
MALDIVES
Resilient
Reefs
For People
and Nature
2024 ANNUAL REVIEW

CONTENTS

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WELCOME TO MRR

“MARUHABAA”

The climate and biodiversity crises are having a profound and alarming impact on both humans and species worldwide. With little to no effective global action addressing these pressing issues, those of us living in the world’s lowest-lying island nation must confront this stark reality.

Our marine natural heritage— our coral reefs, seagrass meadows, and mangroves—has sustained our communities on these small islands for millennia. While we take pride in being one of the few countries committed to protecting our marine megafauna and banning the most destructive fishing practices, it is concerning that currently, less than one percent of our ocean area is protected. This lack of protection has contributed to the destruction of marine habitats due to development activities, which have surged alarmingly over the past few decades. The expansion of fisheries, particularly for coral reef species, has been on the rise for the last 50 years, and its impact on our marine environment remains inadequately understood. To secure our future, there is an urgent need to rethink and set more ambitious targets for marine conservation and resource management.

At MRR, our efforts are dedicated to addressing the critical threats facing resilient ecosystems in the Maldives, including habitat destruction, overfishing, unsustainable tourism, and marine pollution. This daunting task can be emotionally challenging for our small NGO team, but I am continually inspired by the remarkable dedication and passion of our staff, collaborators, and networks, who tirelessly advocate for a better future for our people. As we expand our NGO, we look forward to broadening our reach and influence to improve policies and safeguard the lives of our ocean-dependent communities.

Aminath Shaha Hashim
Executive Director

Photo by **Matt Porteous**

OUR PURPOSE AND STRATEGIES

OUR PURPOSE

At MRR, we are dedicated to restoring Maldivian coral reefs as climate resilient ecosystems that benefit both people and nature.

Our vision is an island nation where 30 per cent of our waters are fully protected from extractive activities, while the remaining 70 per cent are managed sustainably.

We take a holistic approach to achieving this vision, blending grassroots efforts with strategic top-down support. We work closely with local communities, fishers, NGOs, and the private sector to inspire collective action and foster a strong, lasting connection to our marine environment. At the same time, we engage with local and national governments to strengthen policies and practices that prioritize marine conservation across the country. Through these combined efforts, we seek to demonstrate that sustainable fishing and marine protection can yield greater benefits for both the fishing and tourism industries.

OUR STRATEGIES

We focus on three strategic objectives to achieve this vision.

Objective 1

Increased effective marine protection to build climate resilience in the Maldives

We support the protection of marine habitats and strengthening of their management to restore populations of vulnerable species while safeguarding local livelihoods.

Objective 2

Reduced human threats to marine ecosystems in the Maldives

We address human threats to marine ecosystems by promoting sustainable fisheries, responsible tourism and managing nutrient pollution.

Objective 3

Strengthened local capacity, knowledge, and support for marine conservation

We empower local communities to take ownership of marine conservation by providing training, encouraging engagement, and raising awareness.

TIMELINE

THROUGH THE YEARS

2020

MRR was registered as an NGO in the Maldives. The Laamaseelu Masveriyaa programme was launched at Six Senses Laamu, and the #FishForTomorrow campaign raised public awareness about vulnerable reef species, garnering support for the protection of all parrotfish species in the Maldives. Several recommendations from MRR and Blue Marine Foundation were incorporated into new fishery management plans, particularly for the management of grouper fishery.

2021

MRR contributed to the designation of six new protected areas in Laamu Atoll, which was also declared a Mission Blue Hope Spot. The #SaveOurSharks campaign garnered the support of over 250 local and international stakeholders and successfully prevented the reopening of the shark fishery.

2022

New research on the status of the Napoleon wrasse population in Laamu Atoll was published, and the Laamu Resource Use Survey report was finalized.

2023

MRR launched its e-learning hub, Masmahaaveshi, and rolled out the Laamaseelu Masveriyaa programme to three resorts. The coral reef status report for Laamu, comparing the 2019 baseline surveys with the 2021/22 monitoring surveys, was completed. A massive open online course on nitrogen pollution was developed in collaboration with the University of Edinburgh, and the #GentletoGiants Code of Conduct for whale shark tourism in South Ari Atoll was signed by 20 tourism operators.

2024

The Laamu Hithadhoo Baaneykolhu Community Conserved Area is set to launch once the regulation is gazetted. Baseline surveys of five Environmentally Significant Areas in Laamu Atoll were completed, and new research on mangrove die-back, seagrass extent, and responses to nitrogen was published. The 'Old Man and the Sea – Maldives' research project was completed, along with coral reef monitoring at Laamu's ecologically significant sites. The #AgainstLonglining campaign successfully prevented the issuance of longlining licenses and shark bycatch.

OBJECTIVE 1

Increased effective marine protection to build climate resilience in the Maldives

1.1 SUPPORTING THE ESTABLISHMENT OF COMMUNITY CONSERVED AREAS (CCA) WITHIN THE MALDIVES

Laamu Hithadhoo Baaneykolhu Community Conserved Area (CCA)

MRR and Blue Marine, with funding from the UNDP GEF Small Gants Programme, have been working closely with the Laamu Hithadhoo Council to establish a Community Conserved Area (CCA) within the council's jurisdictional boundary. This CCA referred to as "L. Hithadhoo Baaneykolhu CCA" supports healthy coral reefs and seagrass habitats and is home to a rich biodiversity of marine life including megafauna, fish, and endangered species, as well as being a critical multi-species grouper spawning aggregation site. The goals of the CCA are to protect its biodiversity and ecosystems, deliver sustainable use of natural resources and create a better understanding of the Maldives marine environment through education and outreach. The Hithadhoo Kandu Kolhu area will be a No-take zone, completely removing fishing pressure and enabling fish stocks to replenish. The increase in fish numbers will also be aided by the use of sustainable fishing methods in the rest of the CCA.

The CCA project was presented at the Maldives Protected & Conserved Areas (PCA) Forum 2024, organised by Ministry of Climate Change, Environment and Energy (MCCEE) in January, as an example of the role of wider stakeholders in PCAs. In 2023, we drafted a comprehensive CCA Management Plan and regulatory framework with extensive stakeholder engagement. This process included initial scoping interviews with 130 community members and four stakeholder meetings involving the Hithadhoo community, local fishers, tourism operators, and representatives from research organisations. The draft regulation was submitted to the Local Government Authority (LGA) in September 2023; however, their publication in the Government Gazette is still pending. We have made subsequent amendments based on feedback from the LGA, the MCCEE, and the Attorney General's Office (AGO). Currently, the Ministry of Tourism and Environment is working to incorporate changes to the regulations that clarify the roles of the Ministry and the Environmental Protection Agency (EPA) in CCA governance. Should this not come to fruition, the establishment of a co-managed national Marine Protected Area (MPA) has been proposed.

In 2024, we made noteworthy progress towards the CCA's launch. This included developing Standard Operating Procedures (SOPs) for the vessel booking system, pre-dive briefings, and complaint handling. We also established Terms of Reference (ToR) for the Management Advisory Committee and created informational materials. Our support for local governance continues with the Hithadhoo Environment Officer, who has been conducting daily patrols to monitor tourism activities in the area. To enhance local capacity, we held seagrass citizen science workshops for Hithadhoo residents, and three council members obtained their PADI Advanced Open Water Diver certification, equipping them to participate in future dive surveys.

In 2018, Blue Marine was able to scientifically verify a viable grouper spawning aggregation at Hithadhoo Corner. MRR and Blue Marine have been monitoring this site since 2022. In 2024, Underwater Visual Census (UVC) surveys were conducted from October to December. These surveys replicated studies from 2016, 2017, 2019, and 2022, contributing to a long-term dataset that will aid in assessing changes in grouper populations and behaviour over time.

In 2024, in collaboration with Masters students from The University of Exeter (UK), seagrass meadows within the proposed Hithadhoo CCA were re-surveyed to compare results with baseline surveys from 2019. Between the two periods, fish abundance had increased by nearly 200%. A total of 70 fish species were identified, with parrotfish the most frequently observed family. In 2024, two-thirds of the fish recorded were juvenile, and 60% of the juveniles were groupers. These results confirm that the CCA in Hithadhoo is functioning effectively as a nursery area for juvenile fish, including for a group like groupers that is highly sensitive to being over-fished. As a negative finding, the 2024 survey showed that 36 hectares of seagrass had been lost since 2019, representing a decline of 26%. Four species of seagrass were identified, and species composition remained stable. Seagrass cover ranged from 7% to 87% across the meadows, influenced by variations in shoot shape and density. Notably, the mean cover of epiphytic algae was lower in 2024, suggesting healthier growth conditions for seagrass. Additionally, the surveys revealed a balanced relationship between macroalgae and seagrass, with no adverse interactions detected in the data analysis. Overall, while some areas showed improvements in seagrass cover, others experienced declines, indicating a complex health status across the meadow.

1.2 SUPPORTING THE CREATION AND EFFECTIVE MANAGEMENT OF NATIONAL MPAs

‘Old Man and the Sea – Maldives’

Photo by **James Hornell**

The marine natural capital of the Maldives has sustained inhabitants, visitors, and trade for over two millennia; however, much of its early history remains obscure due to a lack of systematic studies. Consequently, there is limited understanding of the long-term environmental changes affecting these ecosystems. Establishing a historical context is vital for creating reference points, particularly as ecosystems continue to evolve under the pressures of climate change. In 2020, our Executive Director, Shaha Hashim, began a part-time Master’s by Research (MbyRes) study at University of Exeter (UK) focused on understanding the marine historical ecology of the Maldives, which was submitted in November 2024. This study established a baseline of marine resources in the Maldives by integrating historical records and Local Ecological Knowledge (LEK) gathered from interviews.

The analysis encompassed archaeological, ethnographic, and epigraphic evidence spanning from 50 BC to 1975, supplemented by LEK interviews that captured changes occurring since the 1950s across two northern and one southcentral atoll. Remarkably, despite enduring environmental and human pressures, coral reefs in the studied areas maintained high live coral cover until the late 20th century. However, recent decades have seen significant declines across them and the two other habitats investigated, namely mangroves and seagrass meadows.

Historical sources indicated that the economic demand for tuna and bait fish remained relatively high until 1975, however, there is little evidence to suggest that these populations experienced long-term impacts. LEK participants perceived that while technological advancements in recent decades have increased catch efficiency, there have been declines in nearshore tuna populations and insufficient bait fish catches. Since the 1970s, there have been notable declines in catches of reef fish, sea cucumbers, and octopus. Reports from the 19th and 20th centuries indicated declines in turtle, bird, and whale populations, with recent trends showing no improvement. This is particularly alarming considering the loss of numerous turtle nesting beaches and reports of local extinction of crab plover (*Dromas ardeola*) on several islands. Conversely, study participants observed relative stability in dolphin and ray populations, along with signs of recovery in shark populations, suggesting some success from conservation efforts. These findings provide critical historical context for marine resource management, highlighting both successes in conservation efforts and the immediate need for attention in specific areas.

Environmentally Significant Areas and Natural Capital Accounting in Laamu Atoll

In 2024, MRR collaborated with the Maldives’ Ministry of Climate Change, Environment and Energy, (MCCEE) on a consultancy project to conduct baseline surveys of five Environmentally Significant Areas (ESAs) in Laamu Atoll. These sites are being considered by the government as potential candidates for future protected or conserved area status. MRR delivered all agreed outputs on schedule, including:

1. **A literature review synthesizing available geological, ecological, and socio-economic evidence, alongside identified natural and anthropogenic stressors;**
2. **An ecological baseline report outlining marine ecosystem features across the ESAs—such as coral reefs, seagrass meadows, and island vegetation;**
3. **A socio-economic baseline report capturing site-level contexts, resource use patterns, indicators of pressure and risk, and key ecosystem services to surrounding communities;**
4. **Geomorphological and land use change maps.**

The findings were presented to the Ministry and local stakeholders during a collaborative workshop in December 2024.

MRR has also contributed to the Natural Capital Accounting (NCA) process in Laamu Atoll by providing long-term marine ecosystem datasets to the University of New South Wales (UNSW), who are leading the technical delivery of the NCA work under contract with MCCEE. In parallel, MRR has engaged in multiple capacity-strengthening activities through the project, including workshops and technical training on ecosystem monitoring approaches.

Scientific Monitoring of Protected and Conserved Areas in Laamu Atoll

Since 2016, MRR and its partners have worked alongside the Laamu Atoll Council and local communities to identify marine and coastal areas requiring conservation attention. This participatory effort led to the identification of grouper spawning aggregation sites in 2017 and the implementation of biodiversity baseline surveys in 2019, covering 20 coral reefs, three seagrass meadows, and two mangrove systems. These findings were synthesized with research by MUI by Six Senses and other partner NGOs to support a formal proposal submitted to the Government of Maldives, aimed at strengthening protection of Laamu Atoll’s most ecologically significant habitats. In recognition of these efforts, Laamu Atoll was designated a Hope Spot by Mission Blue, and in 2021, six new Marine Protected Areas (MPAs) were formally established by the Government of Maldives.

IIn 2024, MRR participated in two expeditions focused on coral reef health—its own reef survey expedition and the Olive Ridley Project’s Laamu Hope Spot Expedition. Reef assessments were carried out at 13 sites across Laamu Atoll, including designated MPAs, ESAs, and the proposed Hithadhoo Community Conservation Area (CCA). Post-survey reports by University of Exeter Master’s students indicate variability in reef fish assemblage health across sites. Among surveyed locations, Fushi Kandu, Isdhoo Muli, and Hithadhoo Corner were observed to have relatively higher biomass of ecologically and commercially significant fish species, while Fonadoo Outside recorded lower levels.

Analysis of benthic composition showed that average hard coral cover across sites was 29% in 2024. However, approximately 38% of the hard corals surveyed showed signs of bleaching, with Acropora species exhibiting greater vulnerability compared to Pocillopora and Porites species. Fushi Kandu displayed the most extensive hard coral cover among the sites surveyed.

1.3 CONSERVING SEAGRASS AND MANGROVE HABITATS

Maldives is a seagrass ‘bright spot’ in the Indian Ocean

Seagrasses play a vital role in the Maldives as critical carbon sinks, aiding in climate change mitigation. In 2024, we co-authored a paper with Northumbria University (UK) titled “Rapid Seagrass Meadow Expansion in an Indian Ocean Bright Spot.” Our research revealed that the contemporary extent of seagrass in the Maldives is approximately 105 km² (overall accuracy = 82.04%), with a remarkable threefold increase in seagrass area from 2000 to 2021. We identified a significant association between seagrass distribution and anthropogenic activities, which we hypothesise may be driven by nutrient loading or altered sediment dynamics resulting from extensive land reclamation. This national-scale seagrass expansion is a notable exception in the context of global seagrass decline, positioning the Maldives as a unique global “bright spot” in seagrass conservation worthy of increased scientific, commercial, and policy attention. An additional paper on fish assemblages on Laamu’s seagrass meadows is currently in the peer-review process.

Photo by **Matt Porteous**

Maldivian mangroves under stress from climate change

Mangrove forests are crucial for enhancing the resilience of Small Island Developing States to climate change. However, in 2020, a mangrove dieback event impacted approximately 25% of mangrove-containing islands in the Maldives. In partnership with Northumbria University (UK), we co-authored a paper titled “Sea-level Rise and Extreme Indian Ocean Dipole Explain Mangrove Dieback in the Maldives.” Using remote sensing, dendrology, and sediment geochemistry, we uncovered a significant decline in mangrove health post-2020 compared to pre-2020. Analysis showed that dead trees exhibited reduced stomatal conductance relative to living trees, indicating stress from salinity. Alarmingly, the rate of sea-level rise (30.50 ± 23.30 mm/year) outpaced mangrove sediment accretion (6.40 ± 0.69 mm/year) by a factor of five between 2017 and 2020. We attributed this dieback primarily to salinity stress caused by record-high sea levels in 2020, which were linked to an extreme positive Indian Ocean Dipole event. These findings reveal the vulnerability of mangrove ecosystems to rapid sea-level rise and highlight the urgent need for adaptive conservation strategies in the Maldives.

In 2024, MRR and Blue Marine, in collaboration with East Carolina University (USA) and Southern Cross University (Australia), conducted further research to elucidate the drivers behind mangrove dieback in the Maldives. Our objective was to understand why dieback occurred on some islands but not others by comparing data sets from both control and impacted islands located in distinctly different sea level regions (north and south). We analysed a range of variables across affected and unaffected islands, including species composition, elevation, groundwater levels and sediment accretion. The findings suggest that salinity stress resulting from an extreme rise in sea level is likely the primary cause of mangrove dieback. Our comparison of living and dead mangrove areas revealed significant differences in abiotic conditions linked to the loss of vegetation cover. Notably, water temperatures in dead forest areas were observed to be up to 10°C higher than in living forest regions, which may alter ecosystem functions and impede recovery. As of 2024, it is estimated that 27.38% of the mangrove forest area has been lost in HDh. Neykurendhoo, and 53.39% has been lost in GDh. Hoandedhdhoo. Based on these findings, we recommend the following actions: a) identify areas of high ecological, cultural, and economic value, prioritising management efforts at these sites, and b) prioritise the natural recruitment of mangroves wherever possible.

OBJECTIVE 2

Reduced human threats to marine ecosystems in the Maldives

2.1 IMPROVE THE SUSTAINABILITY OF MALDIVIAN FISHERIES

“Laamaseelu Masveriyaa” resort reef fishery programme

The rapid tourism development in the Maldives over the past 50 years has led to increased demand for coral reef fisheries resources. Yet limited data on the sector’s impact on marine ecosystems is available. As such, there is an urgent need for management measures to prevent fisheries decline. In response, MRR and Blue Marine launched a sustainable resort reef fishery programme called “Laamaseelu Masveriyaa” (meaning exemplary fisher) in 2020 at Six Senses Laamu. This programme operates under a code of conduct, requiring local fishers to use sustainable fishing gear and target only resilient species of mature size, while avoiding protected and ecologically sensitive areas. In return, resorts ensure local fishers a stable market for sustainably caught seafood, offering competitive prices. The programme not only benefits marine ecosystems but also empowers local fishers and improves access to the resort’s seafood market.

At Six Senses Laamu, over 6,500 fish and lobsters were landed without capturing any nationally or voluntarily protected species. Seafood sales totalling over 13,000 kg contributed USD 33,440 to the local economy, with 31 local fishers selling seafood to the resort. In 2024, the total number of participants increased to 43. Additionally, improved reporting by fishers and better compliance with minimum size limits have been observed. MRR and Blue Marine held three quarterly meetings with fishers and the resort throughout 2024.

The programme currently depends on fishers completing paper-based catch logs and voluntarily disclosing their fishing locations when selling seafood through the programme. To enhance real-time landing monitoring and improve supply chain traceability, a new project, funded by The Ocean Foundation, which is supported by the U.S. Department of State and the National Oceanic and Atmospheric Administration, in partnership with The Local2030 Islands Network, is set to pilot Vessel Monitoring Systems (VMS) on fishing boats in 2025. The implementation of VMS technology into the programme is community-led and rooted in the needs and perspectives of local fishers. Fishers are generally willing to support this project, recognizing that it can also enhance their safety at sea.

We have collected data now from over 400 recreational fishing trips conducted at Six Senses Laamu which will help inform the management of recreational fishing in the Maldives tourism sector. Additionally, a survey completed by 95 guests gauged their understanding of the Laamaseelu Masveriyaa programme through responses gathered during an evening presentation. Results showed 79% familiarity with the programme, with 54% having learned about it at the SHELL and 22% from the presentation. Moreover, 79% agreed that all resorts should implement sustainable fishing programmes, and 86% supported Six Senses Laamu’s efforts to protect vulnerable reef fish species like groupers. Additionally, 80% expressed a preference for sustainably caught local fish over imported options, and 56% indicated a greater likelihood of purchasing certified sustainable fish after learning about sustainable fishing practices.

Since its launch at Six Senses Laamu in 2020, funded by the Canada Fund for Local Initiatives, the Laamaseelu Masveriyaa programme was expanded to three new resorts in 2024: Baa Atoll Amilla Maldives, Lhaviyani Atoll Six Senses Kanuhuraa, and Gaafu Dhaalu Atoll Ayada Maldives. During the initial scoping phase, an assessment was conducted to evaluate the feasibility of establishing the programme at each resort by examining their seafood sourcing practices and characterizing local seafood supply chains. This was essential to ensure that the programme's Standard Operating Procedures (SOPs) complemented existing seafood sourcing activities and could be easily integrated with the resorts' established procedures. Additionally, we visited local fishing communities to determine how the programme could effectively support their livelihoods.

The framework developed for each atoll was designed to include specific SOPs for seafood sourcing. This included a new courier system that allows programme fishers to pool their catches, enabling registered fishers to sell on behalf of others in the programme. During the implementation phase, we successfully recruited 112 new sustainable fishers. The process began with an interactive presentation introducing the programme and its benefits, which facilitated extensive discussion between the fishers and the project team. To join the programme, fishers were required to complete the specific Laamaseelu Masveriyaa module on our Masmahaaveshi e-learning hub.

At Amilla Maldives, the programme is successfully operating, with 51 registered fishers who meet the resort's supply demands on a monthly basis. The success of this programme at Amilla Maldives is testament to both the resort team who enable the smooth operation of the programme on a daily basis, and local fishers who embrace sustainable fishing practices and ensure a consistent supply of fish to the resort.

Maldives tourism industry fish and seafood sourcing survey

In 2023, MRR and Blue Marine, in partnership with the Ministry of Tourism (MoT) and Ministry of Fisheries and Ocean Resources (MFOR), concluded a fish and seafood sourcing survey across the tourism industry in the Maldives. The survey was designed to reveal how, from where, and what local seafood is sourced by tourism operators, and the answers were used to develop informed management recommendations to ensure sustainable and equitable local seafood sourcing practices. Responses from 30 resorts revealed they mainly sourced tuna, reef fish and billfish from within the Maldives, but they also extensively imported non-native seafood groups from overseas such as salmon, mussels, and oysters. Tuna was sourced exclusively locally, whereas reef fish, billfish, octopus, lobster, bream, cuttlefish and crab were sourced from a mix of local and international suppliers. The most commonly sourced reef and oceanic fish groups included snapper, grouper and wahoo which were each sourced by over 80% of respondents. The survey estimated that during the high season, the weekly catch of a resort is, on average 340kg (±28kg) of reef fish, 180kg (±26kg) of lobster and 112kg (±25kg) of octopus per and during the low season 250kg (±31kg) of reef fish, 123kg (±20kg) of lobster, and 98kg (±20kg) of octopus. The majority of respondents expressed a desire to increase the sustainability of their local seafood sourcing practices. However, it was evident that there is a lack of effective mechanisms through which tourist resorts can ensure the sustainability, consistency, and quality of local seafood. The draft report is currently under review and will be published on MRR's website when finalised.

Understanding the impact of climate change on fisheries

With climate change predicted to intensify over the coming decades, it is crucial to improve the understanding of how climate change impacts Maldivian fisheries and fisherfolk and to identify how these impacts will worsen over time so that appropriate management interventions can be implemented. In 2024, funded by the Commonwealth Foundation, we launched a new project aimed at understanding and documenting the effects of climate change on Maldivian fisheries and fisherfolk, as well as formulating policy recommendations to protect the livelihoods of the fisherfolk from these impacts. In the initial stages of the project, we completed a literature review of climate change impacts on fisheries, particularly in the context of Maldives.

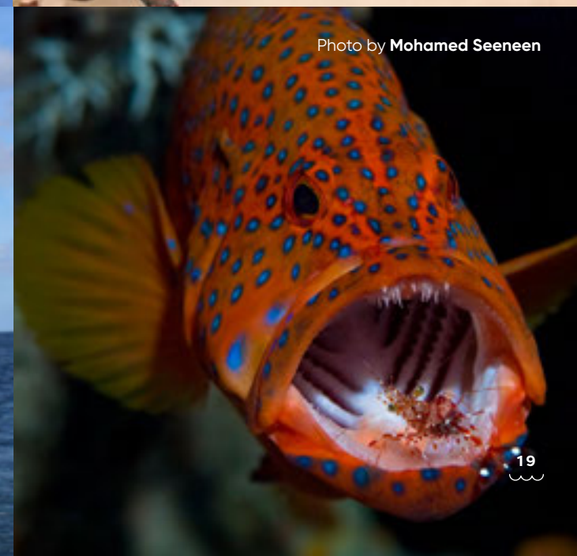


Photo by **Mohamed Seeneen**

Sustainable fisheries trainings in Laamu Atoll

Fishers are the backbone of the Maldivian economy, playing a crucial role in marine resource management and benefiting from ecosystem services. Promoting sustainable fishing practices among them is essential to maintaining a healthy ocean and safeguarding the livelihoods of dependent communities. In 2024, MRR, under the Ministry of Climate Change, Environment and Energy's project on Enhancing National Development through Environmentally Resilient Islands (ENDhERI), conducted training and awareness programmes in Laamu Atoll. These sessions targeted various fisheries stakeholders, including atoll and island councils, tuna and reef fishers, processors, and traders. Training topics included marine ecosystems, Maldives and Laamu fisheries, fisheries management, laws and regulations, roles, and responsibilities of fishers, permitted and prohibited gears, protected species and areas, keystone and ecologically vulnerable species, fisheries data collection and use, fisheries licensing, offences and penalties, live bait, fisheries technology, increasing efficiency, and onboard fish handling. Moreover, awareness sessions were held for school students to deepen their understanding of the significance of sustainable fisheries management.

A total of nine sessions were conducted, engaging 289 participants from Laamu Atoll, including 41 local council members, 50 fishers, eight fish traders and processors, 86 students, and three teachers. The insights from these stakeholders, particularly concerning unsustainable practices, environmental changes, and regulatory gaps, informed a series of recommendations to guide fisheries and environmental agencies toward fostering a sustainable, resilient, and economically viable fishing industry that ensures ecological balance and supports community livelihoods.

Facilitating fisheries co-management at Laamu Atoll

In celebration of National Fishermen's Day 2024, MRR, in collaboration with the Laamu Atoll Council and Six Senses Laamu, hosted a fisher stakeholder meeting in December. The gathering included 16 fishers from the islands of Gan, Maavah, Hithadhoo, Kalaidhoo, Maamendhoo, and Maabaidhoo, representing a mix of tuna, reef, and invertebrate fishers. Discussions centered on the impacts of climate change, ways to address these challenges, and identifying responsible parties for action.

Fishers expressed concerns about coral bleaching, increasingly unpredictable weather and currents, declines in the bait fishery, and the effects of coastal development. They unanimously agreed that dredging and land reclamation have caused irreparable damage to reef ecosystems, emphasising the need for policymakers to consider these impacts in their decisions. Additionally, the fishers called for effective fisheries management plans and welcomed the development of national policies. They highlighted the necessity for more research on bait fishery dynamics and pelagic fish behaviours in light of climate change.

Photo by **Khalaf Ilyas**

Improved understanding of the deep reef sport fishing in Maldives

Sport fishing for big game or trophy fish is a popular recreational activity globally, often involving a competitive element. Within the Maldives, this form of fishing is currently unregulated, and fishing methods include jigging and popping. Jigging involves moving bait up and down through the water to capture a diverse range of species that include snapper, grouper, tuna, and wahoo; while popping uses a surface lure called a "popper" to attract top-feeding fish like trevally and tuna. These two forms of fishing are primarily practiced by young Maldivian men who like to document their catch on social media. Details posted on Instagram commonly include data on where a species was caught, plus its weight and size.

In 2024, MRR supported a project by a University of Exeter (UK) MSc student to investigate the spatial composition of the Maldivian recreational fishery based on data mining of Instagram posts. To examine the fishery's socioeconomic profile, the importance of it to participants, and attitudes of the latter towards their fish stocks, an online questionnaire was completed by 33 sport fishers who identified as belonging to one of the following groups: professionals in the sport fishing sector, Maldivian recreational sport fishers, or overseas tourists. Analysis of Instagram posts revealed that for 2024, 72 species of fish from 20 families were caught by participants from 25 islands in 16 atolls. The most frequently caught fish was giant trevally, with groupers, snappers, and tuna all commonly caught. The study also found that sport fishing professionals expressed greater concern for the sustainability of target species than was shown by local recreational fishers and tourists. In providing the first characterization of the Maldivian deep reef sport fishery, this research highlights an urgent need for it to become effectively managed.

Sustainability challenges faced by the sea cucumber fishery in Laamu Atoll

The sea cucumber fishery in the Maldives, which began in the 1980s, has shifted from targeting high-value species in its early days, to mostly harvesting low-valued species currently. While around 1,200 individuals are believed to be involved in this fishery, the true extent of the fishery remains unclear due to monitoring challenges. Though wastewater from processing sea cucumbers, which contains toxins that can harm reef fish and bait species, is supposed to be disposed of away from lagoons and reefs, this practice continues due to inadequate enforcement, leading to environmental degradation.

In 2024, we supported a University of Exeter (UK) MSc student in a project to assess the sustainability challenges of the sea cucumber fishery in Laamu Atoll. Through interviews with ten key stakeholders, the study evaluated current management practices and compliance with the Maldives Sea Cucumber Management Plan 2020. Key issues identified included environmental degradation associated with fishing and processing, financial constraints affecting local sea cucumber farming, monopolistic practices by exporters that disadvantage local stakeholders, and a lack of awareness and engagement among stakeholders in developing and implementing fisheries management plans.

2.2 Promoting Responsible Tourism

In 2024, we developed a specific "Responsible Tourism" module on our Masmahaaveshi e-learning platform, to raise awareness of the importance of operators conducting their tourism activities in a sustainable way. The module was launched in February during an event co-hosted by MRR and Blue Marine in Male' titled "Preserving Nature through Responsible Tourism – a Dialogue," which attracted 41 stakeholders from the government and industry. The module features a concise one-minute video and three engaging infographics that convey key messages: the benefits of tourism for local communities, the hidden costs associated with tourism, and proposed solutions for responsible practices. It concludes with a quiz to test participants' knowledge and provides a downloadable certificate upon completion. In November, the team conducted three in-person training sessions for Six Senses Laamu hosts, with over 300 participants successfully completing the module.

Guest education and awareness

The opening of the SHELL (Sea Hub of Environmental Learning in Laamu) at Six Senses Laamu in March 2023 provided new opportunities for MRR and Blue Marine to engage in educational activities with guests and hosts. In 2024, the team engaged over 1900 guests, 100 hosts and 280 community members through various activities, including SHELL tours, training, presentations, snorkels, manager's cocktail party and spontaneous interactions. Additionally, 559 guests were engaged in citizen science on 181 recreational fishing trips. Training in the newly developed Code of Conduct for resort recreational fishing trips was provided to 18 hosts, including boat crew and the front office staff. The training covered the safe handling of fish, best practices, and catch and release protocol.

2.3 Understanding the impacts of nitrogen pollution to improve management

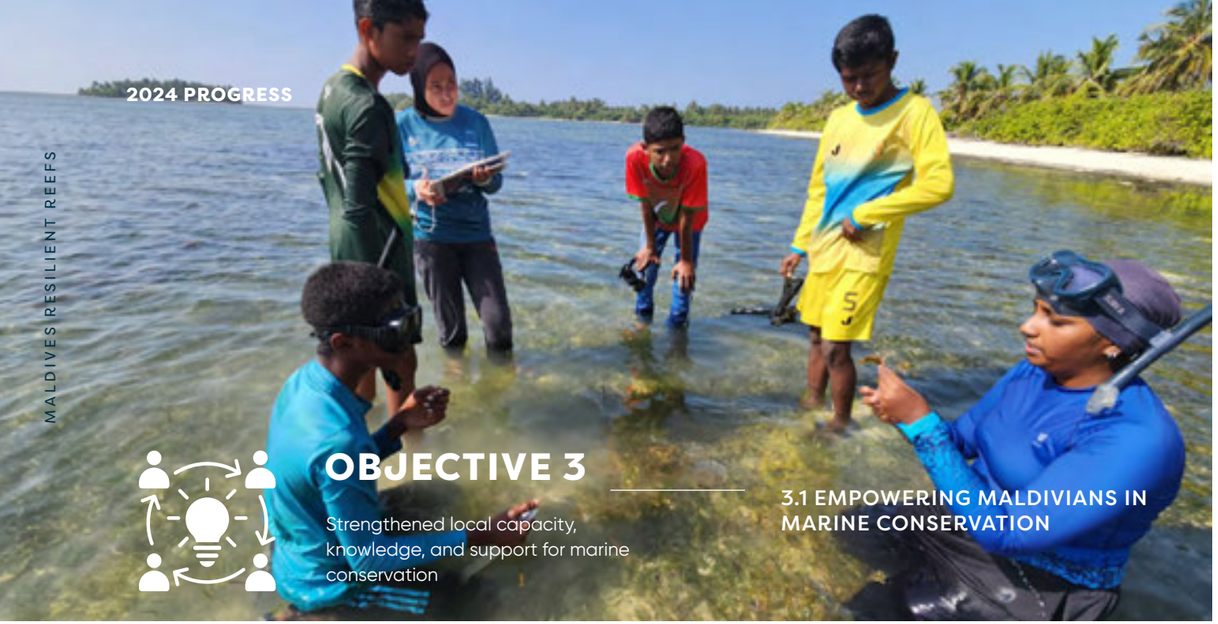
An additional paper on seagrass sensitivity to nutrient addition is currently under peer review. Nitrogen pollution poses a significant threat to coastal marine environments, particularly in South Asia, where its effects are poorly understood. Eutrophication can harm marine biodiversity, inhibit coral recruitment, and increase coral susceptibility to bleaching. While research exists in other tropical regions, there is limited knowledge of how nitrogen impacts South Asia's coral reefs and seagrass ecosystems.

From January 2022 to August 2024, MRR participated in the South Asian Nitrogen Hub (SANH) project, aimed at addressing nitrogen management challenges by collaborating with over 40 research organisations. This project involved identifying nutrient sources and concentrations in different settings across Laamu Atoll, investigating the impact of nutrient enrichment on coral bleaching susceptibility, and assessing seagrass's role in nutrient cycling.

In February, MRR completed island water-nutrient sampling, and ended an 18-month coral-nutrient enrichment in July. This experiment monitored coral bleaching health with coral isotope and water-nutrient analysis conducted at the University of Edinburgh and Scottish Association for Marine Science. Additionally, an online survey in March garnered 145 responses, revealing that 80% of participants had a positive perception of seagrass.

In August, we held an event in Laamu Atoll, which brought together stakeholders to share research findings and discuss waste management and sustainable nitrogen use. MRR also launched an educational module titled "Nitrogen: The Key to Life" on the Masmahaaveshi e-learning hub to raise awareness about nitrogen's ecological role and its challenges.

In 2024, in collaboration with The University of Edinburgh, we published a study on seagrass' response to nutrient enrichment. The research showed that nitrogen enrichment promoted leaf production but encouraged an algal outbreak at one site. These findings highlight the context-dependent nature of seagrass responses to nutrient enrichment and the need for ongoing monitoring and policy development regarding nutrient management.



OBJECTIVE 3

Strengthened local capacity, knowledge, and support for marine conservation

3.1 EMPOWERING MALDIVIANS IN MARINE CONSERVATION

Internships for Maldivians

In 2024, MRR provided two internships for Maldivians based at Six Senses Laamu. Dua Abdulla successfully completed a five-month internship from March to August, while Afaaz Zahid, a Maldivian Master's student from The University of the South Pacific in Fiji, completed a three-month internship from September to December. For his master's thesis, anticipated in 2025, Afaaz was given access to MRR's long-term grouper spawning survey data collected at Hithadhoo Corner from 2016 and 2024.

Engaging communities in citizen science

Recognizing that conservation efforts are most effective when rooted in local knowledge and ownership, MRR and Blue Marine have been offering citizen science training in Laamu Atoll, with a focus on coral reef and seagrass monitoring. These trainings are designed to build awareness and practical skills among community members, with several programmes delivered in collaboration with national frameworks and technical partners.

By the end of 2024, a total of 18 residents had completed Open Water Diving certification, nine had undertaken Advanced Open Water training, six had successfully completed the Reef Check Eco Diver course, and seven were trained in the National Coral Reef Monitoring Framework. Six trainees also participated in MRR-led coral reef monitoring expeditions and clean-up dives, applying their new skills in real-world reef monitoring activities. These efforts continue to strengthen local stewardship and contribute to ongoing environmental monitoring and resilience-building in Laamu Atoll. In November, we secured a small grants project with Maldives' Ministry of Climate Change, Environment and Energy (MCCEE)'s project on Enhancing National Development through Environmentally Resilient Islands (ENDhERI) to train additional community members in coral reef monitoring and increase their involvement reef monitoring efforts.

School education programme

In 2024, the MRR and Blue Marine team actively participated in MUI's annual education programme, "Hello Hallu" (Hello Solution), aimed at secondary schools in Laamu Atoll. We welcomed 180 students and 59 teachers from 12 schools for a full day of engaging learning activities, including hands-on sessions and quizzes. Our educational focus centered on sustainable fisheries, highlighting the importance of Marine Protected Areas and protected species. Presentations were delivered through our e-learning hub, Masmahaaveshi, and links to the site were emailed to each school after the sessions. Additionally, outreach sessions were conducted with students from Mundoo and Maabaidhoo schools, with a total of 26 students participating in the Mission Blue Hope Spot Expedition.

3.2 Promoting the importance of marine ecosystems

Masmahaaveshi e-learning portal

In 2023, MRR and Blue Marine launched the online education platform Masmahaaveshi, which means "fish, marine life, and their habitats" in Dhivehi. This project aims to raise awareness among fishers and the public about Maldivian marine habitats and sustainable fishing practices. The platform initially offered five modules, available in both Dhivehi and English: 1) Our Precious Reefs, 2) The Secret Lives of Reef Fish, 3) Fish with Care, 4) Conservation in Action, and a specialist module 5) Laamaseelu Masveriyaa Programme.

In 2024, four additional modules were added: 6) Responsible Tourism, 7) The Key to Life, 8) A Warming World, and 9) Seagrass Superheroes, with a tenth module on sharks currently under development. To date, Masmahaaveshi has been utilised by over 200 school children and teachers, more than 100 fishers, and approximately 300 resort workers.

Maldives Marine Science Symposium

At the fifth Maldives Marine Science Symposium in Male,' MRR and Blue Marine delivered two oral presentations and showcased three posters. Shaha Hashim presented her MRes research on historical reference points for marine resources in the Maldives, while Jake Edmiston shared findings from a fish and seafood sourcing survey aimed at understanding how tourism operators obtain local seafood.

The three poster presentations included: 1) Indian Ocean Dipole-driven Sea Level Rise Triggers Large Scale Mangrove Dieback, 2) Seagrass is an Early Responder to Nutrient Enrichment in Oligotrophic Environments, and 3) Baseline Assessment of Water Quality in Laamu Atoll. Additionally, MRR contributed to other projects highlighted at the symposium, including findings from the Maldives Nekton mission and research conducted by MUI.

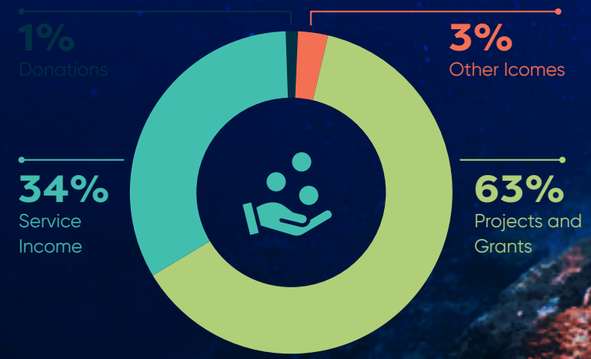
3.3 Campaigning and advocacy to safeguard the ocean

#AgainstLonglining

In response to the Maldivian government's draft regulation allowing longlining licenses and permitting the landing of dead shark bycatch in August 2024, MRR played a pivotal role in launching the #AgainstLonglining campaign. This initiative aimed to amplify the voices of local one-by-one fishers and raise awareness about the negative consequences of longlining, including overfishing, high bycatch rates of vulnerable species like sharks and turtles, and overall degradation of marine ecosystems.

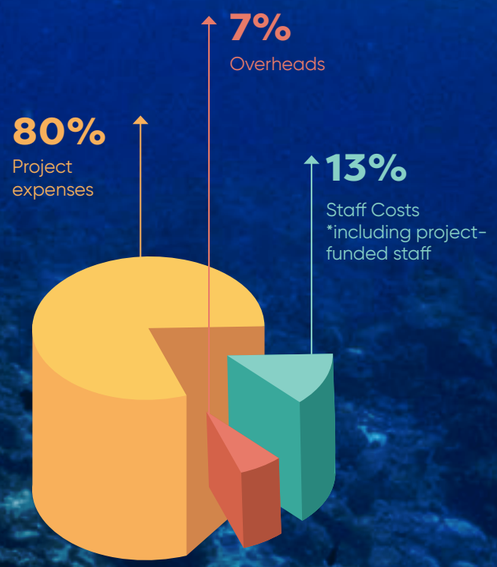
Within three weeks, the online petition garnered over 30,000 signatures, while the social media campaign reached 8.2 million impressions and received support from celebrities such as wildlife presenter Steve Backshall. Coordinated by the alliance, more than 170 scientists signed an open letter to the government expressing their concerns. By the end of August, the government officially reversed its decision to permit longline fishing. In less than a month, the campaign effectively mobilised public support and achieved its objective.

FUNDING AND FINANCE



INCOME

The year ended with a total revenue of over MVR 4.45 million, a 140% increase from the previous year. This was achieved by diversifying our income streams in line with MRR strategic plan. We continued our grant-funded work in 2024, representing 63% of total income. In 2024, there was a significant increase in our service income with the successful conclusion of two consultancy agreements with the Ministry of Climate Change, Environment and Energy. This accounted for 34% of the total income in 2024. We also raised over MVR 25,000 in donations from merchandise sales.



EXPENDITURE

Total expenditure for the year ending 31st December 2024 was MVR 2.97 million, a 63% increase from the previous year. In 2024, we ramped up our efforts in pursuit of our charitable objectives, expending 80% of total expenditures on projects. Our successes are results of the tireless effort from our team. Staff remunerations, welfare and trainings accounted for 13% of total expenditures. MRR continues to invest in organisational development, to minimise administrative and operational overheads, which represented only 7% of the annual expenditure.

"SHUKURIYAA"

The success of our work depends on the generosity of our donors and collaborators. We extend our heartfelt thanks to everyone who has contributed to the Maldives Resilient Reefs mission.

We would like to express our heartfelt gratitude to the **Blue Marine Foundation**, which played a crucial role in establishing our NGO and has provided both project and core funding to MRR throughout our partnership. In addition to the direct support from their dedicated team members, we continue to benefit from the guidance offered by Blue Marine's various units: Blue Education, Blue Media, Blue Science, and Blue Climate.

We deeply appreciate our strategic long-term partnership with **MUI by Six Senses Laamu**, which has allowed us to pilot innovative projects and enhance marine protection efforts in Laamu Atoll. We are also grateful for our new collaboration with **Amilla Maldives**, who have enthusiastically adopted our Laamaseelu Masveriyaa programme. Furthermore, we extend our thanks to **Six Senses Kanuhuraa** and **Ayada Maldives** for their support in rolling out this programme to their resorts.

Our achievements this year would not have been possible without the generous funding from the **UNDP GEF Small Grants Programme, Canada Fund for Local Initiatives, UK Centre for Ecology and Hydrology, The Commonwealth Foundation, The Ocean Foundation**, and **The University of New South Wales**, and **University of Exeter**. Their financial contributions have played a vital role in supporting our projects in various capacities. We would like to extend our heartfelt gratitude to **The University of Edinburgh, Northumbria University, East Carolina University, Southern Cross University**, and **Secret Paradise** for their invaluable in-kind support of our projects. Additionally, we appreciate the leadership coaching and networking opportunities offered by the **Edinburgh Ocean Leaders** programme, which have significantly enhanced our Executive Director's ability to expand our impact and reach both nationally and internationally.

Our work would not be possible without the support of our national and local government partners. We appreciate the support of the **Maldivian Government** in facilitating and endorsing our initiatives. We especially extend our gratitude to the **Ministry of Climate Change, Environment and Energy** for entrusting us with the delivery of two consultancy projects in Laamu Atoll and the **Ministry of Tourism** for their collaboration on the seafood sourcing survey in the tourism sector. We also appreciate the support of the **Ministry of Fisheries and Ocean Resources** for their support to our sustainable fisheries programmes.

In Laamu Atoll, we extend our gratitude to the **Laamu Atoll Council** for their ongoing support of our projects and to **Laamu Hithadhoo Council** for their dedication to establishing a Community Conserved Area on their island. We also appreciate the contributions from **all 11 Island Councils in Laamu Atoll** for their assistance in fisher and community engagement, including our "Old Man and the Sea – Maldives" research. Support for this research was also provided by the **Island Councils of Haa Alifu Ihavandhoo, Dhihdhoo, and Haa Dhaalu Kulhudhuffushi, Neykurendhoo, and Makunudhoo**.

Additionally, we thank the **Baa Atoll Island Councils of Dhonfanu, Kamadhoo, Kendhoo, Kihaadhoo, and Kudarikilu**, as well as the **Lhaviyani Atoll Island Councils of Hinnavaru, Kurendhoo, Naifaru, and Olhuvelifushi, and the Gaafu Dhaalu Atoll Island Councils of Faresmaathodaa, Gadhdhoo, Kanduhulhudhoo, and Vaadhoo**, for their engagement in fisher engagement activities. We are also grateful to the **Island Councils of Haa Dhaalu Neykurendhoo and Finey, along with Gaafu Dhaalu Hoandedhdhoo and Fiyoari**, for their support in the mangrove die-back study.

Finally, we would like to extend our heartfelt thanks to the community we represent. The **Bodu Kanneli Masveringe Union** and **Maldives Ocean Alliance** played a pivotal role in the success of the #AgainstLonglining campaign. We are immensely grateful to the **fisherfolk** who share their knowledge, challenges, and needs with us. This collaboration is central to our mission, and we remain committed to serving them and protecting the natural capital upon which our lives and livelihoods depend.

DONORS

Blue Marine Foundation
Six Senses
Commonwealth Foundation
SGP The GEF Small Grants Programme
gef
UNDP Empowered lives. Resilient nations.
Ministry of Tourism and Environment
ENDhERI
UN environment programme
gef
NOAA
The Ocean Foundation
Secret Paradise Maldives
CFLI/FCIL Canada Fund for Local Initiatives Fonds canadien d'initiatives locales
The University of Edinburgh
University of Exeter
UNSW Sydney
Edinburgh Ocean Leaders
UK Centre for Ecology & Hydrology
UKRI GCRF South Asian Nitrogen Hub

OUR PEOPLE

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Aminath Shaha Hashim
Hassan Hameez

EXECUTIVE COMMITTEE MEMBERS

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Ahmed Riyaz Jauharee (General Secretary)
Hudha Ahmed (Financial Controller)
Ahmed Shafiu (General Member)
Vaail Mohamed Zahir Hussain (General Member)
Dr Judith Brown (General Member)

OUR TEAM

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Dr Judith Brown (Blue Marine's Projects Director)
Inan Ahmed (Project and Finance Manager)
Aishath Mufliha Ziyad (Project Coordinator – Mangroves and Seagrasses)
Jenny Baker (Blue Marine's Laamu Project Manager)
Jake Edminston (Blue Marine's Projects Researcher)
Hassan Moosa (Education and Outreach Officer)
Maryam Mashaahy Mueed (Programme Officer)
Afaaz Zahid (Resort Research and Fisheries Officer/ Intern)
Mohamed Tholal (Laamu hithadhoo Environment Officer)
Fathimath Dhuaa Abdullah (Intern)

Photo by **Jake Edmiston**

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Nisha Goldsworthy (Research Coordinator, MUI at Six Senses Laamu)

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Aishath Sumeetha (L. Isdhoo)
Hussain Hoodh Abdulla Waheed (L. Maamendhoo)
Ali Shafeeu (L. Mundoo)
Mariyam Suzana (L. Kalaidhoo)
Ali Hafeez (L. Dhanbidhoo)
Ali Faisal (L. Maabaidhoo)
Ahmed Rameez (L. Kunahandhoo)

OUR LAAMASEELU FARUDHUN CITIZEN SCIENTISTS

Ibrahim Inan (L. Gan)
Ahmed Shaafee (L. Gan)
Abdulla Naseem (L. Kalaidhoo)
Ahmed Rameez (L. Kunahandhoo)
Aslam Mukhuthaar (L. Maamendhoo)
Ahmed Latheef (L. Maamendhoo)
Ali Shafeeu (L. Mundoo)
Hussain Niam (L. Gan)
Ahmed Mohamed (L. Hithadhoo)
Abdul Wahidh Idris (L. Hithadhoo)

“we are dedicated to restoring Maldivian coral reefs as climate resilient ecosystems that benefit both people and nature”

Photo by **Marteyne van Well**

Photo by **Matt Porteous**

“In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught.”

Baba Dioum

MALDIVES
Resilient Reefs

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