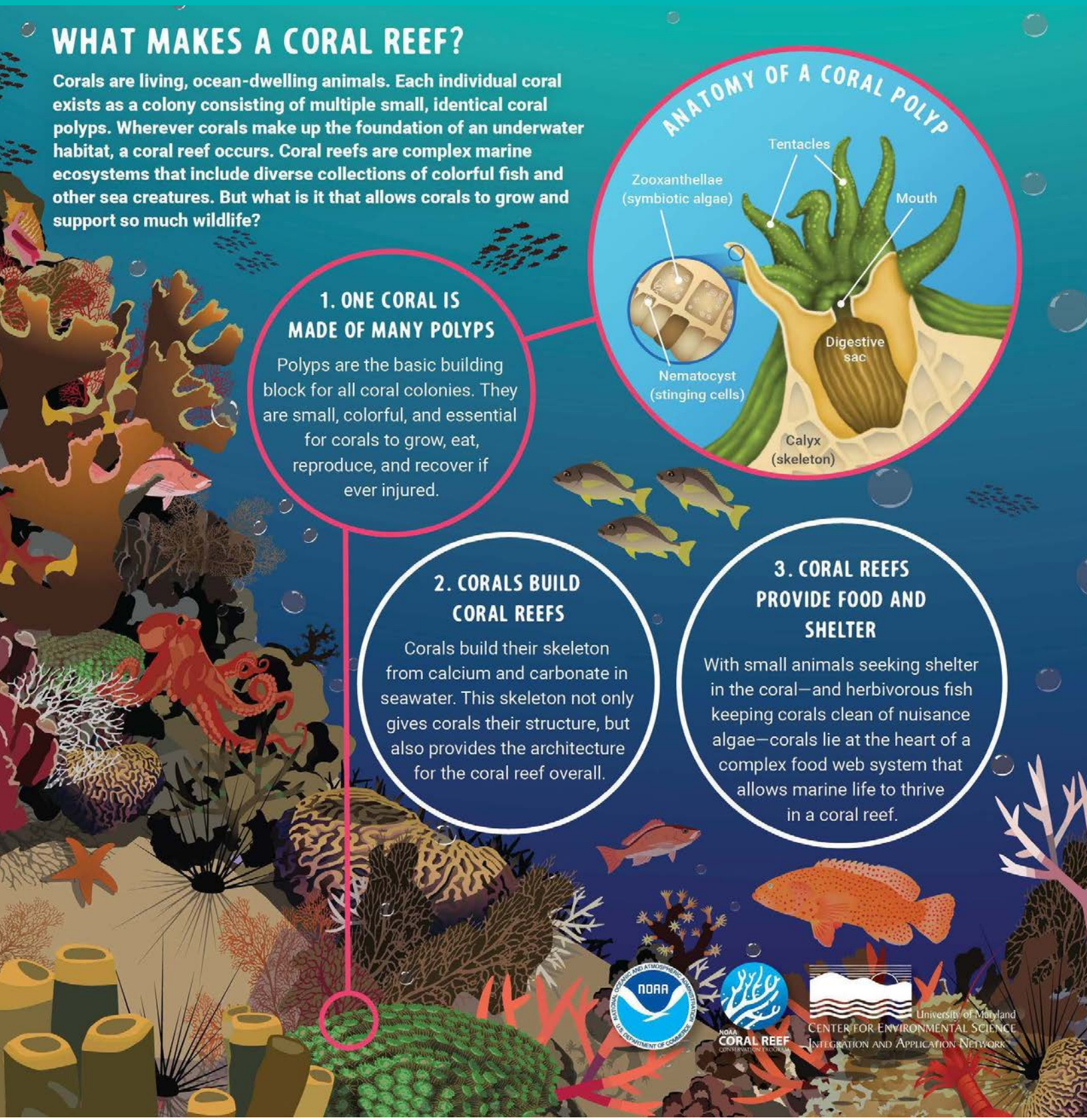
In addition to restoration efforts, the IMA continues to advocate for active fisheries management, the establishment of more marine protected areas, and stronger pollution regulations as essential components of long-term coral reef recovery. These steps are crucial for building resilience against the ongoing and future impacts of climate change.

Immediate Actions for Marine Resource Users

As part of the collective effort to protect our marine resources, the IMA urges all marine resource users to take the following immediate actions:

Report Coral Disease and Mortality: After mass bleaching, coral disease outbreaks are more likely. If you notice any disease, fish kills, or other signs of mortality related to coral bleaching, report it immediately.

lone trigger fish in the aftermath of bleached corals



Disinfect Diving Gear: To prevent the spread of coral diseases, disinfect all dive gear and marine equipment after use.

Minimise Human Impact: Avoid touching corals, and refrain from diving on reefs that are showing signs of disease outbreaks.

Fish Sustainably: Refrain from fishing on severely impacted reefs, especially from species like parrotfish, conch, crabs, and sea urchins. These species play a vital role in limiting algal blooms and helping reefs recover.

Monitor Water Quality: Support efforts to protect water quality by addressing harmful land-use practices such as coastal development, land clearing, and pollution from large gatherings.

How to Report

To assist in ongoing data collection and conservation efforts, the IMA encourages the public to report coral bleaching or any related incidents through the SeaiTT App, or by emailing incidents@ima.gov.tt or anjani.ganase@gov.tt. Alternatively, reports can be made by contacting the IMA at (868) 634-4291 Ext. 1310/2407/2408 during office hours or via mobile at (868) 684-8121; (868) 294-4719.

A Call for Collective Action

Coral reefs are not only vital ecosystems that sustain marine biodiversity, but they also protect our coastlines and support the livelihoods of communities dependent on marine resources. The IMA urges everyone to remain vigilant and take action to protect our reefs during this challenging time. The 2024 marine heatwave serves as a stark reminder of the urgent need for continued conservation and resilience-building efforts.

Through collaboration and concerted action, we can help Tobago's reefs recover and ensure their survival for future generations. The IMA is committed to leading the charge, but it is only through the collective efforts of the community, government, and stakeholders that we can overcome this crisis and build a more resilient marine environment.

IMA staff and participants from Guardian Group at Hart's Cut Bay for International Coastal Cleanup 2024

IMA Partners with Guardian Insurance Group for Successful International Coastal Cleanup at Hart's Cut, Chaguaramas

The Institute of Marine Affairs (IMA), in collaboration with the Guardian Insurance Group and with support from the Ministry of Planning and Development, successfully organised a beach cleanup and data collection initiative at Hart's Cut, Chaguaramas, as part of the global International Coastal Cleanup (ICC) 2024 event. More than 80 dedicated volunteers participated in the effort, collecting an impressive 531 pounds of garbage and removing over 50 bags of waste from the shoreline.

Honourable Pennelope Beckles, Minister of Planning and Development, highlighted the significance of the cleanup, noting that "The data collected is used for research and to help make informed decisions." She further emphasised the scale of the global effort, mentioning that each year, eight million tons of garbage are collected during the ICC event, with plastic making up 60% of the marine litter.

Marine pollution remains one of the most pressing environmental challenges, threatening both marine ecosystems and human health. The waste collected during the cleanup, which included plastic bottles, packaging, and other debris, poses serious risks to marine life by introducing toxins into the food chain, disrupting habitats, and contributing to the ingestion of plastics by marine organisms. These impacts extend beyond the ocean, affecting local economies and public health.

As part of the global ICC initiative, which is coordinated nationally by the Caribbean Network for Integrated Rural Development (CNIRD), the IMA has been an active participant in raising awareness about marine pollution and its far-reaching effects. The cleanup serves as an important reminder of the need for collective action to protect our coastlines. Mr. Ermath Harrington, Chairman of the IMA's Board of Governors, commended the volunteers for their role in promoting environmental sustainability, stating, "One of the three pillars of a developed society is how it treats its natural environment, and so your participation was instrumental in this effort."

Beyond removing waste from the beach, the event also focused on data collection, which is essential for understanding the types and quantities of debris impacting our environment. This data is a vital resource in shaping policies aimed at reducing marine litter and protecting our coastal ecosystems. Dr. Ava Maxam, IMA's Director, praised the volunteers for their commitment, saying, "By removing trash from the beach today, each of you made a difference by your actions, demonstrating your dedication to environmental stewardship."

The IMA extends its heartfelt thanks to all volunteers and partners for their time, energy, and support in making this event a success. This collaborative effort underscores the importance of community involvement and data-driven decision-making in safeguarding Trinidad and Tobago's precious coastal ecosystems.

IMA Engages Community Through Educational Outreach Initiatives

Couva Tabaquite Talparo Regional Coporation Disaster Mgt Unit with IMA representatives and other agencies

In October 2024, the Institute of Marine Affairs (IMA), through its Information Centre, reaffirmed its commitment to education and community engagement by participating in two significant outreach sessions. These events provided excellent opportunities to connect with students and the wider public, highlighting the vital role of coastal ecosystems and marine research.

The first outreach session took place on 10th October 2024, in observance of the International Day for Disaster Risk Reduction under the theme "Empowering the Next Generation for a Resilient Future." Hosted by the Couva/Tabaquite/Talparo Regional Corporation's Disaster Management Unit, the event brought together various agencies to raise awareness on disaster preparedness and resilience. Mrs. Krystal Ganaselal, representing the IMA, set up an informative booth and engaged with students from Couva West Secondary School.

Through interactive discussions, students learned about the importance of coastal ecosystems, especially in the context of climate change. They explored how these natural resources provide solutions to mitigate the impacts of climate hazards such as storm surges and flooding.

The second outreach session took place on 25th October 2024, during the Public Service Career Fair organized by the Ministry of Public Administration. At the event, IMA staff members Krystal Ganaselal and On-the-Job Trainee Tershyan Russell represented the Institute, facilitating IMA's booth. They engaged with students and members of the public, providing insight into the Institute's marine and coastal research efforts and services.

Through these initiatives, the IMA continues to share knowledge and raise awareness about the value of marine ecosystems. By empowering the next generation, the Institute remains dedicated to building a resilient and sustainable future.

Ms. Krystal Ganaselal with students from Couva West Secondary at Intl Day for Disaster Reduction outreach session

Ms. Krystal Ganaselal interacts with primary school students at Public Admin Career Fair 2024

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THE BLUE CORNER

Smart Buoys and Sensors: Monitoring Ocean Health in Real-Time

Technology is transforming how we monitor the health of our oceans, with smart buoys and sensors playing a pivotal role. These advanced devices collect real-time data on vital ocean parameters such as water quality, temperature, salinity, and pH levels, providing crucial insights into marine conditions.

In addition to environmental monitoring, these buoys track marine life, using acoustic sensors to follow the movements of species like fish and sea turtles. This data helps researchers understand migration patterns and the impacts of climate change on marine ecosystems.

Smart buoys are essential in detecting early signs of environmental stress, such as coral bleaching or harmful algal blooms. By offering continuous, long-term data, they enable faster responses to protect marine life and coastal communities.

As challenges like climate change and pollution threaten our oceans, smart technologies are key to ensuring their protection and sustainability for future generations.

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