

Awareness, Training & Demonstration of Sustainable Fisheries in Laamu Atoll



Report on awareness, training and demonstration sessions conducted on sustainable fisheries practices at Laamu Atoll *Prepared by Enhancing National Development through Environmentally Resilient Islands (ENDhERI) Project for the Ministry of Tourism and Environment.*

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Report on capacity building trainings conducted for Laamu Atoll Council and all Island Councils for systematic reporting on the required data for MFOR *Prepared by Enhancing National Development through Environmentally Resilient Islands (ENDhERI) Project for the Ministry of Tourism and Environment.*

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The background is a solid blue color with a faint, intricate line-art illustration of a marine ecosystem. It features various fish species, including a large tuna-like fish in the center, smaller fish, and a squid. There are also depictions of coral reefs, seaweed, and bubbles. The illustration is rendered in a lighter shade of blue, creating a subtle pattern behind the text.

Report on Awareness, Training & Demonstration of Sustainable Fisheries in Laamu Atoll

Abbreviations and Acronyms

ENDhERI	Enhancing National Development through Environmentally Resilient Islands
GEF	Global Environment Facility
MCCEE	Ministry of Climate Change, Environment and Energy
MFOR	Ministry of Fisheries and Ocean Resources
MRR	Maldives Resilient Reefs
NC	Natural Capital
NGO	Non-Governmental Organisation
PMU	Project Management Unit
UNEP	United Nations Environment Program
WDC	Women's Development Committee

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Executive Summary

Fishers are the backbone of the Maldivian economy, playing a crucial role in marine resources and ecosystem services. Promoting sustainable fishing practices among them is essential to maintaining a healthy ocean and safeguarding the livelihoods of dependent communities. To this end, Maldives Resilient Reefs, 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. Moreover, awareness sessions for school students were held to deepen their understanding of the significance of sustainable fisheries management.

The training covered vital topics such as fisheries laws and regulations, proper onboard fish handling, best practices for bait fisheries, innovative sustainable technologies, vessel efficiency improvements, and enhancing the quality and value of processed fish. A total of nine sessions were conducted from January to August 2024, 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. These recommendations aim to guide fisheries and environmental agencies toward fostering a sustainable, resilient, and economically viable fishing industry that ensures ecological balance and supports community livelihoods.

1. Introduction

1.1 Background

The Maldives Ministry of Climate Change, Environment and Energy (MCCEE) is implementing the Enhancing National Development through Environmentally Resilient Islands (ENDhERI) project. This initiative, funded by the Global Environment Facility (GEF) and supported by the United Nations Environment Program (UNEP), aims to facilitate the adoption of new environmental policies and the transition toward Green Growth atoll development. The strategy aims focuses on sustaining marine Natural Capital (NC) and bolstering the resilience and recovery of reef ecosystems.

The project employs integrated coastal zone management within a Managed Marine Area/Biosphere Reserve framework, exploring sustainable practices across sectors such as agriculture, fisheries, tourism, and construction. The primary objective is to positively transform the ecological impact in Laamu Atoll, leading to broader national transformation in spatial planning and governance, reinforced by NC accounting.

The consultancy assignment to *“Conduct Training, Awareness and Demonstration of Sustainable Fisheries Practices at Laamu Atoll”* was awarded to Maldives Resilient Reefs (MRR), a local Non-Governmental Organisation (NGO) dedicated to restoring coral reefs in the Maldives as climate resilient ecosystems for the benefit of people, nature and the economies that depend on them¹. The main objective is to enhance the knowledge and awareness of the fishers and fish processors in Laamu Atoll regarding sustainable fisheries practices.

Laamu Atoll, located in the southern central region of the Maldives, features rich coral reefs, mangroves, and diverse marine life. It spans an area of 884.63 km² with 56 reefs covering an area of 203.70 km². Of the 99 islands, 11 are inhabited, hosting a population of 18,281 people. Fisheries, alongside agriculture are the primary economic activities in Laamu Atoll, as per the Maldives Bureau of Statistics.

Each inhabited island in Laamu Atoll is governed by an island council, led by elected councilors, alongside a Women's Development Committee (WDC). The capital island, Fonadhoo, serves as the atoll's administrative center and hosts the Atoll Council, comprising an elected president and the presidents of all island councils.

1.2 Scope

The report provides a summary of awareness, training and demonstration sessions conducted at Laamu Atoll between November 2023 and September 2024 on sustainable fisheries practices.

¹ MRR's strategic intervention areas are: 1) Increasing effective marine protection to build climate resilience; 2) Improving the sustainability of reef-based fisheries; 3) Improving environmentally responsible tourism; and 4) Strengthening local capacities for marine resource management in the Maldives. MRR is officially affiliated with UK charity, Blue Marine Foundation. Blue Marine has a vision of a healthy ocean forever, for everyone.

2. Training sessions and participants

2.1 Training Material

The training material developed by MRR in Dhivehi was reviewed by MCCEE and the Ministry of Fisheries and Ocean Resources (MoFOR). All proposed changes were incorporated into the final presentations.

2.2 Training Sessions

The training sessions were tailored for distinct target groups, including local councils and Women's Development Committees (WDCs), tuna and reef fishers, fish processors and traders, and schools. Between January and August 2024, nine sessions were held (see Table 1), covering the following topics:

- Awareness of fisheries laws and regulations.
- Correct onboard fish handling techniques.
- Bait fishery best practices.
- Introducing new technology which enables to improve catch with sustainable measures.
- How to increase the efficiency of fishing vessels.
- Improving the quality of fresh and processed fish

The training took place in a climate-controlled indoor space. Weather forecasts were monitored by MRR three and one day before each session. A two-way knowledge exchange between facilitators and fishers was encouraged. MRR assured participants that any issues or concerns raised would remain confidential unless explicit permission to disclose names was given. Filming was not conducted during sessions; only photographs were taken. Audio recordings were to be deleted once the training report was completed.

Participants wishing to be filmed were invited to do so during dedicated filming sessions after signing a consent form for the use and distribution of the videos by MRR and ENDhERI. Flipcharts and sticky notes were available for participants to leave feedback during the sessions. At the end, they were asked to complete a feedback form. Participant questions and comments on flipcharts were addressed at the session's conclusion. Additionally, participants were informed about future training opportunities and asked to help identify attendees for subsequent sessions.

2.3 Training Participants

The project engaged 189 community members from Laamu Atoll, comprising 116 males (69%) and 73 females (39%) (See Table 1 for details)

Participant Selection Techniques:

- **Council and WDC Training:** Invitations were sent to the atoll and island councils, requesting nominations for four participants per island, including at least one council member, two technical staff, and one WDC representative, aiming for 50% female participation. This resulted in 41 participants from 11 islands, equally divided between men and women.
- **Fisher Training Sessions:** Initially, MRR used social media ads targeted at the Laamu Atoll community through their Facebook page to invite fishers. Letters were also sent to island councils, and MRR contacted fishers in its database and through the tuna fisher Viber group of the Fairtrade associations in Laamu Atoll. Despite many showing interest, scheduling conflicts prevented some from attending. Three sessions were held in Laamu Kadhdhoo,

with two being two-day events. In total, 50 fishers from eight islands participated, predominantly male, reflecting the composition of the Maldivian tuna fishing industry, which is primarily male, with minimal female involvement in reef fishing.

- **Fish Traders and Processors Training:** Invitations were sent via letters to island councils, and individual contacts were made with processors and traders in MRR's database. Although 17 expressed interests, only eight attended the session in Laamu Maandhoo, mostly men, with one woman participating.
- **School Awareness Sessions:** Conducted with permission from the Ministry of Education's school activity unit, schools nominated students and teachers to participate. A total of 86 students and 3 teachers from five schools joined these sessions, with 55% being female.

Table 1: List of training sessions, topics covered and participant details.

Stakeholder Group	Topics Covered	Sessions and Participants
Atoll and Island Councils and WDCs	<ul style="list-style-type: none"> - Introduction to marine ecosystems. - Status of global, Maldivian and Laamu Atoll fisheries. - Fisheries Management and its importance. - Fisheries management laws and regulations. - The responsibilities of different entities - Protected areas and species. - Keystone and ecologically vulnerable species. - Use of fisheries data for fisheries management. - Fisheries data collection sources and logbooks. - Masveringe dhaftharu 	<p>Date: January 30, 2024 Location: Laamu Fonadhoo Participants: 41 (21 men, 20 women) From: 11 island councils, 10 WDCs, 1 atoll council</p>
Tuna and Reef Fishermen	<ul style="list-style-type: none"> - Introduction to marine ecosystems. - Status of global, Maldivian and Laamu Atoll fisheries. - Fisheries Management and its importance. - Fisheries management laws and regulations. - The responsibilities of different entities - Protected areas and species. - Keystone and ecologically vulnerable species. - Use of fisheries data for fisheries management. - Fisheries data collection sources and logbooks. - Fisheries licensing (the process, importance, offences, and penalties) - Livebait – scoop, changes to bait tank. - Fisheries technology – Bird radar, fish finder, stabilizer binoculars, RSW, and how to increase efficiency. - Onboard fish handling – RSW, ice fish ratio, caring for the catch 	<p>Dates: February 16-17, 2024; March 1-2, 2024; May 23, 2024 Location: Laamu Kadhdhoo Participants: 50 (47 men, 3 women) From: 8 islands</p>
Fish Processors and Traders	<ul style="list-style-type: none"> - Status of fish processing and trade in the Maldives. - Fish as food and fish spoilage. - Fish preservation and processing. - Fish processing stages and considerations. - Sensory evaluation of raw and cooked fish. - Importance of safety and hygiene. 	<p>Date: July 11, 2024 Location: Laamu Maandhoo Participants: 8 (7 men, 1 woman) From: 3 islands</p>

	<ul style="list-style-type: none"> - Demonstration of how to check the quality of cooked fish and Horizon Fisheries Complex tour. 	
School Students	<ul style="list-style-type: none"> - Introduction to marine ecosystems. - Status of global, Maldivian and Laamu Atoll fisheries. - Fisheries Management and its importance. - Fisheries management laws and regulations. - The responsibilities of different entities - Protected areas and species. - Keystone and ecologically vulnerable species. 	<p>Dates: January 31, 2024; February 28, 2024; March 3, 2024; August 25, 2024</p> <p>Locations: Various schools</p> <p>Participants: 89 (40 boys, 49 women and girls)</p> <p>From: 5 schools</p>

3. Fisheries Law and Regulations

3.1 Participants

The target reach for this training was successfully met, engaging 102 community members and 86 school students, with 55% of the students being girls, exceeding the goal of 50%. Additionally, the sessions aimed to have 50% of trainees registered according to fisheries laws and regulations. This target was achieved, as all 50 fishers in attendance verbally confirmed their compliance with registration requirements.

3.2 Training topics

3.2.1 Marine ecosystems

Participants received comprehensive information on the critical marine ecosystems of the Maldives, specifically coral reefs, seagrass beds, mangroves, and the open ocean. The discussion covered the essential services these ecosystems provide, such as habitat, food, and breeding grounds for a diverse range of marine life. The role of these ecosystems in supporting the life cycles of different organisms was thoroughly examined, illustrating how various species depend on these habitats at different stages of their development.

The session emphasized the dynamic transitions of organisms as they move between these ecosystems throughout their lives, highlighting the interconnectedness and interdependence of these environments. For example, many species rely on seagrass for shelter and food during their juvenile stages but migrate to coral reefs or open ocean habitats as they mature.

Participants also contributed their local knowledge about the marine ecosystems in Laamu Atoll, sharing observations on the health and status of these areas. They discussed the unique characteristics of these ecosystems in Laamu Atoll and their importance in sustaining local biodiversity. The conversation included specific examples of how the preservation of these habitats directly impacts the productivity and health of the fisheries in the region.

Overall, the significance of maintaining and protecting these vital ecosystems was discussed, with a focus on how their conservation is crucial for ensuring the long-term sustainability of fisheries in Laamu Atoll and the broader Maldives region.

3.2.2 World and Indian Ocean Fisheries

Globally, fisheries face significant challenges due to overfishing, habitat destruction, and climate change. According to the Food and Agriculture Organization (FAO), about 34% of global fish stocks are overexploited, depleted, or recovering from depletion. Illegal, unreported, and unregulated (IUU) fishing also poses a serious threat to sustainable fisheries. Participants were briefed on the world and the Indian Ocean fisheries. The scale of fisheries activities and the most widely exploited species.

3.2.3 Maldives and Laamu Atoll fisheries

To enhance awareness among the fishers of Laamu Atoll about global fisheries trends and the historical changes within these fisheries, participants were introduced to the concept of shifting

baselines. This concept explains how our perception of what is "normal" in a fishery change over time as ecosystems evolve and resources become depleted.

The session featured in-depth discussions on the evolution of various fisheries in the Maldives. Participants examined how certain fisheries have changed over time, focusing on specific examples where resources were so severely depleted that they led to complete bans. This provided a tangible context for understanding how shifts in fisheries can impact local communities and ecosystems.

Participants were encouraged to share their personal experiences and observations related to shifting baselines within Laamu Atoll. They discussed changes they have witnessed over their lifetimes, providing a valuable perspective on how local fisheries have evolved.

The session also included a detailed exploration of the different fisheries conducted in Laamu Atoll. An overview was provided on the various fishing activities prevalent in the region, including estimates of the number of fishers engaged in these practices. Key fishing grounds were identified and discussed, highlighting their significance to the local fishing community.

To facilitate a deeper understanding, participants were organized into groups and tasked with presenting their knowledge about the fisheries they have been involved in throughout their careers. This group work allowed them to share their insights, experiences, and observations, contributing to a richer discussion on the state of fisheries in Laamu Atoll and beyond.

3.2.4 Fisheries management and its importance

Managing fisheries resources was the most important topic that was discussed at the training. Techniques used in different parts of the world for managing marine resources and how these techniques are used in the Maldives were discussed. Importance of sustainable use of resources was emphasized. Participants were informed of the reasons for effective fisheries management:

- **Sustainable Resource Use:** Ensures that fish populations are harvested at levels that allow them to replenish and maintain their populations over time.
- **Economic Stability:** Supports the livelihoods of millions of people worldwide who depend on fishing for their income, including both commercial and artisanal fishers.
- **Ecological Balance:** Helps maintain the health of marine ecosystems, which can be disrupted by overfishing and other human activities.
- **Food Security:** Provides a significant source of protein for billions of people globally. Proper management ensures that this resource remains available for future generations.

During the workshop participants were also made aware that by balancing ecological, economic, and social factors, fisheries management aims to achieve long-term sustainability and resilience of marine resources.

The evolution of fishing activities in the Maldives was examined, focusing on technological advancements and the increased fishing effort required due to declining fish stocks. The discussion highlighted the interconnectedness of various species and their ecosystems, underscoring the importance of ecosystem conservation.

Participants engaged in an activity where they identified their favorite fish species, their habitats, and the fishing gears used to capture them. The effectiveness of different gears and their usage was

analyzed, including a discussion on why some gears are preferred over others and why large nets are not utilized in Maldives fisheries.

3.2.5 Fisheries management laws and regulations

Fisheries management laws and regulations are crucial to ensure the sustainable exploitation of resources. Some of the ways in which fishing activities are restricted and monitored were discussed. These included:

- **Catch Limits:** Establish maximum allowable catches for different species to prevent overfishing. These limits are based on scientific assessments of fish stocks.
- **Seasonal Closures:** Implement periods during which fishing is restricted or prohibited to allow fish populations to spawn and recover. For example, many regions have spawning season closures for commercially valuable fish species.
- **Gear Restrictions:** Regulate the types and sizes of fishing gear used to minimize bycatch (the capture of non-target species) and reduce environmental damage.
- **Size Limits:** Set minimum and maximum size limits for fish that can be harvested to ensure that individuals can reproduce before being caught and protect breeding stocks.
- **Reporting Requirements:** Mandate that fishers record and report their catches, which helps authorities monitor fishing activities and enforce regulations.

Compliance with these regulations is essential for maintaining sustainable fisheries and protecting marine ecosystems.

During the session, various laws and regulations related to fisheries in the Maldives were reviewed with the participants. The discussion focused on how these laws contribute to the sustainability of fishery resources and benefit the fisheries. Additional important regulations pertinent to fishers were also presented, ensuring that all relevant information was shared.

MRR referred to the applicable Laws and Regulations of the Maldives while providing recommendations for fisheries management. It was clearly communicated when any voluntary fisheries management measures were suggested. Participants were assured that their feedback and opinions would be included in the training report, which would be submitted to the MCCEE and MFOR.

Participants were also informed about the protected species in the Maldives. Discussions covered the reasons these species are protected and their ecological benefits. Additionally, information about species banned from export and marine protected areas (MPAs) in the Maldives was shared. The session included a focus on marine protected areas within Laamu Atoll, highlighting their significance and the benefits they provide to the local environment and fisheries.

3.2.6 Roles and Responsibilities

The participants were made aware of the important roles of the different agencies in managing and sustainable exploitation of the resources.

Government Agencies: Develop and enforce fisheries policies, conduct scientific research, and monitor compliance. Agencies may include departments of fisheries, environmental protection, and marine affairs.

Fishing Communities: Implement and adhere to sustainable fishing practices. Local communities often play a key role in managing small-scale fisheries and protecting marine resources through traditional knowledge and practices.

Research Institutions: Provide scientific data and analysis to support management decisions. Institutions may conduct stock assessments, habitat studies, and research on the impacts of fishing.

NGOs and Advocacy Groups: Advocate for conservation and sustainable fishing practices, raise public awareness, and support policy changes. These organizations often work on projects related to marine protection, habitat restoration, and community education.

The session also highlighted the importance of collaborations between agencies, which are crucial for resources management.

3.2.7 Permitted and prohibited fishing activities

Information on fishing gear and methods was shared with all the participants during the training. Internationally used common fishing practices were discussed and the reason for banning some of the gears in the Maldives were highlighted. Both environmental impacts and impacts on the resources were highlighted. The importance of sustainable exploitation of resources was discussed. Fishing gears banned in the Maldives that were discussed included:

- Purse seine
- Gillnet
- Trawl net
- Explosives

Operations of other permitted gears such as pole and line, handline, dropline, troll line, jigging and casting were discussed.

3.2.8 Protected species and areas

The participants were thoroughly informed about illegal fishing activities and prohibited fishing gear in the Maldives. This included a detailed explanation of the types of fishing gear that are considered illegal and the specific activities that fall outside legal boundaries. The session highlighted the serious consequences and penalties associated with the use of such prohibited gear, showing the importance of adhering to regulations to preserve marine ecosystems.

Comprehensive information was provided about all protected species in the Maldives. Participants learned about the different species that are legally protected and the reasons for their protection. Emphasis was placed on the ecological significance of these species, including their roles in maintaining the balance and health of marine ecosystems.

In addition, fishers received valuable information regarding marine protected areas (MPAs) and their essential role in sustainable fisheries management. The discussion covered how MPAs function to safeguard marine environments, enhance biodiversity, and support the overall health and productivity of fisheries. Participants were educated on how the establishment and management of MPAs contribute positively to the long-term sustainability of fisheries resources, benefiting both the environment and the fishing community.

Overall, the session aimed to equip participants with a thorough understanding of legal and ecological aspects of fisheries management, encouraging practices that support the conservation and sustainable use of marine resources.

3.2.9 Keystone and ecologically vulnerable species

The workshop successfully increased awareness about keystone and ecologically vulnerable species in the Maldives, highlighting their critical roles and the challenges they face. By addressing these issues and reinforcing the importance of legal protections and MPAs, the session helped to foster a collaborative approach to marine conservation. Participants left with a deeper understanding of how they can contribute to the preservation of these vital species and the health of marine ecosystems.

3.2.10 Use of fisheries data

During this session, participants were made aware of the importance of fisheries data and how it is used for managing fisheries in the Maldives. Some of the important points discussed included:

- **Stock Assessment:** Estimating fish populations and distribution to determine sustainable catch limits.
- **Management and Regulation:** Setting quotas and regulating fishing methods to prevent overfishing and protect vulnerable species.
- **Compliance Monitoring:** Using logbooks and observer data to ensure adherence to fishing regulations.
- **Marine Protected Areas (MPAs):** Evaluating the effectiveness of MPAs and supporting their management.
- **Policy Development:** Informing decisions and adapting management strategies based on current data.
- **Community Engagement:** Educating fishers and involving them in data collection to enhance sustainability and compliance.

Overall, this data-driven approach supports sustainable fisheries management and conservation in the Maldives.

3.2.11 Fisheries data collection

To effectively manage and conserve fisheries, accurate data collection is crucial. Participants were informed about the importance of data in fisheries and how data is obtained. Key methods include:

- **Scientific Surveys:** scientists collecting data from the field by working with fishers or organising their own field studies on separate vessels.
- **Observer Programs:** Observers on fishing vessels collect real-time data on fishing practices and bycatch, helping to monitor compliance with regulations.
- **Fisher-Reported Data:** Fishers report catch details, fishing effort, and locations, which helps assess fishing pressure and trends.
- **Logbooks:** Fishermen are required to maintain logbooks documenting their catches, effort, and locations. These records are vital for ensuring regulatory compliance and informing management decisions.

Together, these data collection methods support sustainable fisheries management and resource conservation by offering comprehensive insights into fish stocks and fishing activities.

3.2.12 Fisheries licensing

During the workshop participants were made aware of various fisheries licensing requirements in the Maldives. Fisheries licensing in the Maldives regulates and manages fishing activities to ensure sustainability and protect marine resources. Key information shared with participants included:

- **Types of Licenses:** Tuna fishery, reef fish fishery and sea cucumber fishery
- **Application Process:** Requires submission of documentation, such as proof of vessel ownership and compliance with safety standards and cleanliness.
- **Compliance:** Licenses come with conditions on gear use, catch limits depending on the fishery, and protected areas. Authorities monitor compliance through inspections, vessel monitoring system and data reviews.
- **Renewal and Revocation:** Licenses must be renewed periodically with associated fees. Non-compliance can lead to revocation or suspension.
- **Benefits:** The system supports sustainable fishing practices, benefits local communities economically, and provides valuable data for managing marine resources.

Overall, participants were made aware that fisheries licensing ensures regulated fishing practices and contributes to the sustainable management of the Maldives' marine resources.

4. Onboard Fish Handling Techniques

4.1 Participants

The target reach for this training was successfully met as the training was delivered to 102 community members.

4.2 Training topics

4.1.1 Onboard fish handling – tuna

Effective onboard handling of tuna is crucial for maintaining quality and ensuring sustainability. An overview of best practices for handling tuna on fishing vessels were shared with participants:

Preparation Before Catching

- **Equipment Readiness:** Ensure all necessary equipment such as gaffs, and containers, are ready and in good condition before heading out. Ensure if tuna is caught by pole and line the fish are not bruised by wetting the deck.
- **Ice and Storage:** Prepare ice and refrigerated storage to keep the catch fresh. Proper insulation is key to maintaining low temperatures.

Immediate Handling After Catching

- **Quick and Gentle Lifting:** Use gaffs or lift the tuna carefully to avoid bruising or damaging the fish.
- **Minimal Stress:** Handle fish with care to minimize stress and injury, which can affect meat quality.

Bleeding the Fish

- **Bleeding Process:** Immediately bleed the tuna by cutting the gills or tail to promote better meat quality. This process helps remove blood from the flesh, improving flavor and texture.

Icing and Storage

- **Rapid Cooling:** Place the fish on ice immediately after bleeding to lower its temperature quickly. Proper icing helps maintain freshness and prevents spoilage.
- **Proper Stacking:** Stack tuna in a way that allows for adequate drainage of melted ice, preventing the fish from sitting in blood water.

Handling Techniques

- **Minimize Contact:** Use gloves or tools to handle tuna whenever possible to prevent contamination and maintain hygiene.
- **Avoid Excessive Handling:** Limit the amount of handling to reduce stress and physical damage to the fish.

Monitoring Quality

- **Regular Checks:** Frequently check the ice and the condition of the fish to ensure optimal storage temperatures and quality.

- Visual Inspection: Look for signs of spoilage or damage during the trip, adjusting handling practices as needed.

Documentation and Reporting

- Catch Documentation: Keep accurate records of catches, including size and weight, for management and sustainability reporting.
- Compliance with Regulations: Ensure that handling practices comply with local and international regulations regarding tuna fishing.

Proper onboard handling of tuna is essential for maintaining quality, ensuring sustainability, and complying with regulations. By following best practices from catching to storage, fishermen can enhance the value of their catch and contribute to the responsible management of tuna populations.

4.1.2 Onboard fish handling – reef fish

Participants were briefed on the importance of proper handling of reef fish for preserving quality and promoting sustainability. Key practices to follow include:

- Preparation: Ensure all tools are clean and ready and prepare ample ice for cooling the catch.
- Immediate Handling: Use nets or gaffs to carefully retrieve fish, minimizing stress and physical damage.
- Icing: Place fish on ice immediately to lower body temperature and maintain freshness, ensuring proper drainage.
- Gentle Techniques: Use gloves to avoid contamination and handle fish gently to prevent bruising.
- Monitoring Condition: Regularly inspect fish and ice, replacing melted ice to keep the fish cold and fresh.
- Sustainability Practices: Adhere to regulations on size and species, and practice selective harvesting and safe release methods.
- Documentation: Keep detailed catch records to support sustainability efforts and ensure compliance with regulations.

By following these best practices, fishers can enhance the quality of their catch and contribute to the responsible management of reef fish populations.

5. Bait Fishery Best Practices

5.1 Participants

The training sessions reached 50 community members, which is a significant achievement towards the target of 65 community members.

5.2 Training topics

5.1.1 How to reduce post-harvest mortality of bait fish

The participants were presented with different types of bait fishing techniques and issues with these methods that contribute to post-harvest mortality of bait. They were also briefed on how to reduce post-harvest mortality. Issues covered include:

- A) **Raising the net too fast to the surface:** When bait is caught from deeper waters and they are rapidly raised to the surface, they undergo decompression issues leading to the death of several fish instantly and contribute to more mortality inside the bait tank. Raising the nets slowly would help reduce decompression related mortality.
- B) **Use of nets with knots:** Some fishers use nets that contain knots. When bait fish come into contact with the knots on the net, fish tend to get injured. Their scales and the protective mucus are lost. This leads to higher mortality. Knotless nets can help minimize such injuries.
- C) **Bait coming in contact with the sides of the net:** Bait fish are quickly bruised as they touch the sides of the net. They lose their protective scales and mucus on them. Keeping the fish in a wider area during coping would help minimize such injuries.
- D) **Catching large quantities of bait at once:** It is important to know that different bait species can be stocked at different densities inside the bait hold. The behavior of sprat, cardinal fish and fusiliers differ. Hence it is important to ensure, when bait is stocked in the hold, that the bait does not suffocate. Sometimes when plenty of bait is available, fishers stock excessive amounts of bait into the bait hold resulting in suffocation and death shortly after putting them in the hold. In addition, the dead bait settle at the bottom of the hold releasing chemicals into the hold and consequently resulting in the death of more bait. Keeping the net wide and allowing the bait fish to accommodate to the new condition would help minimize suffocation.
- E) **Dry scooping:** During transfer of bait from the net into the bait tank, the fish are taken from the net using large scoops. These scoops are often made from the same material as bait nets. Hence, when bait is scooped out with these scoop nets, the fish are taken out of the water, increasing stress and depriving them of oxygen. Wet scooping – transferring bait with water – would help reduce such injuries.
- F) **Poor circulation in the bait tank:** As large quantities of bait are placed inside the bait tank rapidly, the oxygen concentration in the bait tank quickly depletes. With poor circulation of water inside the bait tank this depletion become more severe resulting the death of large quantities of bait inside the tank. To improve survival rate, it is important to ensure fresh seawater reaches all parts of the bait tank. This could be achieved by pumping water from the top and removing water from the bottom of the tank.
- G) **Too much movement of water inside the bait hold:** During rough seas when the vessels are heading out in search of tuna, the water inside the bait hold moves a lot. On such days when the live bait inside the tank is jolted with the water inside the tank from one side to the other side of the bait hold, the bait lose its scales and mucus making them weak. The natural environment where bait fish lives is not rough like this. To minimize excessive jolting

of water in the tank, fill the bait tank till the water touches the deck. In Japanese vessels the mouth of the bait hold is raised and when the water is filled until it rises into the mouth of the bait tank the water inside the tank is very calm and still.

- H) **Lighting the bait tank:** Blue or green coloured lights inside the bait tank help to increase the survival rate of the bait species. Often waterproof LED strips are used inside the bait tank.

The importance of keeping the bait alive in the hold as long as possible was shared with participants. Discarding of bait will not only affect the fishers but also put more pressure on live bait stocks. This is because if there is an increase in discarded bait more bait needs to be caught. Hence using live bait wisely will benefit both fishers and the live bait fishery. Every negative impact on the live bait fishery will affect both tuna and reef fishery in the Maldives.

At the end of the workshop participants were provided links for awareness materials (written and videos) for them to access and gain more knowledge on how to modify bait tanks to minimize postharvest mortality of livebait.

6. Increasing Capacity for Traders & Processors

6.1 Participants

The training aimed to involve at least 40 fish traders and processors, with 50% being women. A contractual requirement was also to include 20 grouper traders and processors. However, it was discovered during the inception phase that there were no grouper traders and processors on the atoll. Ultimately, the target was not met, as only eight participants attended, including one woman. Despite extensive efforts and collaboration with island councils and contacts from MRR's database, only 17 individuals were identified and confirmed their participation, but less than half attended the session.

6.2 Training topics

6.1.1 Status of fish trading and processing in the Maldives

Participants explored the history and evolution of fish trade in the Maldives, discussing current export practices, product types, major stakeholders, export markets, and the value of exports. The session also highlighted women's roles in fish processing and concluded with an overview of processing capacities in Laamu Atoll.

6.1.2 Fish as food and spoilage

The session covered fish's nutritional content and introduced participants to preservation methods that enhance longevity and maintain quality. The discussion included spoilage factors such as microbial, enzymatic, and chemical processes that begin after the fish dies.

6.1.3 Fish preservation

Participants learned various preservation methods, including temperature control, dehydration, salting, and irradiation, to extend fish's shelf life.

6.1.4 Fish processing

The training detailed preservation processes like drying, salting, and smoking. It also covered microorganism growth ranges in varying water concentrations and methods to control water activity during processing.

6.1.5 Fish processing stages and considerations

A detailed process flow at Horizon Fisheries Complex was shared, highlighting key considerations and tests for each processing stage.

6.1.6 Storing fish on the vessel

Standards and recommended storage temperatures for maintaining fish quality on vessels were presented.

6.1.7 Sensory evaluation of raw fish

Participants were given guidelines for evaluating raw fish, focusing on checking gills, eyes, skin, texture, and odor. Visual aids and a laminated guide illustrating quality conditions were provided.

6.1.8 Sensory evaluation of cooked fish

The session included identifying visual and textural issues like injury, honeycomb formation, parasitic infections, and others in skipjack and yellowfin tuna. Laminated guides were distributed to assist with

evaluations. Participants toured the Horizon Fisheries Complex for practical demonstrations of quality evaluations.

6.1.9 Importance of hygiene and sanitation

Discussions emphasized food safety, contamination risks, and the importance of hygiene and cleanliness in processing facilities.

The training session successfully enhanced the capacity of fish traders and processors by equipping participants with essential knowledge and practical skills necessary for improving fish processing and preservation practices. Through engaging sessions and hands-on experiences, participants gained insight into the entire supply chain, from historical trading practices to modern-day storage and processing techniques, emphasizing quality assurance, hygiene, and sustainability.

7. Fishing Vessel Efficiency and Improved Catch

7.1 Participants

The training session aimed to reach at least 65 community members and 10 fishing vessel owners. The target for community members was nearly met, with 50 individuals participating in the training, representing more than 10 vessels.

7.2 Training topics

During the training sessions, participants were introduced to the fundamental features and benefits of the new technology, emphasizing its role in real-time data collection and decision-making. The workshops included interactive discussions on sustainable fishing practices, where facilitators highlighted the importance of adhering to catch limits, reducing bycatch, and protecting fragile marine ecosystems while using technology to improve catches. This focus on sustainability ensured that participants understood not only how to increase their catch but also the long-term implications of their fishing methods on environmental health.

7.1.1 GPS

Fishers were briefed on how GPS technology has transformed the fishing industry by enhancing efficiency, safety, and sustainability. Information on key benefits shared included:

- **Accurate Navigation:** Fishermen can precisely reach productive fishing spots, reducing search time.
- **Tracking Fishing Grounds:** Users can save coordinates of successful locations for future trips.
- **Weather and Tide Information:** Integrated data helps plan outings for optimal conditions.
- **Safety Features:** Real-time location tracking improves safety and emergency response.
- **Data Collection:** Combined with sonar, GPS aids in gathering data on fish populations, supporting sustainable practices.
- **Route Optimization:** Efficient routes save time and reduce fuel consumption, lowering costs and environmental impact.
- **Regulatory Compliance:** GPS ensures adherence to designated fishing zones and regulations.
- **Enhanced Communication:** Connectivity features allow for sharing information among fishers, fostering collaboration.

Overall, GPS serves as a vital tool in promoting responsible fishing practices while improving catch rates and operational efficiency.

7.1.2 Fish finder

Fishers were made aware of the importance of fish finders as an essential tool, utilizing sonar technology to locate fish and enhance fishing success. Key benefits shared included:

- **Identifying Fish Locations:** Fish finders pinpoint where fish are congregating, including their size and depth.
- **Mapping Underwater Structures:** They reveal underwater features like rocks and drop-offs that attract fish.

- **Monitoring Depth and Temperature:** Providing data on water depth and temperature helps anglers understand fish behavior.
- **Real-time Feedback:** Anglers can adjust their techniques based on immediate data, improving chances of a catch.
- **Data Recording:** Advanced models can record historical data, aiding future fishing trips.
- **Ease of Use:** Modern fish finders feature user-friendly interfaces for anglers of all skill levels.
- **GPS Integration:** Many models include GPS to mark successful spots and navigate efficiently.

To summarize, fish finders significantly enhance fishing effectiveness by providing critical insights into underwater environments and fish behavior.

7.1.3 Bird radar

Bird radar is a valuable tool that enhances fishing operations by observing seabird behavior to locate fish. Key benefits discussed included:

- **Identifying Fish Schools:** Radar detects flocks of birds, indicating potential fishing hotspots.
- **Monitoring Bird Behavior:** It tracks bird movements, providing insights into where fish may be concentrated.
- **Real-time Data:** Offers immediate information, allowing fishers to adjust strategies quickly.
- **Enhancing Safety:** Helps avoid collisions by monitoring both birds and surrounding vessels.
- **Reducing Bycatch:** Enables targeted fishing by focusing on areas with desired species.
- **Integration with Other Technologies:** Complements tools like fish finders and GPS for a comprehensive fishing approach.

Bird radar improves fishing efficiency, safety, and sustainability by utilizing the natural behavior of seabirds to locate fish.

7.1.4 Modern communication equipment

Modern communication equipment is essential in the fishing industry, enhancing efficiency, safety, and compliance. Key benefits shared with fishers included:

8. **Real-time Communication:** Enables instant reporting between vessels and shore operations for quick updates on catches and emergencies.
9. **Safety and Navigation:** Provides vital weather updates and navigational warnings to ensure safe operations at sea.
10. **Coordination Among Vessels:** Facilitates information sharing about fish locations and ocean conditions, improving collaboration.
11. **Monitoring and Compliance:** Assists in tracking fishing activities to ensure adherence to regulations and sustainable practices.
12. **Integration with Technology:** Works alongside tools like GPS and fish finders for comprehensive decision-making.
13. **Data Sharing and Analysis:** Allows fishers to share insights with research institutions, contributing to better fisheries management.

Modern communication equipment greatly enhances fishing operations, promoting more effective and sustainable practices.

In summary, this session helped successfully equip participants with the knowledge and skills necessary to improve their catch sustainably and efficiently. By fostering a deeper understanding of both technological advancements and environmental stewardship, the training has laid a strong foundation for ongoing improvements in fishing practices within the industry.

14. Needs of Fishers and Key Concerns

The following table (Table 2) outlines a series of recommendations designed to address the various challenges faced by the fisherfolk who participated in the training sessions. These recommendations have been developed based on the insights gathered from fishers and stakeholders who are directly impacted by issues such as unsustainable practices, environmental changes, and regulatory inefficiencies. These recommendations need to be considered by fisheries and environmental agencies for a more sustainable, resilient, and economically viable fisheries industry that supports both ecological balance and community livelihoods.

These targeted recommendations provide a roadmap for addressing the critical issues identified within the fisheries sector in Laamu Atoll but applies to the national context. The required solutions to promote sustainability and resilience should be developed and implemented through collaborative efforts involving government agencies, fishers, local communities, industry stakeholders, and civil society organisations.

Table 2: Summary of needs and concerns of fisher with key recommendations.

Topic	Needs and concerns of fishers	Key recommendations
Regulatory concerns	Ineffectiveness of Laws: Existing laws are perceived as ineffective due to lack of awareness and support.	<ul style="list-style-type: none"> - Implement a comprehensive awareness and education campaign to explain the importance and benefits of fisheries regulations. - Involve fishers, local leaders, NGOs, and other stakeholders in the legislative process to foster a sense of ownership and collaboration. - Establish channels for ongoing feedback from the fishing community to identify challenges and improve law enforcement strategies.
	Regulation Awareness: Lack of awareness regarding regulation changes, such as lobster size amendments, and the reasons for fisheries management measures, such as the prohibition of the use of drones for finding tuna schools.	<ul style="list-style-type: none"> - Conduct public consultations and information campaigns when introducing or amending fisheries regulations to improve compliance and awareness.
	Need for research: Especially on the population status of commercially exploited species (sharks, sea cucumbers, reef fish) and vulnerable species (sea birds) and the associated ecosystem impact.	<ul style="list-style-type: none"> - Conduct comprehensive research to establish baseline population data for key marine species and assess the ecosystem impacts of fisheries. - Develop a publicly available ongoing data monitoring system to inform policies that support sustainable fishing and conservation efforts.
	aFAD Monitoring: Need for better enforcement and monitoring of fishing activities at aFADs.	<ul style="list-style-type: none"> - Strengthen monitoring and enforcement of fishing activities around aFADs to promote sustainable practice
	Bait fish decline: Decline in bait fish productivity leads to longer fishing journeys and inefficiencies.	<ul style="list-style-type: none"> - Undertake targeted research to understand the causes of the bait fishery decline and share the findings widely with fishers. - Formulate and implement an evidence-based bait fishery management plan and regulation, including catch limits and protected areas, to ensure long-term sustainability. - Develop educational campaigns on best practices for livebait handling and provide training and resources for bait tank modification to ensure sustainability.

	Unsustainable fishing of octopus: Concerns over destructive methods used for octopus collection (chemicals, insecticides) and overfishing.	<ul style="list-style-type: none"> - Formulate and implement an octopus fishery management plan and regulation, including catch limits and protected areas, to ensure long-term sustainability and ecosystem health. - Enforce stricter regulations to prohibit the use of harmful methods such as chemicals and insecticides. - Promote sustainable octopus fishing practices through education and training programmes to protect octopus populations.
	Deep water fish species decline: Noticeable declines of ruby snapper from popular fishing locations. Fishers reported a catch decline by half and size decline by a third for ruby snapper within one year.	<ul style="list-style-type: none"> - Include and implement robust sustainability measures for emerging fishing methods (e.g., jigging and popping) and deep-water species in the reef fishery management plan. - Conduct research to identify recreational fishing hotspots and implement measures to safeguard populations.
	Shark Population: Increased shark numbers complicate fishing and pose safety risks.	<ul style="list-style-type: none"> - Targeted research to understand the factors affecting shark depredation. - Develop code of conducts for fishing to reduce fisher-shark interactions and sharing these widely, e.g., chumming during reef fishery, handling catch in the water during the octopus and grouper fishery.
Fisheries development	Price: Tuna fishers want a higher base price for tuna	- In close collaboration with fishers and key stakeholders, determine a fair and sustainable base price for tuna to guarantee financial security and stability for fishers.
	Ice facilities: Tuna fishers want increased access to ice facilities.	- The establishment of additional ice production and storage facilities in strategic fishing locations would greatly reduce spoilage and enhance product quality.
	Fuel and Subsidies: High fuel prices and lack of access to government fuel subsidies for Laamu Atoll fishers are major concerns.	- Inclusion of all regions, particularly Laamu Atoll, in the fuel subsidy programme to ensure equitable access and alleviate regional disparities.
	International Promotion: Fishers feel more government effort is needed to promote Maldivian fisheries globally.	- Increased efforts and programmes to promote the Maldives' sustainable tuna fishery internationally is necessary to improve market access and competitiveness.

	Sector Development: The development of fisheries, especially in Laamu Atoll, is seen as insufficient. Tuna purchasing companies are perceived to be not keeping pace with industry growth.	- Development initiatives to support growth and modernization in the fisheries sector within Laamu Atoll.
	Quality of processed fish: Small scale fish processors want to ensure that the quality of fish supplied to them is maintained at the same standard as those supplied to factories.	<ul style="list-style-type: none"> - Conduct training sessions for both fishers and small-scale processors on best practices in fish handling, preservation, and transportation to maintain quality from catch to processing. - Introduce certification systems that recognize and incentivize adherence to quality standards among small-scale processors, helping them to compete fairly in the market.
Socio-economical concerns	Women's Involvement: Decline in women's participation in post-production roles.	- Develop and support initiatives to increase women's participation in post-production roles.
	Youth Participation: Challenges in attracting young people to the fishing industry, with resistance from some boat captains. Not sufficient work done to get young people involved in the fishery.	- Develop and support initiatives to attract youth to the fisheries industry.
	Payment Delays: Delayed payments are forcing fisher families into debt and financial struggles.	- Implementing efficient systems for prompt payment to fishers will help avoid financial difficulties and sustain livelihoods
	Loan and Insurance Eligibility: Limited eligibility for loans and insurance schemes.	- Collaborate with financial institutions to develop accessible loan and insurance schemes tailored for the fisher community.
	Diving Certifications: Lack of facilities for obtaining dive certifications.	- Creating/ supporting facilities for fisher dive certification will enhance safety and open new opportunities for fishers.

	Health Concerns: Issues with tuna vessel owners not providing health coverage and backbone issues faced by tuna fishers.	<ul style="list-style-type: none"> - Strengthen the enforcement of safety regulations on fishing vessels, ensuring adherence to medical and safety protocols.
Environmental concerns	Dredging Impact: Sedimentation from dredging is harming bait fishing grounds (e.g., bait fishing is not productive in Male' Atoll now)	<ul style="list-style-type: none"> - Establish bait fishery managed areas which are protected from harmful activities such as dredging and reclamation and other fishing activities, to sustain bait fish populations and fisher livelihoods. - Environmental agencies should take a precautionary approach in approving development projects requiring dredging as the long-term impacts on bait fish populations and fisher livelihoods are poorly understood. - Undertake research to understand the impact of dredging on bait fishing grounds.
	Harm to whale sharks: Non-harmful methods are needed to deter whale sharks from disrupting nets.	<ul style="list-style-type: none"> - Engage fishers to identify effective whale shark deterring methods in the bait fishery and include these in the bait fish management plan and regulation. - Incentivize fishers to contribute to whale shark citizen science to understand the whale shark population of the Maldives and promote a greater appreciation for them.
	Damage to coral reefs: Problems with damage to corals from bait fishing nets.	<ul style="list-style-type: none"> - Engage fishers to identify effective ways to reduce entanglement of bait fishing nets in corals and include these in the bait fish management plan and regulation.
	Waste Management: inadequate waste management facilities lead to discarding them into the sea.	<ul style="list-style-type: none"> - Improve waste management facilities across islands to prevent ocean disposal and maintain ecological health.
	Sea bird decline: The reason for this is not understood, but some people are catching sea birds.	<ul style="list-style-type: none"> - Conduct targeted research to identify the causes of sea bird decline and implement protective measures. - Launch public awareness campaigns about the importance of sea birds. - Enforce regulations to prevent illegal capture.

	Climate Change: Storms, temperature increases, and coral bleaching are affecting fishing success.	<ul style="list-style-type: none"> - Implement adaptive management strategies such as promoting climate-resilient fishing practices and enhancing early warning systems for storms. - Initiatives to restore and protect marine ecosystems should be prioritized, alongside community education programmes on sustainable practices to support ecosystem resilience in the face of climate change.
	Use of powerful lights: Concerns about the wide ecosystem impact of using powerful lights.	<ul style="list-style-type: none"> - Conduct targeted research to understand the impact of powerful lights during bait fishing on the marine ecosystem

15. Multi-directional learning sessions

At the workshop's outset, participants engaged in activities promoting interaction and discussion about sustainable fishing practices used by their forefathers and the changes over time. This initial activity facilitated better engagement among participants and with facilitators.

Participants formed groups to select a commonly fished species in the Maldives. They collaborated to identify the fish's life cycle habitats, fishing methods and gears, other species caught, and the impacts on marine habitats. This collaborative exercise fostered peer learning and cross-group interactions.

Participants were encouraged to share their thoughts and questions through various mediums, such as direct questions, sticky notes, and informal chats during breaks. Facilitators created an environment for two-way learning, recognizing the value of fishers' traditional and ecological knowledge, which often captures detailed information not recorded by conventional science. Informal discussions were further encouraged during breaks and a dinner event organized for the participants.

Training materials were provided as PDFs and shared in Viber groups. Short, animated videos on topics like marine ecosystems and sustainable fishing practices were shown and made available on MRR's e-learning hub, Masmahaaveshi (<http://masmahaaveshi.maldivesresilientreefs.com/>). This resource offers eight modules in English and Dhivehi, providing an engaging learning platform for fisheries and marine conservation in the Maldives. Participants receive a certificate upon correctly completing all quiz questions in a module.

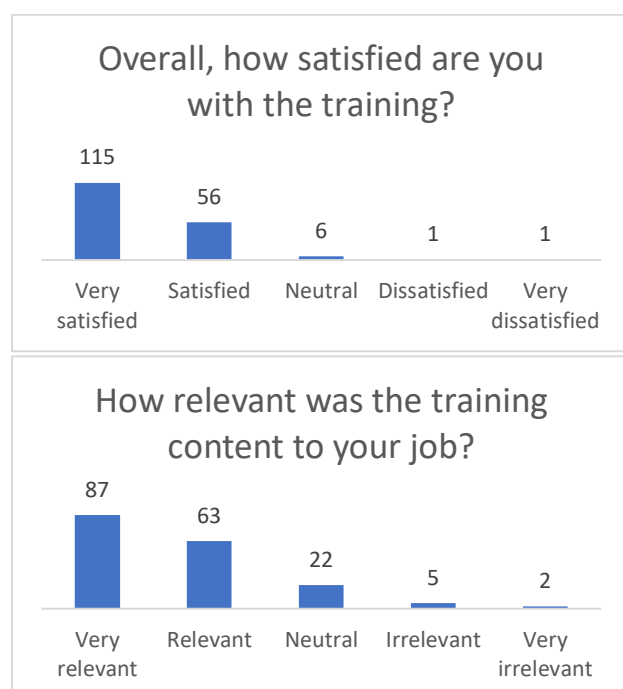
16. Community Awareness

The contents provided to the participants are included as Supplementary Information, attached with this report.

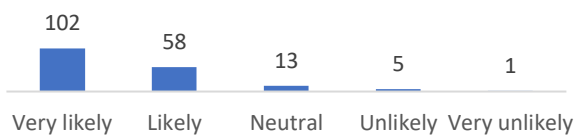
17. Feedback

179 participants completed the feedback form, which was delivered online, and on paper. The majority (95.5%) expressed satisfaction with the training provided. Regarding the relevance of the training content to their roles, 83.8% found it applicable. 89.4% of the respondents expressed a likelihood of utilizing their newfound knowledge. 98.9% of participants agreed that the training content was easy to understand. These results show a general positive reception towards the training.

Participants overwhelmingly expressed satisfaction with the training. They particularly appreciated gaining new knowledge in various areas and praised the quality and delivery of the information. The expert facilitators, engaging group activities, and informative videos were especially well-received. For future sessions, they suggested more frequent and extended training, involving a larger number of participants, as well as incorporating more outdoor activities. Their feedback shows a strong preference for continued, immersive learning experiences.



How likely are you to apply what you learned in the training to your job?



Was the training content easy to understand?



Annex 1 – List of Attendees

	Name	Institution/ Type	Role	Gender
1	Ibrahim Shakir	Laamu Atoll Council	Assistant Council Officer	Male
2	Hussain Haisham	Laamu Atoll Council	Council Officer	Male
3	Adam Naseem	L. Isdhoo Island Council	Vice President	Male
4	Mariyam Shifa	L. Isdhoo Island Council	Council Member	Female
5	Mohamed Waseem	L. Isdhoo Island Council	Council Officer	Male
6	Mariyam Shameema	L. Isdhoo WDC	President	Female
7	Mohamed Saaidh	L. Kalaidhoo Island Council	Council Member	Male
8	Mariyam Suzana	L. Kalaidhoo Island Council	Assistant Council Executive	Female
9	Abdulla Hameed	L. Kalaidhoo Island Council	Senior Council Officer	Male
10	Nasma Ali	L. Kalaidhoo WDC	Member	Female
11	Zubaidha Ahmed	L. Dhanbidhoo Island Council	Council Member	Female
12	Rosy Ibrahim	L. Dhanbidhoo WDC	President	Female
13	Ali Hafeez	L. Dhanbidhoo Island Council	Assistant Council Officer	Male
14	Adam Mohamed	L. Dhanbidhoo Island Council	Assistant Council Executive	Male
15	Fathimath Azma	L. Maabaidhoo Island Council	Vice President	Female
16	Ahmed Naufal	L. Maabaidhoo Island Council	Council Assistant Executive	Male
17	Mohamed Shamveel	L. Maabaidhoo Island Council	Assistant Council Officer	Male
18	Sureena Mohamed	L. Maabaidhoo WDC	President	Female
19	Ali Shafeeu	L. Mundoo Island Council	Council Member	Male
20	Fathimath Saajida	L. Mundoo Island Council	Council Member	Female
21	Aminath Azeema	L. Mundoo WDC	Member	Female
22	Mariyam Nashvath	L. Mundoo Island Council	Assistant Council Officer	Female
23	Fathimath Saajidha	L. Gan Island Council	Council member	Female
24	Aminath Azeema	L. Gan WDC	Member	Female
25	Hassan Mukhtar	L. Gan Island Council	Fisheries Ranger	Male
26	Aishath Azeema	L. Fonadhoo Island Council	Council Member	Female
27	Mohamed Faig	L. Fonadhoo Island Council	Secretary General	Male
28	Aishath Risma	L. Fonadhoo WDC	President	Female
29	Salman Abdul Raheem	L. Maavah Island Council	Council Member	Male
30	Moosa Ibrahim	L. Maavah Island Council	Council Officer	Male
31	Aminath Ansoodha	L. Maavah Island Council	Council member	Female
32	Khadheeja Shifla	L. Maavah WDC	Member	Female
33	Ibrahim Rameez	L. Maamendhoo Island Council	Council Member	Male
34	Madheeha Moosa	L. Maamendhoo WDC	Vice President	Female
35	Khadheeja Hussain	L. Hithadhoo Island Council	Council Member	Female
36	Hawwa Mizna	L. Hithadhoo WDC	Vice President	Female

37	Mohamed Hussain	L. Hithadhoo Island Council	Receptionist	Male
38	Mohamed Tholaal	L. Hithadhoo Island Council	Environment Officer	Male
39	Ahmed Azim	L. Kuhandhoo Island Council	Council President	Male
40	Ahmed Shameem	L. Kuhandhoo Island Council	Assistant Council Officer	Male
41	Hussain Ahmed	L. Kuhandhoo Island Council	Council Assistant Executive	Male
42	Jauharee Idrees	L. Hithadhoo fisher	Tuna fisher	Male
43	Hussain Raseedh	L. Hithadhoo fisher	Tuna fisher	Male
44	Abdul Majidh Hussain	L. Hithadhoo fisher	Tuna fisher	Male
45	Mohamed Thahuseen	L. Hithadhoo fisher	Tuna fisher	Male
46	Hussain Mausoom	L. Maamendhoo fisher	Tuna fisher, Reef fisher	Male
47	Moosa Idrees	L. Maamendhoo fisher	Tuna fisher	Male
48	Hussain Idrees	L. Maamendhoo fisher	Tuna fisher	Male
49	Ahmed Samir	L. Maamendhoo fisher	Tuna fisher	Male
50	Ahmed Ali	L. Kalaidhoo fisher	Tuna fisher, Reef fisher	Male
51	Ali Faiz	L. Dhanbidhoo fisher	Tuna fisher	Male
52	Ali Ibrahim	L. Maabaidhoo fisher	Tuna fisher	Male
53	Ahmed Riyaz	L. Maabaidhoo fisher	Tuna fisher	Male
54	Ibrahim Hussain	L. Maabaidhoo fisher	Tuna fisher	Male
55	Rafaahu Adam	L. Gan fisher	Tuna fisher	Male
56	Fauzee	L. Gan fisher	Tuna fisher	Male
57	Mohamed Areef	L. Gan fisher	Tuna fisher	Male
58	Saudulla Abbas	L. Gan fisher	Tuna fisher	Male
59	Massood	L. Gan fisher	Tuna fisher	Male
60	Moosa Haitham	L. Gan fisher	Tuna fisher	Male
61	Ahmed Ziyad	L. Fonadhoo fisher	Interesting in tuna fishing	Male
62	Ahmed Faarish	L. Fonadhoo fisher	Tuna fisher	Male
63	Ahmed Azim	L. Kunahandhoo fisher	Tuna fisher	Male
64	Abdullah Jabeen	L. Kunahandhoo fisher	Tuna fisher	Male
65	Abdullah Arim	L. Hithadhoo fisher	Tuna fisher	Male
66	Abdullah Shareef	L. Maamendhoo fisher	Reef fisher	Male
67	Abdullah Abdul Latheef	L. Maamendhoo fisher	Reef fisher	Male
68	Shakir Aboobakuru	L. Maamendhoo fisher	Reef fisher	Male
69	Ahmed Areef	L. Maamendhoo fisher	Reef fisher	Male
70	Ali Samir	L. Maamendhoo fisher	Reef fisher	Male
71	Nizam Naeem	L. Maamendhoo fisher	Reef fisher	Male
72	Muhammad Nizar	L. Maamendhoo fisher	Reef fisher	Male
73	Yousuf Moosa	L. Maamendhoo fisher	Reef fisher	Male
74	Rasheedh Aboobakuru	L. Maamendhoo fisher	Reef fisher	Male
75	Abdullah Ageel	L. Maamendhoo fisher	Reef fisher	Male
76	Mohamed Anaal Areef	L. Maamendhoo fisher	Reef fisher	Male

77	Ibrahim Firaas	L. Gan fisher	Reef fisher	Male
78	Ahmed Zahir	L. Fonadhoo fisher	Reef fisher	Male
79	Ismail Shareef	L. Fonadhoo fisher	Reef fisher	Male
80	Ali Najeeb	L. Fonadhoo fisher	Reef fisher	Male
81	Abdulla Ibrahim	L. Fonadhoo fisher	Reef fisher	Male
82	Mohamed Abdulla	L. Fonadhoo fisher	Reef fisher	Male
83	Ibrahim Athoof	L. Fonadhoo fisher	Reef fisher	Male
84	Khadheeja Mohamed	L. Mundoo fisher	Reef fisher	Male
85	Nasreen Abdulla	L. Mundoo fisher	Reef fisher	Female
86	Ali Adam	L. Mundoo fisher	Reef fisher	Male
87	Aishath Wisama	L. Dhanbidhoo fisher	Reef fisher	Female
88	Aminath Waheedha	L. Dhanbidhoo fisher	Reef fisher	Female
89	Adam Naeem	L. Dhanbidhoo fisher	Reef fisher	Male
90	Ahmed Mauroof	L. Maamendhoo fisher	Reef fisher	Male
91	Abdulla Rasheed	L. Maamendhoo fisher	Reef fisher	Male
92	Aslam Mukhthar	L. Maamendhoo fisher	Reef fisher	Male
93	Moosa Naushadh	L. Dhanbidhoo fish processor	Fish processor	Male
94	Yoosuf Niushad	L. Dhanbidhoo fish processor	Fish processor	Male
95	Aloofa Adam	L. Dhanbidhoo fish processor	Fish processor	Female
96	Hassan Nashad	L. Dhanbidhoo fish processor	Fish processor	Male
97	Aboobakuru Mohamed	L. Hithadhoo fish processor	Fish processor	Male
98	Mohamed Atheef	L. Hithadhoo fish processor	Fish processor	Male
99	Aboobakuru Ali	L. Hithadhoo fish processor	Fish processor	Male
100	Saudh Mohamed	L. Maamendhoo fish processor	Fish processor	Male
101	Aishath Sana	Hamad School	School student	Female
102	Aishath Lamya	Hamad School	School student	Female
103	Mariyam Shuaau	Hamad School	School student	Female
104	Aminath Anaan Rasheed	Laamu Atoll Education Center	School student	Female
105	Aishath Afnaan Rasheed	Laamu Atoll Education Center	School student	Female
106	Aminath Misga	Laamu Atoll Education Center	School student	Female
107	Aishath Shafqa Shameem	Laamu Atoll Education Center	School student	Female
108	Aaisha Ibrahim	Laamu Atoll Education Center	School student	Female
109	Ibrahim Absal Ali	Laamu Atoll Education Center	School student	Male
110	Ali Abaan	Laamu Atoll Education Center	School student	Male
111	Abdulla Ma'aadh	Laamu Atoll Education Center	School student	Male
112	Mohamed Ahunaf	Laamu Atoll Education Center	School student	Male
113	Mohamed Yooshau Ismail	Laamu Atoll Education Center	School student	Male
114	Aaish Amir	Laamu Atoll Education Center	School student	Male
115	Mohamed Jaishan Shakir	Laamu Atoll Education Center	School student	Male

116	Mohamed Hanoon Bin Hashim	Hamad School	School student	Male
117	Mohamed Maishan	Hamad School	School student	Female
118	Aishath Shunauha Mohamed	Hamad School	School student	Female
119	Mariyam Malha Hassan	Hamad School	School student	Female
120	Mafaazath Abdul Kareem	Hamad School	School student	Female
121	Aishath Aala Ali	Hamad School	School student	Female
122	Fathimath Shuba Rasheed	Hamad School	School student	Female
123	Aishath Yaisha	Hamad School	School student	Female
124	Mariyam Imsha	Hamad School	School student	Female
125	Aishath Aana Ahmed Rasheed	Hamad School	School student	Female
126	Aminath Shaba Saeed	Hamad School	School student	Female
127	Aishath Mais Ali	Hamad School	School student	Female
128	Laisha Farooq	Hamad School	School student	Female
129	Aishath Yaisha Yaameen	Hamad School	School student	Female
130	Mariyam Neeha	Hamad School	School student	Female
131	Eyra Ibrahim Mohamed	Hamad School	School student	Female
132	Shabuaan Rasheed	Hamad School	School student	Male
133	Umadevi	Laamu Atoll Education Center	Teacher	Female
134	Geetha T.	Hamad School	Teacher	Female
135	Mariyam Nadheema	Laamu Atoll Education Center	Teacher	Female
136	Fathumath Insha	Hamad School	School student	Female
137	Saaee Easa Firaq	Hamad School	School student	Male
138	Ahmed Maahee Mohamed	Ihadhdhoo School	School student	Male
139	Mohamed Sidhaan	Ihadhdhoo School	School student	Male
140	Ahmed Naahil Nasheed	Ihadhdhoo School	School student	Male
141	Yoosuf Yamaan Haleem	Ihadhdhoo School	School student	Male
142	Mohamed Iyash	Ihadhdhoo School	School student	Male
143	Maaiz Ahmed Mufeed	Ihadhdhoo School	School student	Male
144	Aishath Zoha	Ihadhdhoo School	School student	Female
145	Aminath Shadha	Ihadhdhoo School	School student	Female
146	An'um Binthi Mohamed Nazeel	Ihadhdhoo School	School student	Female
147	Shaba Abdul Baaree	Ihadhdhoo School	School student	Female
148	Aishath Eeshal Thohir	Ihadhdhoo School	School student	Female
149	Mariyam Shiba	Ihadhdhoo School	School student	Female
150	Aishath Minna Matheen	Ihadhdhoo School	School student	Female
151	La'aaly Ahmed Latheef	Ihadhdhoo School	School student	Female

152	Fathimath Minha Matheen	Ihadhdhoo School	School student	Female
153	Ahmed Maahil	Ihadhdhoo School	School student	Male
154	Hussain Maaniu	Ihadhdhoo School	School student	Male
155	Ibrahim Layaan Mohamed	Ihadhdhoo School	School student	Male
156	Ibrahim Aahil Azim	Ihadhdhoo School	School student	Male
157	Aishath Aina Hussain	Ihadhdhoo School	School student	Female
158	Mohamed Alyaan Ismail	Ihadhdhoo School	School student	Male
159	Ahmed Shaaif	Ihadhdhoo School	School student	Male
160	Mohamed Maahee	Ihadhdhoo School	School student	Male
161	Ibrahim Ayoosh	Hithadhoo School	School student	Male
162	Ali Shizaah	Hithadhoo School	School student	Male
163	Mariyam Lubaa Muhammed	Hithadhoo School	School student	Female
164	Mohamed Yaan	Hithadhoo School	School student	Male
165	Abdulla Ailam Ali	Hithadhoo School	School student	Male
166	Mohamed Aahil	Hithadhoo School	School student	Male
167	Mohamed Ahnal	Hithadhoo School	School student	Male
168	Aiminath Aalaa Mohamed	Hithadhoo School	School student	Female
169	Fathumath Shaina	Hithadhoo School	School student	Female
170	Ahmed Rayyaan Arif	Hithadhoo School	School student	Male
171	Ahmed Aayan Ismail	Maamendhoo School	School student	Male
172	Ahmed Aik Ismail	Maamendhoo School	School student	Male
173	Ahmed Nazan Nasheed	Maamendhoo School	School student	Male
174	Mohamed Rizaan	Maamendhoo School	School student	Male
175	Ahmed Hazim	Maamendhoo School	School student	Male
176	Mohamed Maail Moosa	Maamendhoo School	School student	Male
177	Mohamed Nameeh	Maamendhoo School	School student	Male
178	Ahmed Yanaal Yoosuf	Maamendhoo School	School student	Male
179	Ahmed Aizu Azhar	Maamendhoo School	School student	Male
180	Mohamed Ayush Saleem	Maamendhoo School	School student	Male
181	Haazima Mueez	Maamendhoo School	School student	Female
182	Aishath Aalaa	Maamendhoo School	School student	Female
183	Aishath Azlifa	Maamendhoo School	School student	Female
184	Fathimath Unmiya	Maamendhoo School	School student	Female
185	Aishath Ailish Waheed	Maamendhoo School	School student	Female
186	Aishal Aileen Auraf	Maamendhoo School	School student	Female
187	Fathumath Shaayaan Shiyaam	Maamendhoo School	School student	Female
188	Mariyam Raaheel Adam	Maamendhoo School	School student	Female
189	Mariyam Nima Nizam	Maamendhoo School	School student	Female

Annex 2 – Photos



Image 1: Group photo of the councils and WDC training session



Image 2: Group photo of the first tuna fisher training session



Image 3: Group photo of the second tuna fisher training session



Image 4: Group photo of the reef fisher training session



Image 5: Group photo of the fish traders and processors training session



Image 6: Group photo of the Hamad Bin Khalifa al Thaanee and Laamu Atoll Education Center training session



Image 7: Photo of the Ihadhdhoo school training session

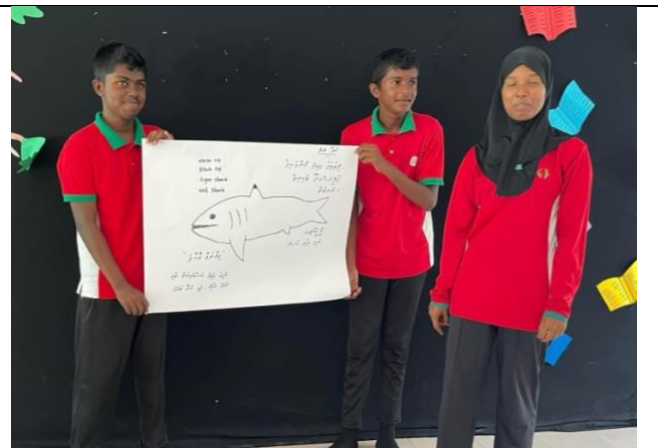
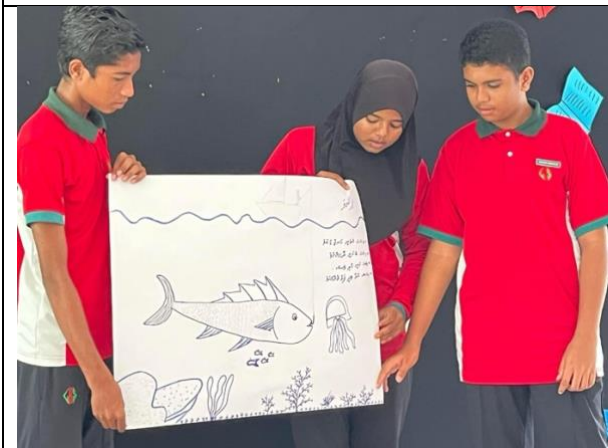
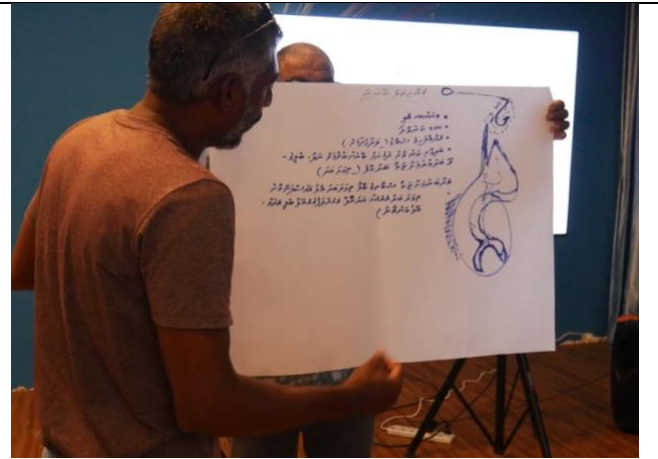


Image 8: Group photo of the Hithadhoo School training session



Image 9: Group photo of the Maamendhoo School training session







Images 10-21: Group activities during the sustainable fisheries training sessions

The background is a solid blue color. Overlaid on this is a faint, stylized illustration. In the center, there is a large fish, possibly a snapper or similar species, facing left. Above it, there is a large, stylized turtle, also facing left. The background is decorated with various geometric shapes, including triangles, circles, and lines, some of which are arranged in a pattern that resembles a traditional indigenous design. The overall aesthetic is clean and modern, with a focus on natural elements and geometric patterns.

Report on capacity building for systematic reporting on required data for MFOR

Abbreviations and Acronyms

ENDhERI	Enhancing National Development through Environmentally Resilient Islands
GEF	Global Environment Facility
MCCEE	Ministry of Climate Change, Environment and Energy
MFOR	Ministry of Fisheries and Ocean Resources
MMRI	Maldives Marine Research Institute
MRR	Maldives Resilient Reefs
NC	Natural Capital
NGO	Non-Governmental Organisation
PMU	Project Management Unit
UNEP	United Nations Environment Program
WDC	Women's Development Committee

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Executive Summary

Maldives Resilient Reefs (MRR) was contracted by the Maldives Ministry of Climate Change, Environment and Energy (MCCEE) to conduct Awareness, Training and Demonstration of Sustainable Fisheries Practices at Laamu Atoll for their Enhancing National Development through Environmentally Resilient Islands (ENDhERI) project. The objective of the contract is to increase the knowledge and awareness of the fishers and fish processors of Laamu Atoll on sustainable fisheries and its practices. This report provides details of the training session conducted for atoll and island councils and Women's Development Committees (WDCs) to build the capacity for systematic reporting on the required data for MFMRA - integrate with current reporting. During the Inception phase of the project, it was found that there are no requirements for fisheries data collection by island councils as all data is now collected through fisheries logbooks. However, Island Councils provided a supportive role in the fishing vessels licensing process. Therefore, the training for this target group focused on a) education and awareness on marine ecosystems, b) fisheries management, and c) local councils' engagement in fisheries management. Four participants from each council were invited to the training, encouraging 50% participation of women. In total, 41 participants from all 12 councils attended the training. Of these, 20 participants (49%) were women. Participants were encouraged to share their needs and issues throughout the training session, which included unsustainable fishing practices, the declining role of councils in fisheries management, declining work force in the atoll, delayed payments for tuna fishers and the need for the Maldives to get a higher price for tuna catch. The participants feedback on the training was very positive, emphasizing a desire for engaging, frequent and extended learning opportunities about fisheries management.



Figure 1: Participants and facilitators who attended the training session conducted for atoll and island councils and WDCs

18. Introduction

The Government of the Republic of Maldives, in collaboration with MCCEE, is implementing the ENDhERI project. This initiative, funded by the Global Environment Facility (GEF) and supported by the United Nations Environment Program (UNEP), aims to facilitate the adoption of new environmental policies and the transition toward Green Growth atoll development. This development strategy aims to sustain marine Natural Capital (NC) and enhance the resilience and recovery of reef ecosystems. The project will draw from integrated coastal zone management within a Managed Marine Area/Biosphere Reserve framework, along with innovative sustainability practices in sectors such as agriculture, fisheries, tourism, and construction. The goal is to transform the ecological impact in Laamu Atoll, leading to national-level sector transformation, spatial planning, and improved governance based on NC accounting.

The Consultancy is contracted to MRR, a Maldivian Non-Governmental Organisation (NGO) dedicated to restoring coral reefs in the Maldives as climate resilient ecosystems for the benefit of people, nature and the economies that depend on them. MRR's strategic intervention areas are: 1) Increasing effective marine protection to build climate resilience; 2) Improving the sustainability of reef-based fisheries; 3) Improving environmentally responsible tourism; and 4) Strengthening local capacities for marine resource management in the Maldives. MRR is officially affiliated with UK charity, Blue Marine Foundation. Blue Marine has a vision of a healthy ocean forever, for everyone.

The contract is primarily focused on Laamu Atoll, which is situated in the southern central region of the Maldives. The atoll is home to a diverse collection of coral reefs, mangroves, and a diverse marine ecosystem. It has a total surface area of 884.63 km² and 56 reefs with an area of 203.70 km². The atoll consists of 99 islands (77 vegetated and 22 unvegetated) of which 11 islands are inhabited with a recorded population of 18,281 individuals. According to data from the Maldives Bureau of Statistics (MBS), fisheries constitute the primary economic activity in Laamu Atoll, closely followed by agriculture.

The inhabited islands of Laamu Atoll are administered by their own island council led by elected councilors. Each island also has an elected WDC. The capital island of the atoll is Fonadhoo, which is the base for the Atoll Council. The Atoll Council is comprised of an elected president and the presidents of all island councils.

19. Aim and Objective

The main objective of this assignment *“Consultancy Services to Conduct Training, Awareness and Demonstration of Sustainable Fisheries Practices at Laamu Atoll”* is to increase the knowledge and awareness of the fishers and fish processors of Laamu Atoll on sustainable fisheries and its practices.

As per the Terms of Reference, MRR was required to conduct a training session for atolls and island councils and WDCs to build the capacity for systematic reporting on the required data for MFMRA - integrate with current reporting. Discussions held with the Maldives Ministry of Fisheries and Ocean Resources (MFOR) during the Inception phase of the project revealed that there are no requirements for fisheries data collection by island councils as all data is now collected through fisheries logbooks. However, it was recommended that councils keep a list of fishers *“Masveringe Dhafharu”* which could include the type of fisheries, no. of fishers and fishing vessels. This information will be useful for councils for their island development planning and to share with the Ministry and other stakeholders when such information is requested. Discussions held with local councils also revealed that councils

played a supporting role in the fishing vessels licensing process. Vessel owners can apply for the license through the council which then verifies the documents.

20. Key Areas Covered

The training for this target group focused on:

- Education and awareness on marine ecosystems;
- Fisheries management; and
- Local councils' engagement in fisheries management.

The training material was developed in Dhivehi and was made available as a softcopy (Pdf) for participants. Information on sustainable fisheries available on MRR's e-learning hub Masmahaaveshi was also shared with the participants.

21. Target Group

Four participants from each council, comprised of a council member, a technical person, an administrative staff and a member of the WDC were invited to the training, encouraging 50% participation of women. In total, 41 participants from all 12 councils attended the training (See Annex 1). Of these, 20 participants (49%) were women.

22. Schedule

The training session was conducted at Laamu Fonadhoo Ijuthimaaee Marukazu on 25 January 2024 from 09:00 to 16:30 hours. The training schedule is included as Annex 2.

MRR created a Viber group to share logistical information with participants. Logistical information was provided to participants via Viber at least three days before the training and a reminder was sent one day prior to the training. On the training day, a focal point was assigned to respond to any issues that may arise. The training was conducted in an indoor space with sufficient cooling. MRR checked the weather forecast three days and one day prior to the training.

23. Facilitators

The training session was conducted by Fisheries Management Expert, Dr Ahmed Riyaz Jauharee and Team Leader, Aminath Shaha Hashim.

Dr Ahmed Riyaz Jauharee has over 15 years of experience in fisheries management, conducting research on tuna ecology and tuna fishery including livebait fishery associated with the tuna fishery in the Maldives, based at the Maldives Marine Research Institute (MMRI), MFOR. He has a PhD in Functional Ecology and an MASc in Tropical Marine Ecology and Fisheries Biology. Dr. Jauharee additionally has 17 years of experience in the education field in curriculum and syllabus development, writing textbooks, teacher guides, student workbooks and conducting training on syllabuses.

Aminath Shaha Hashim is the Chairperson of Maldives Resilient Reefs and Maldives Programme Manager for Blue Marine Foundation. Through the two organisations, Shaha has been a key figure working on improving marine protection, sustainable fisheries, responsible tourism and Maldivian capacities in marine conservation in the Maldives. Prior to this, she worked with UN Agencies in the Maldives on various development projects for over eight years. Shaha is currently completing a distance MSc with University of Exeter, focusing on unravelling historic reference points for marine resources in the Maldives.

24. Workshop Proceedings



Figure 2: Participants sharing information about sustainable fishing practices followed by their forefathers and how they have changed.

8.1 Introduction

MRR encouraged two-way knowledge sharing between the facilitators and the participants. MRR assured participants that any issues or concerns they shared during the training will be confidential and reported anonymously unless they give express permission to use their name. No filming was undertaken during the training sessions (only photographs). Participants were assured that any audio recordings taken during the training will be deleted once the training report is drafted. MRR also assured participants that their opinions and thoughts will be included in the training report which will be shared with the MCCEE and MFOR.

At the beginning of the workshop participants were asked to engage in a short activity (values of their forefathers in fisheries management and how they have changed over time) through which they were able to interact with the other members in the group. This helped the participants to engage better both among themselves and with the facilitators too.

1. Ecosystems and their services

The workshop started with an introduction of three important ecosystems linked to the marine environment: coral reef, seagrass and mangroves. Importance and the services these ecosystems provided were shared among the participants. The participants also shared information about such ecosystems in Laamu atoll and the importance of preserving them. The significance of these ecosystems in ensuring a healthy fishery in laamu atoll was also discussed with the participants.

2. Fisheries

Information on world fisheries and how some of the fisheries have changed over time was shared with participants. Especially information on shifting baselines were discussed. Participants shared their perspectives on shifting baselines during their lifetime in Laamu atoll.

Various fisheries conducted in Laamu atoll was discussed during this session. An overview of the fishing activities and the estimated number of fishers engaged in these fisheries were shared with the participants. Important fishing grounds were also highlighted.



Figure 3: Participants sharing their group work on habitats and gears used to capture fish species.

8.2 Fisheries Management

1. Managing fishery resources

This was one of the most important topics that was discussed at the training. Evolution of fisheries in the Maldives overtime was discussed and how various fisheries were managed. Overtime how fishing effort had to be increased to meet the demand and how some fisheries were completely banned to ensure the revival of stocks was also explained. The connectivity between various species and their ecosystems was also presented.

Participants carried out an activity where they were asked to identify their favorite fish species, its habitats and how (using which gears) they are captured. The efficiencies of different gears and their utilization were discussed. Why some selected gears were used while others are not being used was discussed. Why Maldives do not use large nets for fishing was discussed too.

2. Fisheries law and regulations

Participants were also made aware of all fisheries-related laws and regulations. In addition, they were made aware of other regulations that were relevant to the fisheries-related activities but implemented by other agencies. MRR referred to the relevant Laws and Regulations of the Maldives when sharing fisheries management recommendations. If any voluntary fisheries management measures were shared, this was expressively made clear. The responsibilities of different agencies in managing fisheries resources and the island/ atoll councils' roles were discussed too. Examples of how resources within the jurisdiction of councils could be managed were highlighted.

The participants were made aware of illegal fishing activities / fishing gears in the Maldives. The consequences and penalties for using such fishing gears were highlighted as well.



Figure 4: Prohibited fishing activities in the Maldives slide shared with the participants, extracted from the Handbook on Fisheries Regulation (MFOR, 2022).

Participants were also made aware of the protected species in the Maldives. Discussions were conducted among the participants on why these organisms are protected and its benefits. In addition, information on export banned species and marine protected areas in the Maldives

was shared too. Marine protected areas in Laamu and their benefits were discussed with the participants.



Figure 5: Protected species in the Maldives slide shared with the participants.

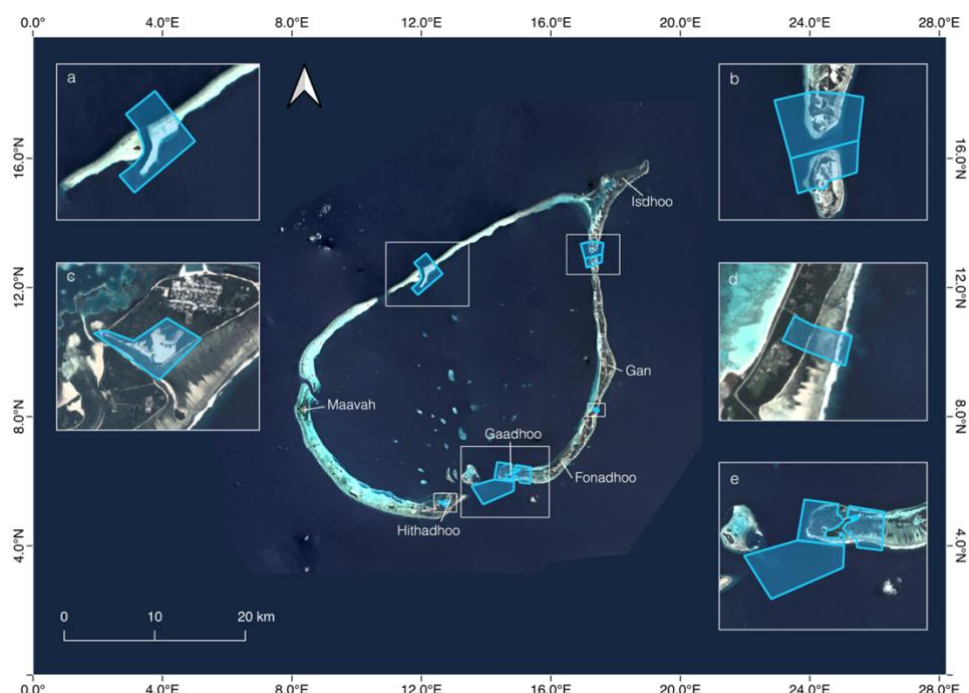


Figure 6: Protected Areas of Laamu Atoll slide shared with the participants.

8.3 Local Councils' engagement

The councils have an important role in ensuring that fisheries laws and regulations are properly followed within their jurisdiction. The councils have the legal authority for managing the fisheries resources within their jurisdiction. Hence, it is very important for the council members to be fully aware of the fisheries laws and regulations of the Maldives. For the council members it is also important to learn about sustainable exploitation and management of resources. During the training, they learnt about some of the fisheries that existed in the past and how these fisheries eventually

collapsed. For example: the giant clam fishery and the oceanic shark fishery. They learnt about techniques they could use to manage fisheries resources in their atoll.

The participants were informed of the importance of keeping a record of fishers, fishing and fish processing activities in the atoll, i.e., “masveringe dhaftharu”. The participants were made aware of the purpose for keeping fishery related records including “masveringe dhaftharu” and other fisheries related information such as number of vessels engaged in different types of fishing activities and the income generated for the communities from fishing and fishing related activities. Additional information on how councils could help to support fishing communities were shared during informal discussions at tea and lunch breaks. These included sharing information on the types of services that the council could provide for fishers as well as the fish processors. For example: installing facilities to provide fuel, water and ice for the fishers and providing space for processors to establish their processing facilities.



Figures 7-8: Discussions between facilitators and participants.

8.4 Wrap-up

Participants who wanted to share their messages on film were encouraged to do so during the dedicated filming session. They were asked to sign a consent form for the use and sharing of the videos by MRR and ENDHERI. Flipcharts and sticky notes were made available for participants to share their feedback during the training sessions. At the end of the training, participants were asked to fill a feedback form. Several participants shared their questions and views on flipcharts and their queries were addressed at the end of the sessions. The participants were informed of future trainings under this project and requested for their assistance identifying participants for the future sessions.

25. Needs and issues of the participants

Participants were encouraged to share their needs and issues throughout the training session. They shared their concerns with unsustainable fishing practices, the declining role of councils in fisheries management, declining work force in the atoll, delayed payments for tuna fishers and the need for the Maldives to get a higher price for tuna catch.

With regards to how the participants viewed sustainable fishing practices followed by forefathers, there were common themes among participants. Many participants noted that ancestors “were not wasteful” in their fishing and only caught sufficient amounts of fish that they needed on a given day. In contrast to this, today, fishers now take “as much fish and bait as they could” with little regard to the impact on the environment. Participants also noted that ancestors used to take bait from reefs closer to the island and did not use destructive gears such as lights or SCUBA equipment. Now fishers have to travel further to catch bait and use lights and scuba equipment to harvest livebait. Participants noted that their forefathers used other sustainable methods to catch reef fish and octopus. For example, ancestors used sticks to lure octopus out of their dens instead of harmful chemicals which are used now. Smaller reef fish that were accidentally caught would be released back into the sea before, but smaller size fish are also kept by fishers now.

Participants noted that the role of councils in fisheries management has declined compared to the earlier days of the island offices. They noted that fish catch data was previously recorded and submitted to Government ministries, but this practice has now stopped. The role of councils in fisheries management is now limited to processing fishing vessel registration and safety certificate applications. Some councils noted that they maintain information of active tuna fishing vessels and reef fishing dinghies to be included in their annual reports. One council noted that they maintained information about expatriates engaged in fishing. They also have a designated boat building area for fiber work which is rented out by the council. One council noted that fishing has declined in the island due to an increase in Government job opportunities which has led to the one or two active fishing boat being unable to meet the island’s demand for tuna.

A common concern among the participants was that fishers do not get a fair price for their hard work. Participants noted that tuna fishers have gone three months without getting paid for their catch. This led one council to participate in a protest at Maandhoo fish factory to advocate on behalf of the island’s fishers. Participants questioned whether there was any work being done by the Maldives to get a higher price for the tuna caught by Maldivian fishers to maintain this sustainable method of fishing. Dr Jauharee noted that there were ongoing negotiations to slash the duty imposed on tuna exports to European markets as well as exploring new markets. Participants also asked what is being done by the government to manage the fisheries. Dr Jauharee noted that the biggest challenge with fisheries management is the lack of sufficient, accurate data and the limited work force. He noted that the government is now employing electronic monitoring systems to resolve this issue.

26. Feedback of participants

38 participants completed the feedback form, which was delivered online, and on paper. The majority (97%) expressed satisfaction with the training provided. Regarding the relevance of the training content to their roles, 71% found it applicable. 95% of the respondents expressed a likelihood of utilizing their newfound knowledge. These findings underscore a general positive reception towards the training.

Respondents expressed the training content was easy to comprehend, and they learned new knowledge and information. They suggested incorporating more activities in future sessions. Furthermore, they requested more frequent and extended training sessions. Their feedback emphasizes a desire for engaging, frequent and extended learning opportunities about fisheries management.

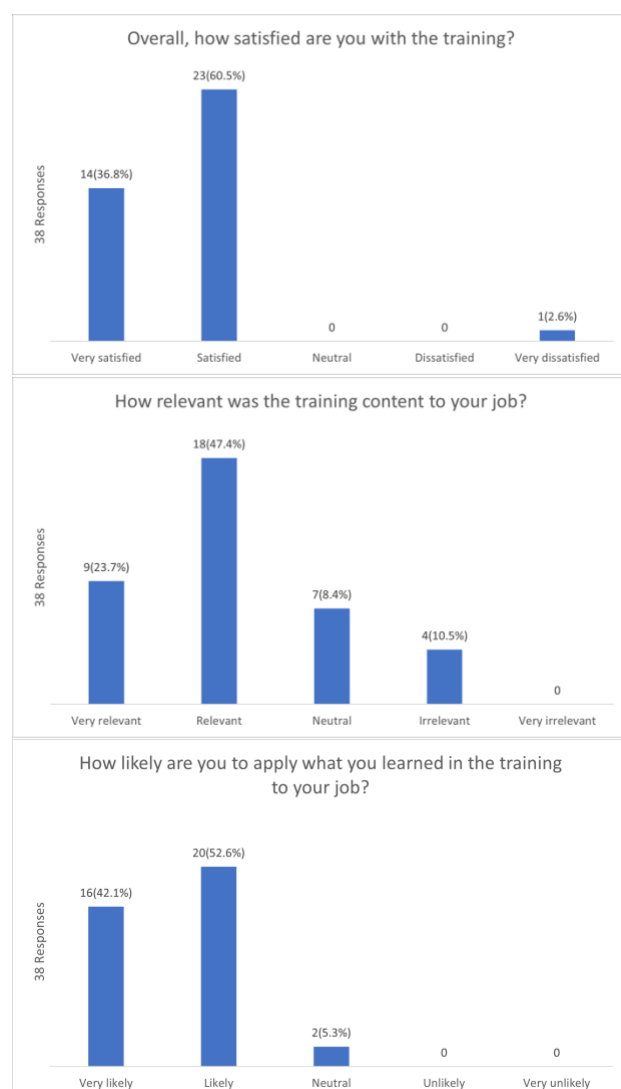


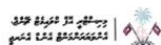
Figure 9: Summary of responses for the feedback forms

27. Conclusion and Recommendations

The training session conducted for atoll and island councils and WDCs in Laamu Atoll to build the capacity for systematic reporting on the required data for MFMRA was very successful. The high turnout for the training and the positive feedback shared by the participants is very encouraging.

Based on the issues and needs shared by the participants, it is apparent that the local councils in Laamu Atoll are interested to gain more knowledge on and be more involved in fisheries management. It is recommended to explore a fisheries co-management model where local councils and fishers are provided with opportunities to do this. During the past few decades there has been a global shift from the typical centralised approach to fisheries to one that recognizes the importance of fishers' participation and shared decision-making in the management of fisheries. This approach is called "co-management" and is characterized by the interaction between government and fisheries users, through consensus building and the sharing of different management roles and responsibilities. Fisheries co-management ensures that user-groups participate in the decision-making on how to protect and exploit the resources, and to some extent also in the monitoring, surveillance, and control of the fisheries. Co-management is increasingly seen as an alternative to centralized fisheries management, because it integrates the experiences gained by user-groups with scientific advice and policy considerations at central level.

Annex 1 – List of Attendees



Laamu Fisheries Education Training – Councils Session Attendance Sheet

#	Name	Designation	Phone	Signature	Council
1	Ibrahim Shakir	Assitant Council Officer	7939513		Atoll Council
2	Hussain Haisham	Council Officer	7967496		
3	Adam Naseem	Council Vice President	9982353		Isdhoo
4	Mariyam Shifa	Council Member	9100086		
5	Mohamed Waseem	Council Officer	9983019		
6	Mariyam Shameema	WDC president	9143204		Kalaidhoo
7	Mohamed Saaidh	Council Member	7889889		
8	Mariyam Suzana	Assistant Council Officer	9786770		
9	Abdulla Hameed	Senior Council Officer	7707861		Dhanbidhoo
10	Nasma Ali	WDC member	9833272		
11	Zubaidha Ahmed	Council Member	7532692		
12	Rosy Ibrahim	WDC president	9412913		Maabaidhoo
13	Ali Hafeez	Assistant Council Officer	7992405		
14	Adam Mohamed	Assistant Council Executive	9988491		
15	Fathimath Azma	Council Vice President	7434226		Mundoo
16	Ahmed Naufal	Council Assistant Executive	9142000		
17	Mohamed Shamveel	Assistant Council Officer	7927069		
18	Sureena Mohamed	WDC president	9173561		Gan
19	Ali Shafeeu	Council Member	7615167		
20	Fathimath Saajidha	Council Member	7838284		
21	Aminath Azeema	WDC member	7569018		Fonadhoo
22	Mariyam Nashvath	Assistant Council Officer	7344735		
23	Fathimath Shazna	Assistant Council Officer	7122914		
24	Fathimath Raziyya	WDC member	7557237		Maavah
25	Hassan Mukhtar	Fisheries Ranger	9313030		
26	Aishath Azeema	Council Member	7791592		
27	Mohamed Faig	Secretary General	7979796		Maamendhoo
28	Aishath Risma	WDC President	7943040		
29	Hussain Shafeeq	Council Assistant Executive	9980020		
30	Salman Abdul Raheem	Council Member	9977775		Hithadhoo
31	Moosa Ibrahim	Council Officer	9999871		
32	Aminath Ansoodha	Council member	9723153		
33	Khadheeja Shifla	WDC member	9122920		Kunahandhoo
34	Ibrahim Rameez	Council Vice President	9661118		
35	Madheeja Moosa	WDC Vice President	9151088		
36	Khadheeja Hussain	Council Member	9900325		
37	Hawwa Mizna	WDC Vice President	7683948		
38	Mohamed Hussain	Receptionist	9842866		
39	Mohamed Tholaal	Environment Officer	9584460		
40	Ahmed Azim	Council Vice President	9527638		
41	Ahmed Shameem	Assistant Council Officer	7651635		
42	Hussain Ahmed	Council Assistant Executive	7869966		

Annex 2 - Agenda for Atoll and Island Councils and WDCs training

Date: Thursday, 25 January 2024

Time: 09:00 – 16:30 hours

Venue: Laamu Fonadhoo Ijuthimaaee Marukazu

Time	Session Information
09:00 – 09:15 (15 minutes)	Introduction of trainers and participants
09:15 – 10:15 (1 hour)	Session 1 – Introduction <i>Activity: What were the values of our forefathers with regards to fishing? And how have they changed?</i> <ul style="list-style-type: none"> • Marine ecosystems • World fisheries and fishing in the Maldives • The status of fisheries in the Maldives with a focus on Laamu Atoll
10:15 – 10:45 (30 minutes)	Tea/ coffee break
10:45 – 11:00 (15 mins)	Q&A session
11:00 – 12:30 (1.5 hour)	Session 2 – Fisheries management <ul style="list-style-type: none"> • Fisheries management and its importance <i>Activity: Identify important habitats, gears and species for each assigned fishery.</i> <ul style="list-style-type: none"> • Fisheries management Laws and Regulations • The responsibilities of different entities and MPAs • Permitted and prohibited fishing activities • Protected species and areas • Keystone and ecologically vulnerable species
12:30 – 13:30 (1 hour)	Lunch and prayer break
13:30 – 13:45 (15 mins)	Q&A session
13:45 – 14:30 (45 mins)	Session 3 – Local council's engagement <ul style="list-style-type: none"> • Use of fisheries data for managing fisheries resources • Fisheries data collection – sources and logbook <i>Activity: Fisheries data collection – logbooks</i> <ul style="list-style-type: none"> • Masveringe dhaftharu
14:30 – 15:00 (30 mins)	Q&A session
15:00 – 15:30 (30 minutes)	Project discussion <ul style="list-style-type: none"> • Presentation of training plan

	<ul style="list-style-type: none"> • Share details about the formation of Laamu fisher stakeholder committees and ENDhERI small grants. • <i>Participant's feedback</i>
15:30 – 16:30 (1 hour)	Evening tea and filming