

L. Maabaidhoo Koaru and Fushi Kan'du Area Management Plan



Copyright © 2025, Ministry of Tourism and Environment

5th Floor, Velaanaage, 20096, Ameeru Ahmed Magu, Malé, Maldives

Prepared by the Enhancing National Development through Environmentally Resilient Islands (ENDhERI) Project for the Ministry of Tourism and Environment

Author: Water Solutions Pvt Ltd

(Consultancy Service to Develop Management Plan for Six Protected Areas at Laamu Atoll)

Layout & Cover Design: Ali Nizar

Table of Contents

LIST OF FIGURES AND TABLES	6
EXECUTIVE SUMMARY	7
INTRODUCTION	8
VISION.....	9
MANAGEMENT OBJECTIVES	10
DESCRIPTION OF THE SITE	11
ZONE 1	11
<i>Current resource use</i>	<i>14</i>
ZONE 2 AND ZONE 3	16
<i>Current resource use</i>	<i>16</i>
KEY VALUES OF THE SITES	21
IDENTIFICATION OF CONSTRAINTS, OPPORTUNITIES AND THREATS	22
CONSTRAINTS.....	22
THREATS	22
OPPORTUNITIES.....	25
GOVERNANCE	27
ROLES AND RESPONSIBILITIES OF THE MINISTRY OF TOURISM AND ENVIRONMENT (MOTÉ).....	27
ROLES AND RESPONSIBILITIES OF THE ENVIRONMENTAL PROTECTION AGENCY (EPA)	27
ROLES AND RESPONSIBILITIES OF LAAMU MAABAI DHOO COUNCIL	28
ROLES AND RESPONSIBILITIES OF THE PA MANAGEMENT UNIT.....	28
THE PA MANAGEMENT STEERING COMMITTEE	29
KEY REGULATIONS, POLICIES, CODES OF CONDUCT AND GUIDANCE	30
BOUNDARY AND ZONATION	33
ZONE 1	33
ZONE 2 AND ZONE 3	40
MANAGEMENT STRATEGIES/ACTION PLANS.....	45
OBJECTIVE 1: GOVERNANCE.....	45
OBJECTIVE 2: ECOLOGICAL.....	45
OBJECTIVE 3: SOCIAL, CULTURAL AND ECONOMIC.....	45
COMPLIANCE AND ENFORCEMENT	48
MONITORING AND EVALUATION	49
APPENDICES	50
APPENDIX 1: LAAMU MAABAI DHOO KOARU AND FUSHI KAN'DU AREA GOVERNANCE STRUCTURE	50
APPENDIX 2: FUNCTIONS AND STRUCTURE OF THE PA MANAGEMENT UNIT	51
APPENDIX 3: TRAINING REQUIREMENTS FOR THE PA MANAGEMENT UNIT	53
APPENDIX 4: ANNUAL PROGRAMME AND WORK PLAN DEVELOPMENT GUIDELINE	56

APPENDIX 5: ANNUAL REPORTING TEMPLATE	59
APPENDIX 6: MONTHLY DATA REPORTING TEMPLATE	61
APPENDIX 7: VISITOR SURVEY QUESTIONNAIRE DEVELOPMENT GUIDE FOR MAABAI DHOO KOARU	66
APPENDIX 8: GUIDELINES TO MONITOR NON-COMPLIANCE INCIDENCES OF PA RULES	70
APPENDIX 9: PA ECOLOGICAL BASELINE AND PERIODIC MONITORING SCHEDULE	72
APPENDIX 10: ACTIVITIES ALLOWED AND PROHIBITED IN THE PA	75
APPENDIX 11: GUIDELINES FOR ACCESS AND OTHER FEES	77
APPENDIX 12: GUIDELINES FOR SELLING PRODUCTS WITHIN THE MAABAI DHOO KOARU PA	78
APPENDIX 13: GUIDELINES FOR PHOTOGRAPHY AND VIDEOGRAPHY WITHIN THE MAABAI DHOO KOARU AND FUSHI KAN'DU AREA	80
APPENDIX 14: GUIDELINE FOR TRADITIONAL RESOURCE USE IN MAABAI DHOO KOARU AND LAAMU KANUHURAA	81
APPENDIX 15: GUIDELINE TO CONDUCT RESEARCH IN THE MAABAI DHOO KOARU AND FUSHI KAN'DU AREA	82
APPENDIX 16: PENALTIES FOR NON-COMPLIANCE IN MAABAI DHOO KOARU AND FUSHI KAN'DU PA	83
APPENDIX 17. A 10-YEAR WORK PLAN FOR MANAGEMENT OF MAABAI DHOO KOARU AND FUSHI KAN'DU AREA	84
APPENDIX 18. FINANCIAL PLAN	91
EXECUTIVE SUMMARY	93
INTRODUCTION	94
DESCRIPTION OF FINANCIAL PLAN	95
INITIAL INVESTMENT	95
OPERATING COSTS	95
REVENUE BREAK-UP	95
CASH FLOW	96
RISK MANAGEMENT	97
MONITORING AND EVALUATION	97
ANNEX A: INITIAL INVESTMENT	98
ANNEX B: OPERATING COSTS	99
ANNEX C: REVENUE BREAK-UP	100
ANNEX D: CASH FLOW	102

List of Figures and Tables

<i>Figure 1: Zone 1, Laamu Maabaidhoo Koaru Area</i>	13
<i>Figure 2: L. Maabaidhoo Koaru Area existing resource use</i>	15
<i>Figure 3: Zone 2, Fushi Kan'du and Zone 3, Fushi and Kanuhuraa islands</i>	17
<i>Figure 4: Zonation map for Fushi Kan'du and L. Fushi and Kanuhuraa islands</i>	17
<i>Figure 5: Existing resource use map for Zone 2 and 3</i>	19
<i>Figure 6: Existing resource use map for L. Fushi</i>	20
<i>Figure 7: Proposed resource use zones for Maabaidhoo Koaru Area (Zone 1)</i>	34
<i>Figure 8: Proposed resource use: terrestrial traditional uses for Zone 1</i>	35
<i>Figure 9: Proposed resource use: marine traditional uses for Zone 1</i>	36
<i>Figure 10: Proposed resource use: picnic area for Zone 1</i>	37
<i>Figure 11: Proposed resource use: surfing for Zone 1</i>	38
<i>Figure 12: Proposed resource use: ecotourism area for Zone 1</i>	39
<i>Figure 13: Proposed resource use zones for Zone 2 and 3</i>	41
<i>Figure 14: Proposed resource use: diving area for Zone 2</i>	42
<i>Figure 15: Proposed resource use: traditional use in marine area for Zone 3</i>	43
<i>Figure 16: Proposed resource use: picnic area for Zone 3</i>	44
 <i>Table 1. Summary of the PA Zones</i>	 11
<i>Table 2: Threat prioritization matrix</i>	24
<i>Table 3. Description of proposed resource use zones for Zone 1, Maabaidhoo Koaru Area</i>	33
<i>Table 4. Description of proposed resource use zones for Zone 2 and 3, Fushi Kan'du, Fushi and Kanuhura islands</i>	40
<i>Table 5. Management Actions for Maabaidhoo Koaru and Fushi Kan'du Area</i>	45

Executive summary

L. Maabaidhoo Koaru and Fushi Kan'du Area has been declared as a Protected Area (PA) on 23rd December 2021 pursuant to the law no 4/93 (Environment Protection and Preservation Act) . This area is categorized into three zones: (1) Zone 1- L. Maabaidhoo Koaru Area, (2) Zone 2 - Fushi Kan'du area, and (3) Zone 3 - L. Kanuhuraa and L. Fushi. The total area of the PA is 518 hectares. Zones 1 and 3 were declared as PAs under the Category 7: Protected Area with Sustainable Use while Zone 2 was declared a PA under Category 6: Species/Habitat Management Area. The PA is mainly protected for its significant biodiversity and social significance for the local community. This management plan is developed in pursuant to Clause 12 of the regulation no 2018/R-78 (Protected Areas Regulation) to ensure sustainable use and management of the PA.

The vision of the L. Maabaidhoo Koaru and Fushi Kan'du Area is “to utilize the economic benefits and to maintain and improve the ecosystem functions and services of Maabaidhoo Koaru and Fushi Kan'du Protected Area for the local community, while effectively managing the area to ensure sustainability and ecological health”. The following 3 objectives are identified for the management plan to achieve this vision:

- Objective 1: By the end of 2026, an effective management plan will be implemented with a functioning management unit on-site.
- Objective 2: By the end of 2028, the current levels of marine and terrestrial flora and fauna within the PA are maintained or improved.
- Objective 3: By the end of 2028, appreciation of the cultural, social and economic value of the PA by the local community and visitors has increased.

The L. Maabaidhoo Koaru and Fushi Kan'du Area is proposed to be managed under a co-management governance regime with roles and responsibilities distributed among the Ministry of Tourism and Environment (MoTE), the Environmental Protection Agency (EPA) and Laamu Maabaidhoo Council (LMC). The LMC will establish a PA Management Unit within the Council to implement the management plan.

The management plan provides guidelines on the governance and management of the PA including establishment of the management unit and infrastructure, visitor management, compliance monitoring and enforcement, research and monitoring and management effectiveness monitoring.

Introduction

This management plan is developed in pursuant to Clause 12 of the Regulation no 2018/R-78 (Protected Areas Regulation) to ensure sustainable use and management of Laamu Maabaidhoo Koaru and Fushi Kan'du Area. This area is categorized into three zones: Zone 1 - L. Maabaidhoo Koaru Area, Zone 2 - Fushi Kan'du area, and Zone 3 - L. Kanuhuraa and L. Fushi. The L. Maabaidhoo Koaru and its surrounding areas, the Fushi Kan'du channel area and the uninhabited islands of L. Kanuhuraa and L. Fushi has been declared as a Protected Area (PA) on 23rd December 2021 pursuant to the law no 4/93 (Environment Protection and Preservation Act) . The total area of 518 hectares was declared as a PA under the Category 7: Protected Area with Sustainable Use following the government announcement no: (IUIL)438-ENV/438/2021/371. The PA is mainly protected for its significant biodiversity and social significance for the local community.

The Maabaidhoo Koaru and Fushi Kan'du Area PA is proposed to be managed under a co-management governance regime with roles and responsibilities distributed among the Ministry of Tourism and Environment (MoTE), the Environmental Protection Agency (EPA) and Laamu Maabaidhoo Council (LMC). The LMC will establish a PA Management Unit within the Council to implement the management plan.

The PA management plan was developed through a combination of field visits, surveys, stakeholder consultations and review of PA management resources available from expert sources and other PAs. An initial field visit was conducted to understand the current physical condition of the PA as well as management relevant components. A management concept was developed based on information collected. A second visit was also conducted to share the management concept with the Island Council and other local stakeholders. A market assessment and willingness to pay for improved management was carried out. Validation workshop with the relevant authorities and stakeholders was conducted to refine the management plan.

Vision

Laamu Maabaidhoo Koaru and Fushi Kan'du area is recognized as a PA due to its unique biodiversity and social significance. The vast Koaru area is home to many species of mangrove plants, and has a large open waterbody. This area is a popular picnic area enjoyed by locals, spending a full day by the water. Local women gather fallen palm fronds and mature coconut from here and bury palm fronds in the process of coconut thatch weaving, which is a crucial source of income for women. The PA also includes the lagoon which has multi-species seagrass meadows, and the adjacent reef environment. The channel, Fushi Kan'du is a prime location for diving due to the interesting and rare megafauna observed in the area as well as beautiful coral pinnacles. It is an important area for fishers in Laamu for reef fishery, a significant economic activity in Laamu atoll. The Council has high hopes to develop the Koaru area for tourism, and facilitate sustainable diving and fishing in Fushi Kan'du to boost the economy of the island and open doors for job opportunities. The purpose of this management plan is to effectively manage the area while sustainably using its resources for community benefit.

The Maabaidhoo Koaru and Fushi Kan'du Area PA is therefore guided by the following vision:

“To utilize the economic benefits and to maintain and improve the ecosystem functions and services of Maabaidhoo Koaru and Fushi Kan'du Protected Area for the local community, while effectively managing the area to ensure sustainability and ecological health.”

Management objectives

The main objectives of this management plan are:

- Objective 1: By the end of 2026, an effective management plan will be implemented with a functioning management unit on-site.
- Objective 2: By the end of 2028, the current levels of terrestrial and marine flora and fauna within the PA are maintained or improved.
- Objective 3: By the end of 2028, appreciation of the cultural, social and economic value of the PA by the local community and visitors has increased.

Description of the Site

The Laamu Maabaidhoo Koaru and Fushi Kan'du Area has a total size of 518 ha area which consists of 35.17 ha of terrestrial area and 482.83 ha of marine area. The PA is divided into three zones and Table 1 gives a summary of the 3 zones.

Table 1: Summary of the PA Zones

Zone	PA Category	Area/ha
Zone 1 - L. Maabaidhoo Koaru Area (Figure 1)	Category 7: PA with Sustainable Use	Total: 171.38 ha Marine: 142.87 ha Terrestrial: 28.51 ha
Zone 2 - Fushi Kan'du area (Figure 3)	Category 6: Species/Habitat Management Area	Total: 346.62 ha Marine: 339.96 ha
Zone 3 - L. Kanuhuraa and L. Fushi. (Figure 3)	Category 7: PA with Sustainable Use	Terrestrial: 6.66 ha

Zone 1

Zone 1 corresponds to L. Maabaidhoo Koaru Area. This is an open-ended mangrove area with a total size of 171.38 ha, with a terrestrial area of 28.5 ha and marine area of 142.87 ha, as shown in Figure 1. This zone is declared as a Category 7: Protected Area with Sustainable Use under the local PA Regulation and it corresponds to IUCN Category VI which are areas protected for sustainable use of natural resources.

Physical features: L. Maabaidhoo, located at 2.025308, 73.531052, is an inhabited island. The Koaru area is characterized by a terrestrial area consisting of mangrove vegetation and a water body which is located at the northern end of Maabaidhoo. The area is bounded by the following geographical coordinates given in Figure 1. The mangrove is open ended with a narrow opening to the North, leading to the surf break known as “Machine”. The beach is white sand with no prominent features, with severe erosion in some areas. Bathymetry data of the mangrove and lagoon is not available and needs to be taken.

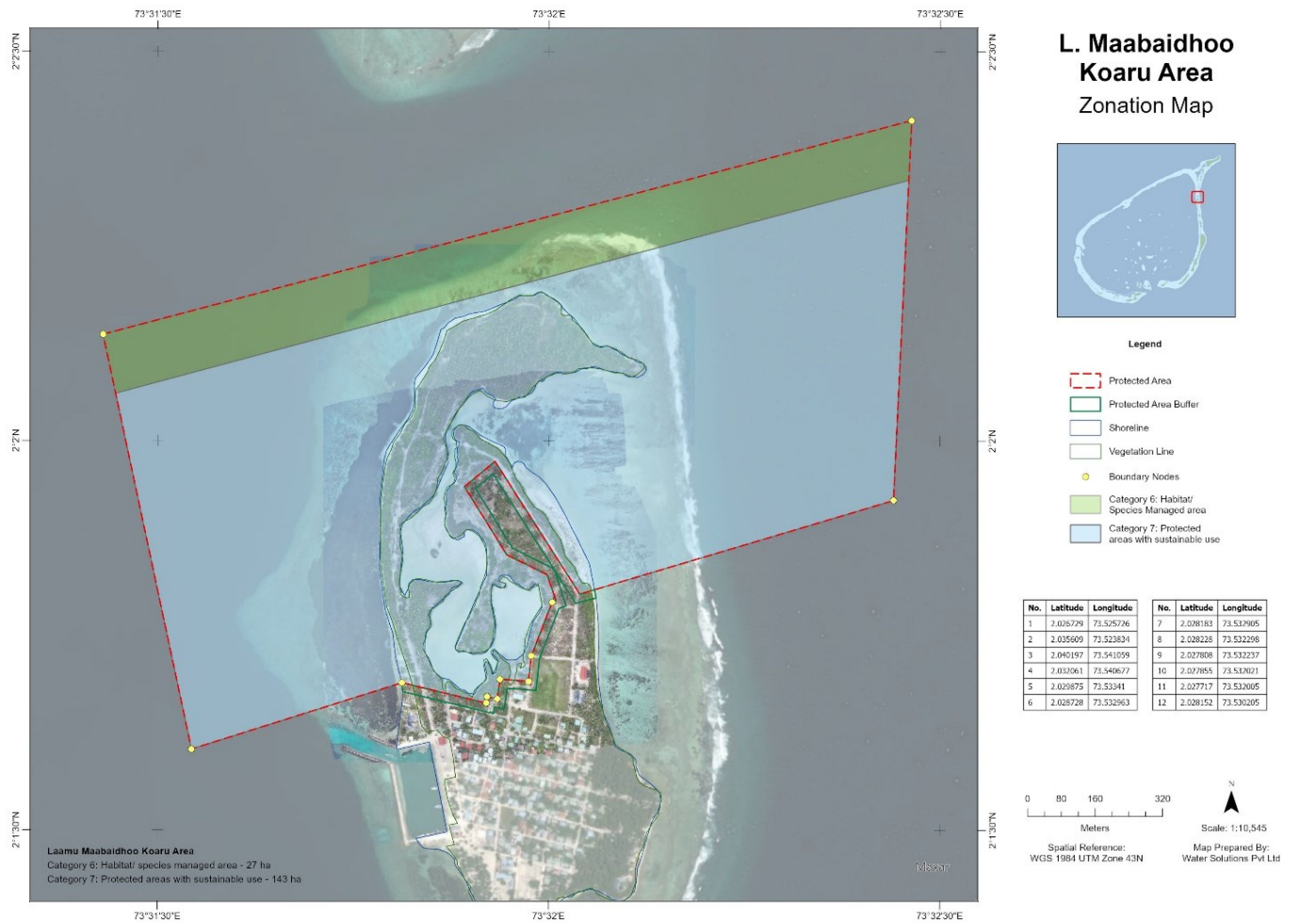
Biological features: In the terrestrial area, the dominant species is *Pemphis acidula* (Ironwood/ kuredhi). Other commonly found species include *Hibiscus tiliaceus* (Dhiggaa), *Pandanus tectorius* (Boa kashikeyo) and *Scaevola taccada* (Magoo), which are mangrove-associated species. The mangrove areas are also ecologically significant for freshwater retention and mitigating flood impacts as well as sequestering carbon. High levels of damage, degradation and evidence of human disturbance were noted in many trees. Mangrove species, including *Rhizophora mucronata* (Red mangrove/Randoo) and *Ceriops tagal* (Yellow mangrove/Karamana) are recorded in this area. A few saplings of these species were introduced in 2017 from Hithadhoo Island as part of a restoration programme. The area also is an important habitat for crabs, including *Calinectes sapidus* and Fiddler crabs. There are 17 species of fish recorded, mostly juveniles in the waterbody. Commercially

significant fish families were also found - (snappers, jacks, emperors, groupers and barracudas). The lagoon area includes seagrass meadows where five species of seagrass have been documented (*Thalassia hemprichii*, *Thalassendron ciliatum*, *Halodule pinofilia*, *Syringodium isoetifolium* and *Cymodocea rotundata*). The area is also highlighted to have high mean fish diversity, including a high proportion of juveniles significant for fisheries and coral reefs. Many seasonal birds visit the mangrove but their diversity/ population dynamics are not properly understood due to a lack of studies

Economic features: A few plots of land are allocated for farming where cucumbers are cultured.

Cultural features: The Koaru area is used by locals to collect fallen palm fronds (*fann*) which is used for coconut thatching (*fangi vinun*), a traditional craft which is an important economic activity in L. Maabaidhoo. Locals also gather mature coconut (*kaashi*) and bury to soften coconut husks in the waterbody (*bon'bi faa kurun*). This is part of the process of making coir rope (*roanu veshun*), which is used for coconut thatch. Palm fronds are also buried in this manner in the process of coconut thatching.

Figure 1: Zone 1, Laamu Maabaidhoo Koaru Area

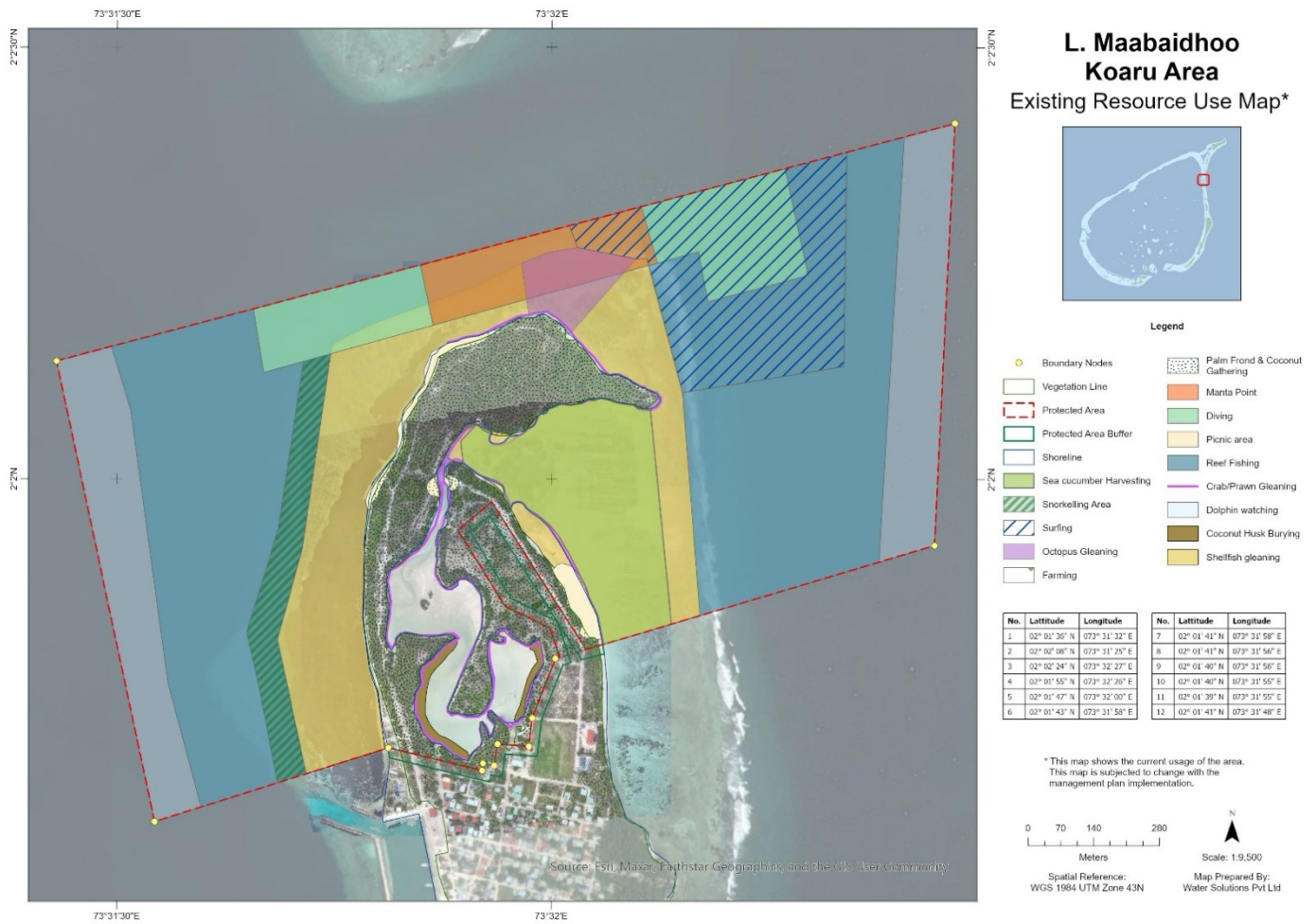


Current resource use

Currently, this area is mainly used recreationally and traditional uses. The current resource uses are given below and in Figure 2.

1. Picnicking: Important community area for locals to use for picnics, swimming and canoeing., especially during weekends and holidays
2. Visitor attraction: Many visitors, including from Laamu atoll, other parts of Maldives, and tourists visit the area.
3. Traditional uses: According to the local Council, traditional collection of fallen palm fronds and fallen mature coconuts by locals is allowed in the area. Locals also bury coconut husk and fallen palm fronds in the water body (*bonbi valhulun*). Locals also glean Fiddler crabs and prawns from the waterbody. At night, locals use flashlights to blind the prawns and catch them easily.
4. Farming: Some plots of land are allocated for agriculture inside the PA. Mostly cucumbers are cultured here.
5. Surfing: The surf point, Machine, is popular and frequented by liveaboard vessels.
6. Fisheries: The lagoon is also used for octopus, sea cucumber, billfish and lobster fisheries during low tides. According to the Council, there are high levels of fishing all around the island.
7. Diving: The northern end of the reef is used for diving. It is a popular site used by resorts, guesthouses, and liveaboards. There is a Manta point in this area as well.
8. Sea cucumber harvesting: This is carried out in the eastern side of the lagoon.
9. Snorkeling: The western reef is a popular spot for snorkeling, mainly locals go to this area for snorkeling.

Figure 2: L. Maabaidhoo Koaru Area existing resource use



Zone 2 and Zone 3

Zone 2, L. Fushi Kan'du Area is a channel, and across it lies Zone 3, L. Kanuhuraa and L. Fushi. Zone 2 and 3 has a total size of 346.62 ha, with 6.66 ha of terrestrial area and 339.96 ha of marine area shown in Figure 3. Zone 2 is declared as a Category 6: Species/Habitat Management area under the local PA regulation and corresponds to IUCN Category IV which are areas protected for habitat and species management. Zone 3 is declared as a Category 7: Protected Area with Sustainable Use under the local PA Regulation and it corresponds to IUCN Category VI which are areas protected for sustainable use of natural resources (see Figure 3).

Physical features: The Fushi Kan'du channel is located at 2.039233, 73.531445 and is on Laamu atoll's northeastern edge. The PA is bounded by geographical coordinates given in Figure 3. The channel is approximately 250m in length, with five pinnacles across its width. According to the island community, the island located at 2.023549, 73.315610 was split from Kanuhuraa island, at 2.023549, 73.315610. South from Kanuhuraa is Fushi, at 2.025751, 73.0315583.

Biological features: Fushi Kan'du is known as a famous dive spot, with whitetip reef sharks, grey reef sharks, silver tip sharks, eagle rays, barracuda, fusilier, jacks and snappers abundantly found by the pinnacles and the channel. On the sandy bottom stingrays can be seen. Fushi Kan'du was found to have the second-highest live coral cover and fish abundance in Laamu atoll, and most biodiverse site for reef fish. Laamu Atoll also has manta sightings all year round, with Fushi Kan'du being among the key sites for cleaning and courtship of reef manta rays. The mean number of reef manta sightings have been decreasing since 2017 but the reason for this is not known. The spawning of *Plectropomus areolatus* and *Plectropomus laevis* has been recorded in Fushi Kan'du but more research needs to be done to scientifically verify this. Fushi Kan'du is a significant area for Napoleon Wrasses, with the recorded aggregations pointing towards possible spawning at the site. Endangered species sighted at Fushi Kan'du include *Chelonia mydas* (Green turtles), *Mobula alfredi* (Reef manta ray) and rarely, *Rhincodon typus* (Whale shark). The island split from L. Kanuhuraa is a site important for seabird nesting and breeding. This is currently not being monitored and further research is needed to understand more about the species, numbers etc.

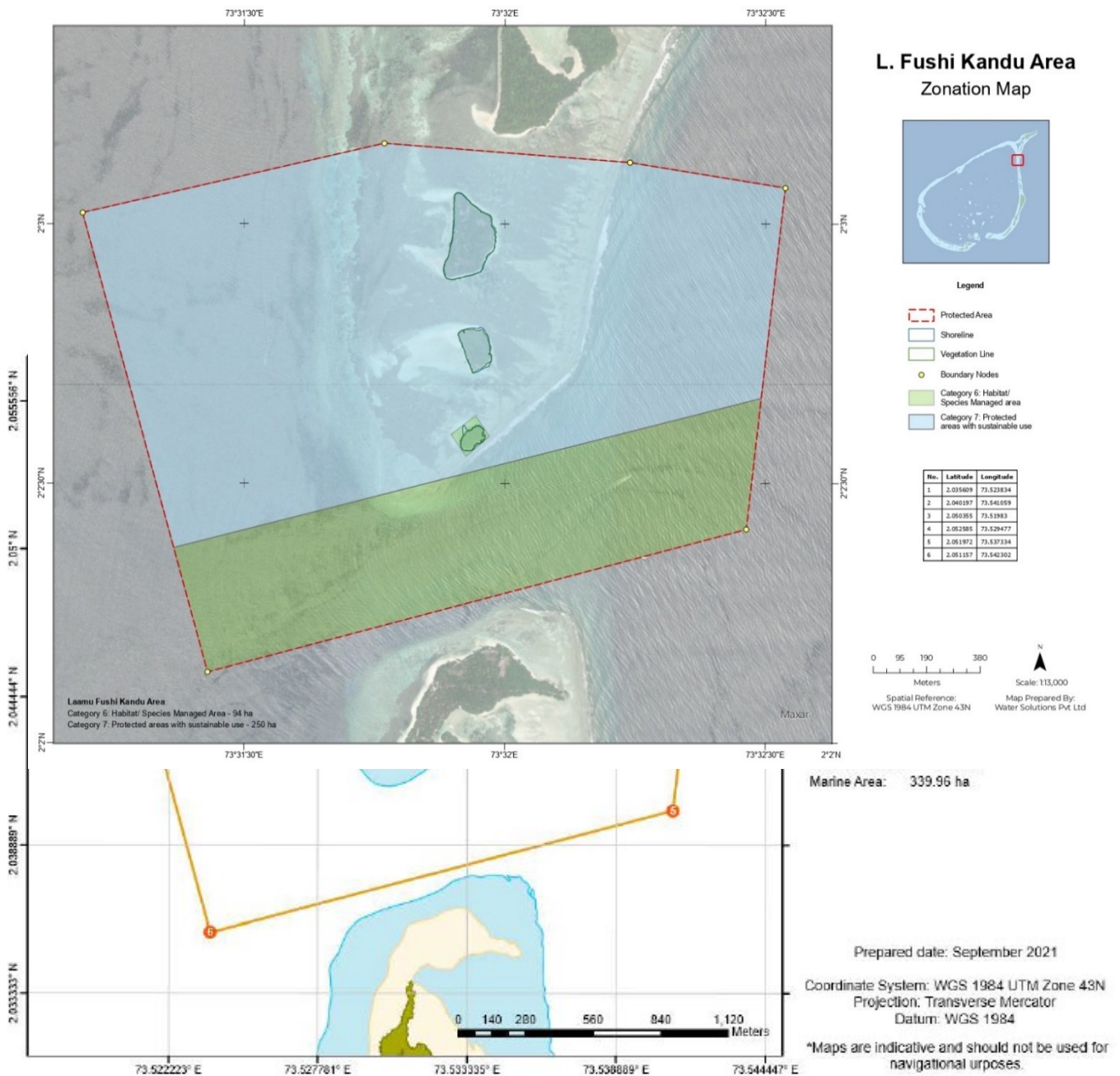
Economic features: Fushi Kan'du is heavily used by fishers of Laamu Atoll for reef fishery. *Golha Riha* is a curry unique to the atoll and prepared using general reef fish.

Cultural features: The island of L. Fushi is used for collecting fallen *fann* and *kaashi* for coconut thatch, similarly as aforementioned for Maabaidhoo Koaru.

Current resource use

Mainly, this area is used for recreational and economic purposes. The current resource uses are given below (see Figure 5 and Figure 6)

1. Diving: Fushi Kan'du is famous and a unique dive site. Six Senses Laamu, the nearest resort, has "Fushi Fridays" - offering weekly dives to the site. It is also popular among other dive schools in Laamu, and liveaboard vessels.



2. Fisheries: High level of reef fishery has been noted in this area, mainly for subsistence. The lagoon is also used for octopus and shellfish gleaning during low tides. Recreation fisheries by the tourism sector is also conducted, as well as dolphin watching.
3. Picnicking: Kanuhuraa is a picnic spot for residents of Maabaidhoo and other nearby islands, and a site for collecting *fann* and *kaashi*. The lagoons of these islands have low levels of octopus, sea cucumber, billfish and lobster fisheries.

Figure 3: Zone 2, Fushi Kan'du and Zone 3, Fushi and Kanuhuraa islands

Figure 4. Zonation map for Fushi Kan'du and L. Fushi and Kanuhuraa islands

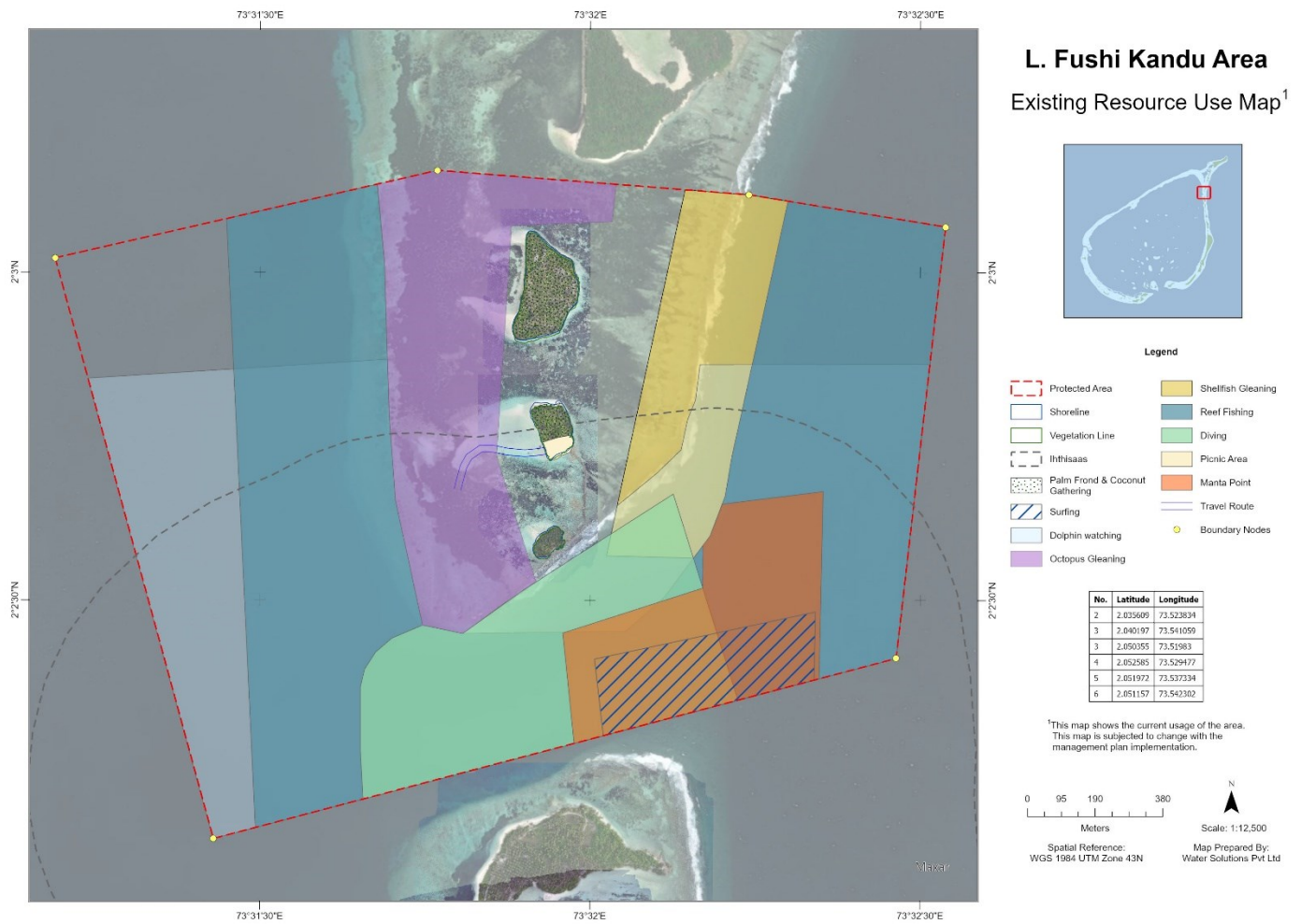


Figure 5: Existing resource use map for Zone 2 and 3

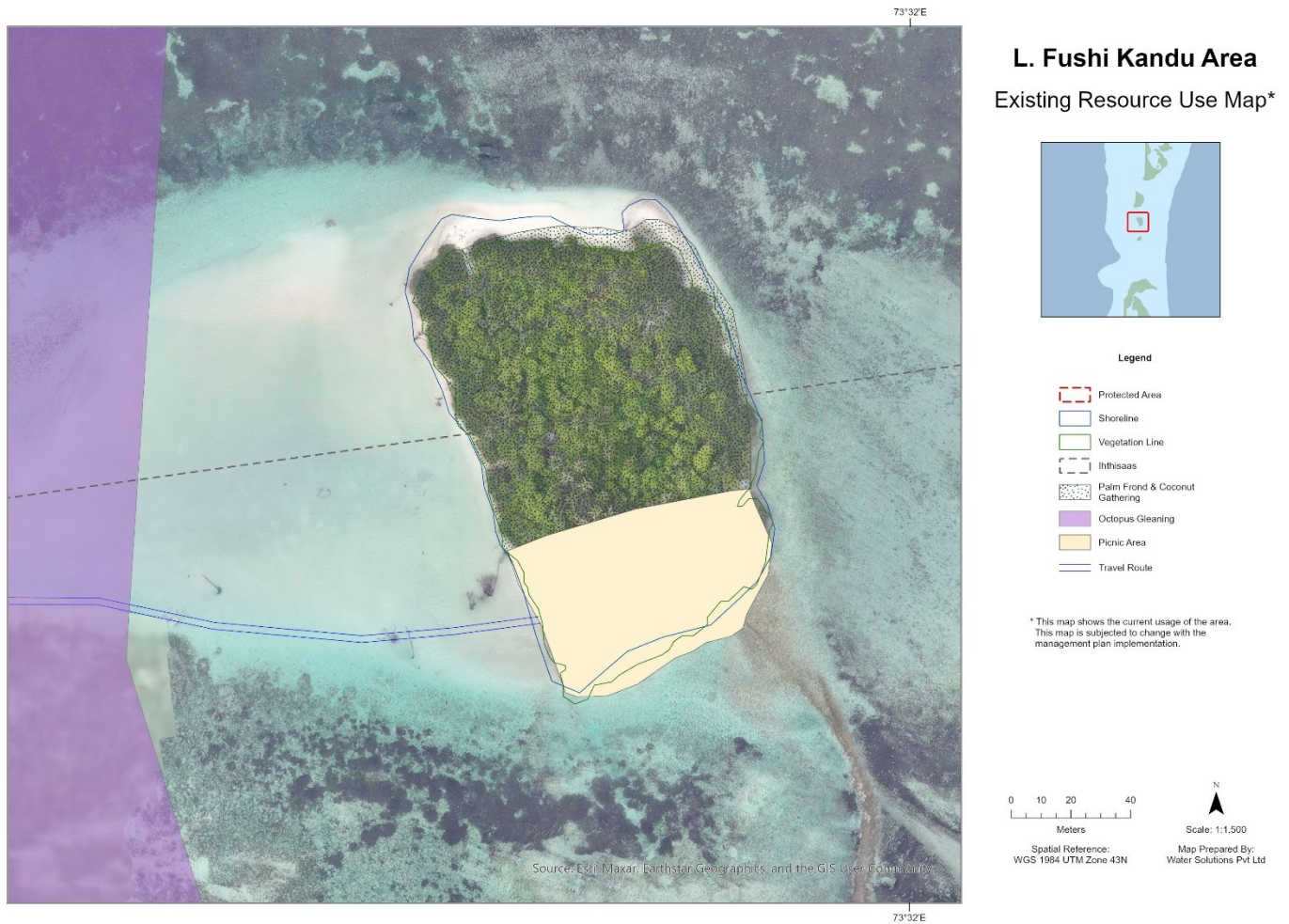


Figure 6: Existing resource use map for L. Fushi

Key values of the sites

The key values of the site are its natural and social values and are as follows:

1. The channel is a known reef fish and grouper spawning area. This includes spawning of *Plectropomus areolatus* and *Plectropomus laevis*. According to stakeholder consultations, there has been sightings possible spawning of Napoleon Wrasses. Roe *et al.* (2022) recorded aggregation behavior at the site, but on less than 4 occasions¹
2. Several globally endangered species under IUCN Red List of Threatened Species are found in the channel. These include reef manta ray (*Mobula alfredi*), green sea turtle (*Chelonia mydas*), napoleon wrasse, and rarely whale shark (*Rhincodon typus*), found in this area.
3. Mangrove area with a water body that has key mangrove species such as *Rhizophora mucronata* (Red Mangrove, *Randoo*) and *Ceriops tagal* (Yellow Mangrove, *karamana*).
4. The Koaru is an important recreational area for locals, as well as visitors.
5. The Koaru area, and L. Fushi is used to gather fallen palm fronds and fallen mature coconut, of which palm fronds are used for thatch weaving.
6. Fushi Kan'du channel is highly used for reef fishery by locals.

¹ Roe, P. *et al.* (2022) 'Status of napoleon wrasse in Laamu Atoll, Maldives, after three decades of protection', *Endangered Species Research*, 49, pp. 135–144. doi:10.3354/esr01210.

Identification of constraints, opportunities and threats

Constraints

The main constraint of this PA is the lack of baseline information about the area. For monitoring the effectiveness of the PA, further information on the numbers, species of plants, fish, and invertebrates is needed. Identification of the crabs and prawns being gleaned in Zone 1, and systematically monitoring its population are also important to understand its status. Further, information on the number of visitors to the area will also be needed to effectively manage the sustainable use of the area. Collection of such data will need to be incorporated as an initial activity of the management plan. Detailed maps of Zone 3, Fushi and Kanuhuraa islands are needed as current maps do not specify the individual island names. Further, physical visits show there are three islands within this zone. According to locals Kanuhuraa has split into two after Indian Ocean Tsunami 2006, and there are different names being used to refer to these islands. There is a confusion in naming the islands, and there is a need to formalize the names.

Currently there is no specific management office, resources or trained staff to manage the PA. The management plan should also include capacity building and training for management staff. Other resources like vehicles and equipment will also be required for the management office. Capacity is also needed to be built for sustainable financing planning.

The LMC is interested in developing luxury tourism in the PA. Although the PA decree limits infrastructure development, there are no detailed guidelines on infrastructure construction in PAs. This makes it challenging to guide the Council on their plans and to ensure that the key values of the PA are not compromised with such a development.

Threats

Table 2 gives a threat prioritization matrix showing the likelihood and extent of threat impact.

Human threats: There is a high amount of littering in the Koaru area, and this is identified as a very high risk. It is mainly from picnic goers and the litter includes plastic water and drink bottles, snack wrappers, empty cans among others. There are also several remnants of outdoor cooking fires, presumably from picnic goers cooking in the area. Education and awareness on individual responsibility of residents and visitors on not littering are needed along with the providing waste bins in the area.

The prospects of ecotourism and attracting visitors bring hopes to the community. Along with such hopes is the idea to build commercial infrastructure in the Koaru area as mentioned above. The northwest end, near the “penguin head” is a large area of mostly undisturbed vegetation, which is where the development is proposed. The proposed plan involves high impact structures, similar to

resort development. This includes beach villas with pools, guesthouses, restaurants and a dive school. It is critical to consider aspects such as sewage and waste generations which will come with such development. Further, it was proposed that the land allocated for this development is to be leased to a third party. Similar plans were also discussed for L. Fushi, to develop water bungalows. There is a concern of possible physical and economic inaccessibility to these islands for the local community if this is carried out. It is recommended that as the PA is categorised as a PA with Sustainable Use, that low impact infrastructure for activities like glamping be considered to boost the local economy.

Agriculture in the Koaru Area can lead to contamination of the waterbody. It should be noted that this is a prohibited activity in the PA. Taking into consideration the limited space on the island for such activities, it may be recommended to allow farming given sustainable practices (e.g. does not use chemical fertilizers or pesticides) are in place. Although all species of birds are protected in the Maldives, there are anecdotal reports that the practice of capturing migratory birds to be kept as pets still occurs in this PA. Overcrowding is also a concern at the Machines surfing point.

Fushi Kan'du channel is noted to have high fishing intensities of artisanal, commercial, and non-commercial reef fishery, using landlines, trolling, pole and line, spearfishing methods. Further, the Council has also mentioned that reef fishing is carried out around Maabaidhoo as well. Similarly, in Maabaidhoo Koaru, collecting of mud crabs and shrimps is a popular practice among locals. The specific species are unknown and this natural resource exploitation is not monitored. According to stakeholder consultations with the local community, elderly residents shared that they have noticed a decline in crab population and size. There also are low fishing intensities of octopus, lobster, sea cucumber, and bill fisheries carried out within the marine areas of all three Zones of the PA. These uses should be monitored, and it is important to study the populations of these species to understand possible trends. Based on monitoring data, conservation measures can be placed in if needed.

Further, ghost nets and fishing lines get entangled in corals and marine species, predominantly from fishing practices outside of Maldives EEZ. Anchoring during fishing and diving is another issue, which will need to be monitored. Marine litter, especially plastics and microplastic pollution is an issue all over Maldives, which can be ingested by marine species and can also be entangled in them.

In addition to Fushi Kan'du being highly used for fishing, it is also very popular among divers. Overcrowding is a concern in this area, and visitor monitoring and regulation needs to be incorporated into management. This is especially important as Fushi Kan'du lies in Zone 2, designated as a PA for Species/Habitat Management area.

Natural threats: El Niño associated coral bleaching events are a major threat to the reefs in Maldives. With more frequent bleaching events, coral reefs are at increased risk of dying which would be devastating for the species which inhabit the reefs. Supporting the recovery and restoration of the coral reefs in this area is detrimental to conserve the key species found at the site. Monitoring the health of reefs in accordance with the National Coral Reef Monitoring Program would be included in the management of this PA. Other threats include invasive species which are found in coral reefs of Maldives, such as crown of thorns.

In terms of other threats, some areas of the beach of Maabaidhoo Koaru area are eroded. The island of Kanuhuraa is also severely eroded, with several uprooted coconut palms visible from the shoreline.

With the Maldives islands being very low lying, the threat of long-term sea-level rise should also be considered in developing and managing the PA. Currently the level of erosion is not monitored. Monitoring of the changes to the shoreline should be included as part of the management.

Table 2: Threat prioritization matrix

Likelihood					Constraints
Rare	Unlikely	Possible	Likely	Almost certain	
		- High impact tourism infrastructure development - Overfishing - Anchoring	- Sea level rise	- Beach erosion - Bleaching events	
		- Overcrowding at Fushi Kan'du	- Chemical and nutrient leaching from farming	- Littering - Marine litter	

	Low
	mediu
	high
	Very

Opportunities

While the PA is protected under the law no 4/93 (Environment Protection and Preservation Act) and under Regulation no 2018/R-78 (Protected Areas Regulation) is applicable, recent changes to the Law no 7/2010 (Decentralization Act), via its 8th amendment law no 24/2019 clause 56 allows Island Councils to use areas within their jurisdiction for economic activities and income earning. Since, the PA is within the jurisdiction of Laamu Maabaidhoo Council (LMC), the management authority (EPA) can delegate the authority to LMC through an agreement between LMC and EPA. This ensures that PA management can be a collaborative process with local stakeholders involved.

The Koaru area (Zone 1) is designated as a PA with sustainable use and given the current popularity of the water body among Maldivians, there is a high opportunity for the PA to be a nature-based tourism attraction for both Maldivians and foreigners. The market assessment survey identified that visitors were willing to visit this area but would like to see the area better taken care of and with more amenities. Development of a visitor information center and tours along with information of the local biodiversity, and traditional use of the area will add to the visitor experience and learning opportunities.

‘The Machine’ is a well-known surfing point and this provides the opportunity to attract visitors to the PA. Surfing is an increasingly popular sports in Maldives with many competitions being held in the Maldives. This provides the opportunity for the PA to be used as a future location for a surfing competition or festival.

Fushi Kan’du is considered a prime dive site and is well known for the beautiful coral formations and megafauna observed in the area. The findings of the market assessment survey show that visitors were willing to pay more to dive at Fushi Kan’du in comparison to other PAs in Laamu Atoll. This opportunity can be utilized to generate revenue for the PA.

Maldives Underwater Initiative (MUI) is a collaboration between the marine biologists at Six Senses Laamu (a resort at the south of Laamu atoll), and three NGOs (Olive Ridley Project, The Manta Trust, and Blue Marine Foundation), conducting research, awareness and community empowerment in Laamu atoll. MUI collects data by participating in dives to the PA from Six Senses Laamu, including recording sightings of megafauna. Blue Marine Foundation (BLUE), in collaboration with national and local partners (including the NGO Maldives Resilient Reefs), are doing work to support effective management of PAs, and has conducted research to understand resource use, coral reef, seagrass, and mangrove health and more. This provides a valuable opportunity to monitor the health of Fushi Kan’du through a collaborative effort. Maldives Resilient Reefs/ Blue Marine Foundation have been undertaking periodic coral reef surveys in this area since 2019. They have also trained numerous community members of Laamu Atoll in SCUBA diving and coral reef monitoring protocols. Their main office is based on Laamu Gan island, and will be an ideal NGO partner to collaborate with on coral reef monitoring activities

Currently local women continue the traditional resource collection from the Koaru area and from L. Fushi, which includes collecting fallen dried palm fronds and mature coconuts. The palm fronds are

used in making thatch and coconuts are used for home consumption. This traditional collection method contributes to clearing the area of fallen palm fronds and coconuts. The making of thatch can be integrated into ecotourism as part of cultural learning.

Governance

The Maabaidhoo Koaru and Fushi Kan'du Area PA is proposed to be managed under a co-management governance regime with roles and responsibilities distributed among the Ministry of Tourism and Environment (MoTE), the Environmental Protection Agency (EPA) and Laamu Maabaidhoo Council (LMC). The Management Authority (EPA) can delegate protected area management to LMC through an agreement between EPA and LMC, where the Regulation no 2018/R-78 ((Protected Areas Regulation) shall follow. The LMC will engage support from NGOs and research groups such as Maldives Resilient Reefs to support research and monitoring of the PA. The LMC will establish a PA Management Unit within the Council to implement the management plan. A proposed governance structure organogram is given in Appendix 1. The functions of the PA management office are shown in Appendix 2. The roles and responsibilities of the parties are as follows:

Roles and responsibilities of the Ministry of Tourism and Environment (MoTE)

- A main regulatory authority for the PA through a tripartite agreement with MoTE, EPA and LMC
- Determine all policies related to the establishment and management of the protected area, including review and amendments to PA related laws and regulations.
- Supporting role for resource mobilization to establish the management unit and any infrastructure and capital costs related to implementing the management plan
- Support the council technically in establishing management unit
- Develop and establish a sustainable financing mechanism for PA management
- Annually review the PA financing mechanism and financial plans for the PA
- Provide necessary PA management trainings for the assigned management authority. A training needs matrix is presented in Appendix 3.
- Monitoring the management effectiveness of the PA

Roles and responsibilities of the Environmental Protection Agency (EPA)

- A main regulatory authority for the PA through a tripartite agreement with MoTE, EPA and LMC
- Develop a Research and Monitoring Plan for the long-term monitoring of the key features and conditions of the Protected Area, under the National PCA Monitoring & Research Plan.
- Enforcement of fines and penalties for non-compliance
- Monitor management of the PA by the assigned management authority and periodically review the management plan.
- Provide the management authority with a mechanism to report non-compliance or violations of the PA rules.
- Investigate any reported violations of PA rules and take necessary action to enforce penalties.

- Provide and train the management authority with a mechanism to monitor the biodiversity and physical health of the PA
- Provide a mechanism for approval to conduct research in the PA and issue research approvals/permits. Long-term partnerships for environmental monitoring and research can be developed with NGOs, universities and other capable research groups through the oneGov portal.
- Review annual monitoring reports submitted by the management authority.
- Recommend changes to PA rules and management based on review of monitoring reports.

Roles and responsibilities of Laamu Maabaidhoo Council

- A main regulatory authority for the PA through a tripartite agreement with MoTE, EPA and LMC
- Implement the management plan for the PA through a management unit
- Establish the management unit, PA infrastructure and procure necessary equipment for managing the PA
- Administration of the management plan and office
- Recruit required human resources to manage the PA and ensure staff undergo necessary trainings according to the training requirements provided in Appendix 3.
- Oversee and support the functioning of the PA Management Office
- Establish and maintain a separate financial account for PA management.
- Oversee preparation of the annual program and budget for management of the PA according to guidelines provided in Appendix 4.
- Submit PA management monitoring reports annually to the EPA according to guidelines provided in Appendix 5.
- Collaborate with NGOs and research groups and sign MoUs to support research and ecological monitoring of the PA.

Roles and responsibilities of the PA Management Unit

- The PA Management Office will be responsible for implementing L. Maabaidhoo Koaru and Fushi Kan'du Area PA management plan.
- The main functions will include i) maintain the PA and monitor visitor activities, ii) education, awareness and outreach and iii) monitoring of the PA health (Appendix 2).
- In addition to overseeing the overall operations of the PA management office the administrative role will include programmatic planning, budgeting and monitoring functions. This includes:
 - Developing an annual programme and budget for the management office
 - Preparing annual PA management reports to be submitted to the EPA according to guidelines in Appendix 5
 - Preparing monthly data on the PA management according to guidelines in Appendix 6

- Provide secretariat support to the PA Steering Committee and organize the committee meetings
- Maintain infrastructure, equipment and visitor services
- Maintain the PA area and dispose of any waste generated in the area, minimum once a month, according to the Waste Management Regulation (R58/2013).
- Maintain visitor booking and ticketing systems
- Issue access permits, photography and videography permits and collect related fees
- Maintain and monitor a log of visitors and visitor activities within the PA and report these in the PA management monitoring report.
- Conduct and analyze visitor surveys to inform management planning. The visitor survey questionnaire can be developed using the guidelines provided in Appendix 7.
- Monitor the PA for non-compliance or violations of PA rules and report incidences to the EPA. Guidelines for attending to non-compliance incidences are given in Appendix 8.
- Conduct baseline and periodic monitoring of the PA biodiversity and physical parameters according to the Environmental Monitoring Plan provided in Appendix 9.
- Generate information on the physical assessments of the PA and any changes
- Disseminate information of the health of the PA
- Develop data collection and research needs including citizen science-based data collection to support PA management
- Report any threats or negative impacts to the terrestrial and marine environment of the PA to the EPA.
- Prepare and implement an annual awareness, education and outreach program
- Develop and implement programs to engage with local community to create awareness of the PA and for effective PA management
- Disseminate information on the PA establishment purpose, benefits, and use guidelines to users and local community
- Maintain the L. Maabaidhoo and Fushi Kan'du page in the [PA website](#) and other social media platforms
- Promote the PA to attract visitors

The PA Management Steering Committee

The Maabaidhoo Koaru and Fushi Kan'du Area Management Steering Committee (hereafter referred to as Steering Committee) will advise the PA Management Office on implementing the PA management plan on an island-level.

1. The Steering Committee should comprise of members representing the following parties:
 - Laamu Maabaidhoo Council
 - Representation from a national research NGO
 - Representation from a Laamu Maabaidhoo Community NGO
 - Representation from a local guesthouse operator
 - Representation from traditional resource users
 - Representation from women's groups

2. The roles and responsibilities of the Steering Committee are:
 - Review annual programs and budgets of the PA management Office
 - Providing advice on the implementation of the PA management plan
 - Provide advice on any issues relating to management of the PA on a case-by-case basis
 - Provide advice on services and fee structures relating to use of the PA
 - Review and resolve any complaints, disputes or grievances regarding governance or management of the PA
 - Advise regarding management plan amendments
3. NGO representative, private sector, resource user can be selected from Call for Application.
4. The Steering Committee members and their contact numbers shall be made publicly available on the PA webpage
5. The Steering Committee will be chaired by LMC and should meet to resolve any complaints or grievances on a case-by-case basis.
6. The meetings of the Steering Committee shall be organized by the GIC with secretariat services provided by the PA management Office.
7. The Steering Committee will meet a minimum of twice a year.

Key Regulations, Policies, Codes of Conduct and Guidance

Regulation no 2017/R-78 (Protected Areas Regulation) set the guideline for this management plan. Clause 9 of the said Regulation permits management authority to delegate the management of PA to a state institution or other entity by mutual agreement between EPA and the delegating authority

The Maabaidhoo Koaru and Fushi Kan'du Area PA is designated as a Category 7 PA with Sustainable Use. Hence, the main activities allowed in the area are those relating to recreational, nature-based tourism and traditional resource gathering. Appendix 10 provides a list of activities that are prohibited and allowed within the PA. Guidelines for access and use of the PA are given below:

1.2.

1. The PA will be open for use by visitors from 6am to 6pm daily.
2. The following recreational and other services will be available for visitors within the PA
 - Visitor/information center
 - Vendor stands
 - Souvenirs for purchase
 - Guided tours
 - Bicycles for hire
 - Kayaks for hire
 - Picnic area
 - Barbeque equipment hire
 - Open outdoor shower
 - Public toilets
 - Waste disposal points
3. All visitors will need to purchase a ticket from the visitor centre to access the PA. Appendix 11 provides fee guidelines for entry and other services available for visitors.

4. PA opening hours, available services and facilities and their fees and prices of items sold within the PA shall be made available to the public.
5. Any items sold in the vendor stalls or in exhibits in the PA should give emphasis to locally made and environmentally friendly products and follow the guidelines provided in Appendix 12.
6. Use of motorized vehicles will not be permitted inside the PA. Bicycles can be hired by visitors as per the fees provided in Appendix 11.
7. Open fires are not allowed inside the PA. Visitors can bring their own food for picnics, purchase from the vendor stall or hire barbeque equipment. Fees for equipment hire are given in Appendix 11.
8. Littering is prohibited inside the PA. All visitors should dispose their trash in bins provided near the visitor center.
9. Photography and videography for commercial purposes can be carried out under a special permit. Appendix 13 gives guidelines for commercial photography and videography inside the PA.
10. Surfing is allowed in the marine area.
11. Traditional resource-use to collect fallen palm fronds, mature coconuts and dry wood is allowed. A guideline for traditional resource use is given in Appendix 14.
12. Removal of soil for home gardening or agricultural purposes is prohibited.
13. A permit is required for conducting research in the PA. Appendix 15 provides guidelines for conducting research inside the PA.
14. The following measures are taken within the PA for visitor safety
 - A lifeguard post with a life ring and first aid kits and a megaphone near the water body
 - Surveillance cameras
 - Fire extinguishers

Zone 2 & 3:

1. The zones can be accessed by visitors from 6am to 6pm daily via special permits from the PA Management Unit.
2. Open fires are not allowed inside the PA. Visitors can bring their own food for picnics, purchase from the vendor stall or hire barbeque equipment. Fees for equipment hire are given in Appendix 11.
3. Littering is prohibited inside the PA. All visitors should dispose their trash in bins provided
4. Boats shall not anchor in the area.
5. Photography and videography for commercial purposes can be carried out under a special permit. Appendix 13 gives guidelines for commercial photography and videography inside the PA.
6. Traditional resource use to collect fallen palm fronds, mature coconuts and dry wood is allowed. A guideline for traditional resource use is given in Appendix 14.
7. Removal of soil for home gardening or agricultural purposes is prohibited.
8. A permit is required for conducting research in the PA. Appendix 15 provides guidelines for conducting research inside the PA.
9. The following measures are taken within the PA for visitor safety in the picnic areas

- A lifeguard post with a life ring and first aid kits and a megaphone are placed near the picnic area
- Surveillance cameras
- Fire extinguishers

Boundary and zonation

This section describes the zoning of different activities that are allowed within the PA. The zones are developed based on existing resource uses and permissible activities in the PA (Appendix 10).

Zone 1

The proposed resource use zones for Zone 1, Maabaidhoo Koaru area, is based on the existing resource uses as seen in Error! Reference source not found.. There are 6 main use types identified and are shown in Figures 9-14. The proposed resource use zones with the coordinates and descriptions of activities that are permitted are given below in Table 3.

Table 3. Description of proposed resource use zones for Zone 1, Maabaidhoo Koaru Area

Use zone	Allowed uses
Traditional use zone - Terrestrial	• Collection of dried palm fronts, mature coconuts, dry wood and sea almonds for traditional use. This can be monitored by rangers and through security cameras. • Collection of these resources will be weekly at specific days and times determined by the LMC • Burying of coconut husks and palm fronds in the Koaru
Traditional use zone - Marine	• Gleaning of crabs and prawns from the Koaru • Burying coconut husks and palm fronds in the water body
Picnic zone	• Recreational use by visitors for sightseeing, bathing in the Koaru and picnicking. • Visitors can enter the site from 6am to 6pm daily. • Lighting of fires for picnic cooking or barbeques will not be allowed.
Surf zone	• Surfers can use the Machines surf point area within the PA at all times

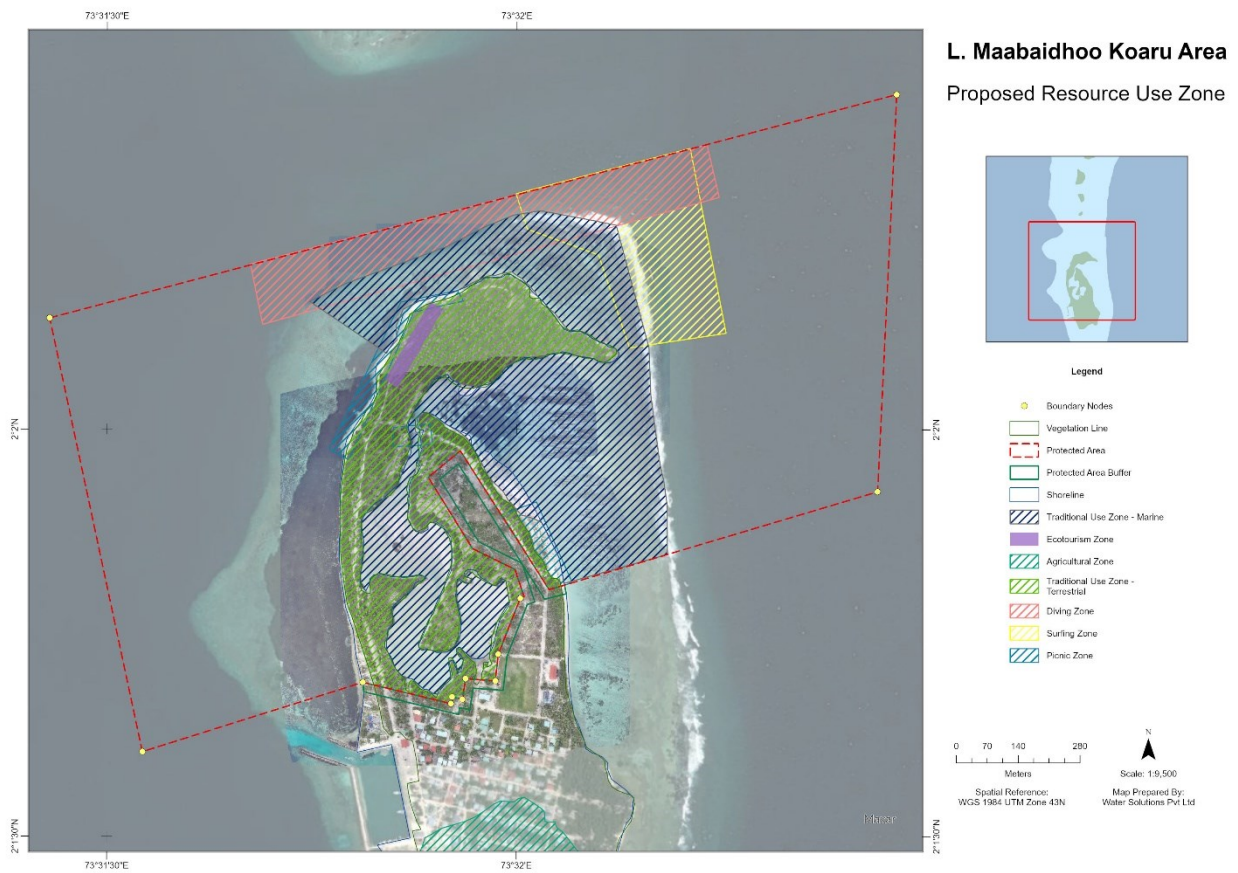


Figure 7. Proposed resource use zones for Maabaidhoo Koaru Area (Zone 1)



Figure 8. Proposed resource use: terrestrial traditional uses for Zone 1

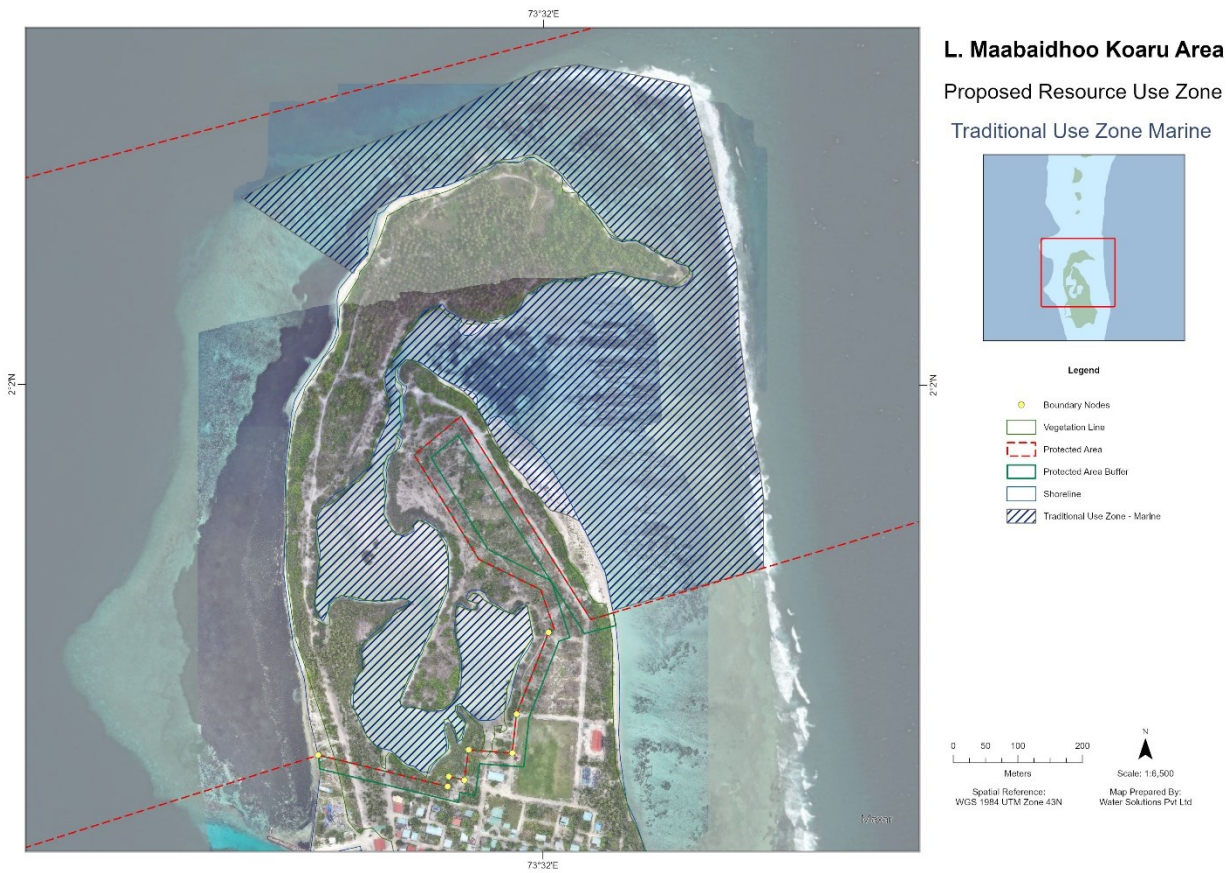


Figure 9. Proposed resource use: marine traditional uses for Zone 1

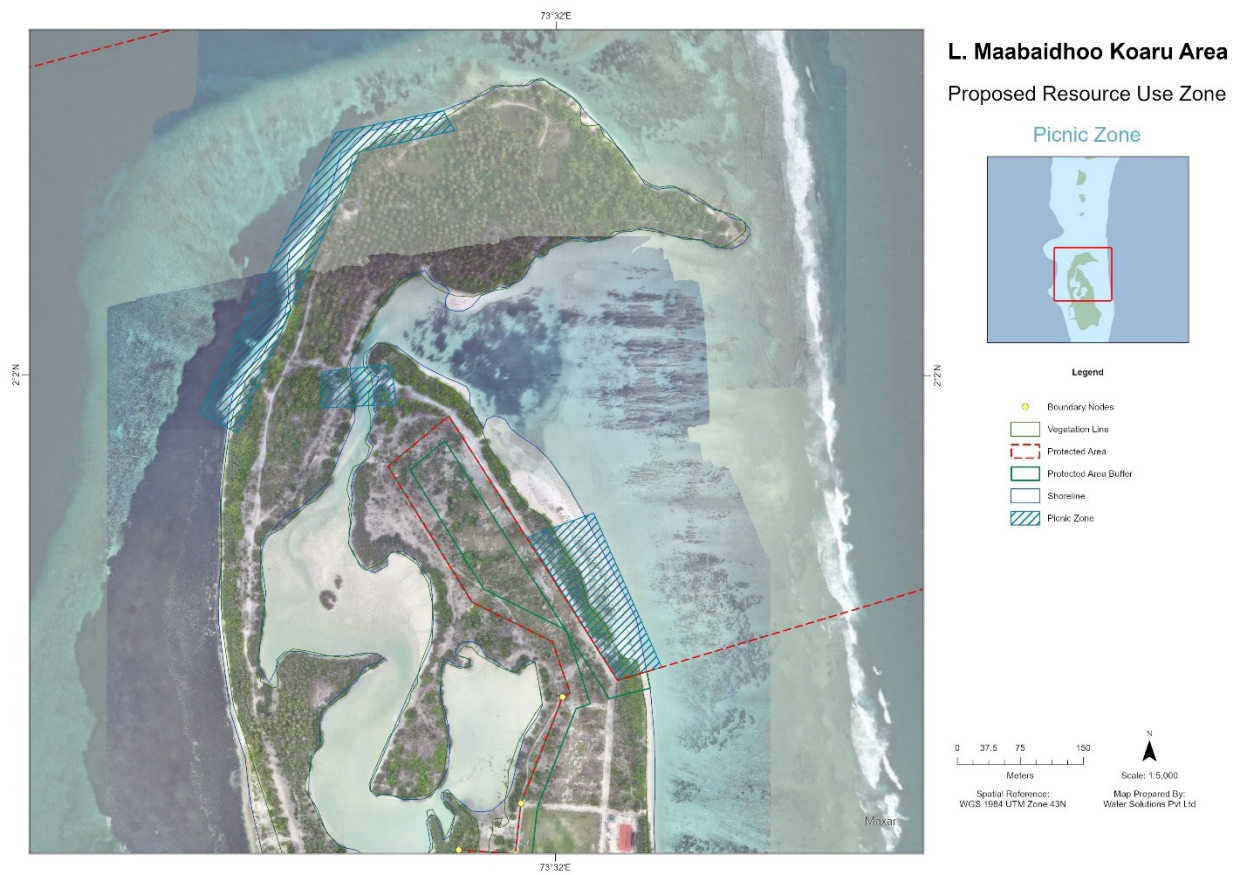


Figure 10. Proposed resource use: picnic area for Zone 1



Figure 11. Proposed resource use: surfing for Zone 1

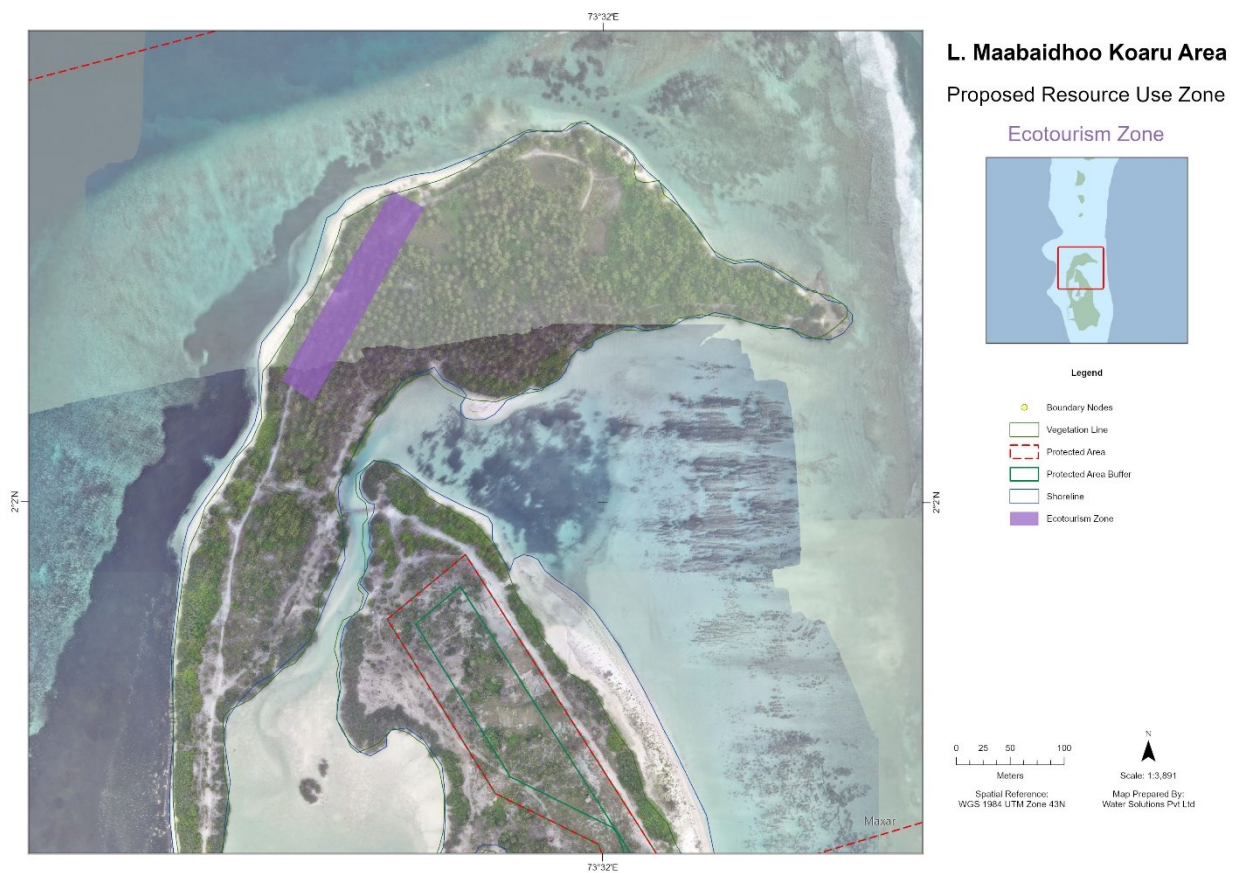


Figure 12. Proposed resource use: ecotourism area for Zone 1

Zone 2 and Zone 3

The proposed resource use zones for Zones 2 and 3 are based on the existing resource uses as seen in Figures 5 and 6. There are 3 main use types identified and are shown in Figures 13-16. The proposed resource use zones with the coordinates and descriptions of activities that are permitted are given below in Table 3.

Table 4. Description of proposed resource use zones for Zone 2 and 3, Fushi Kan'du, Fushi and Kanuhura islands

Use zone	Allowed uses
Diving zone	• Divers can use the area for diving with permits • Access to the area will be from 6am to 6pm • Boats will not be allowed to anchor in the area
Traditional use zone - Marine	• Gleaning of lobsters and octopus from the lagoon
Picnic zone	• Recreational use by visitors for picnicking. • Visitors can enter the site from 6am to 6pm daily. • Entry will be through designated route

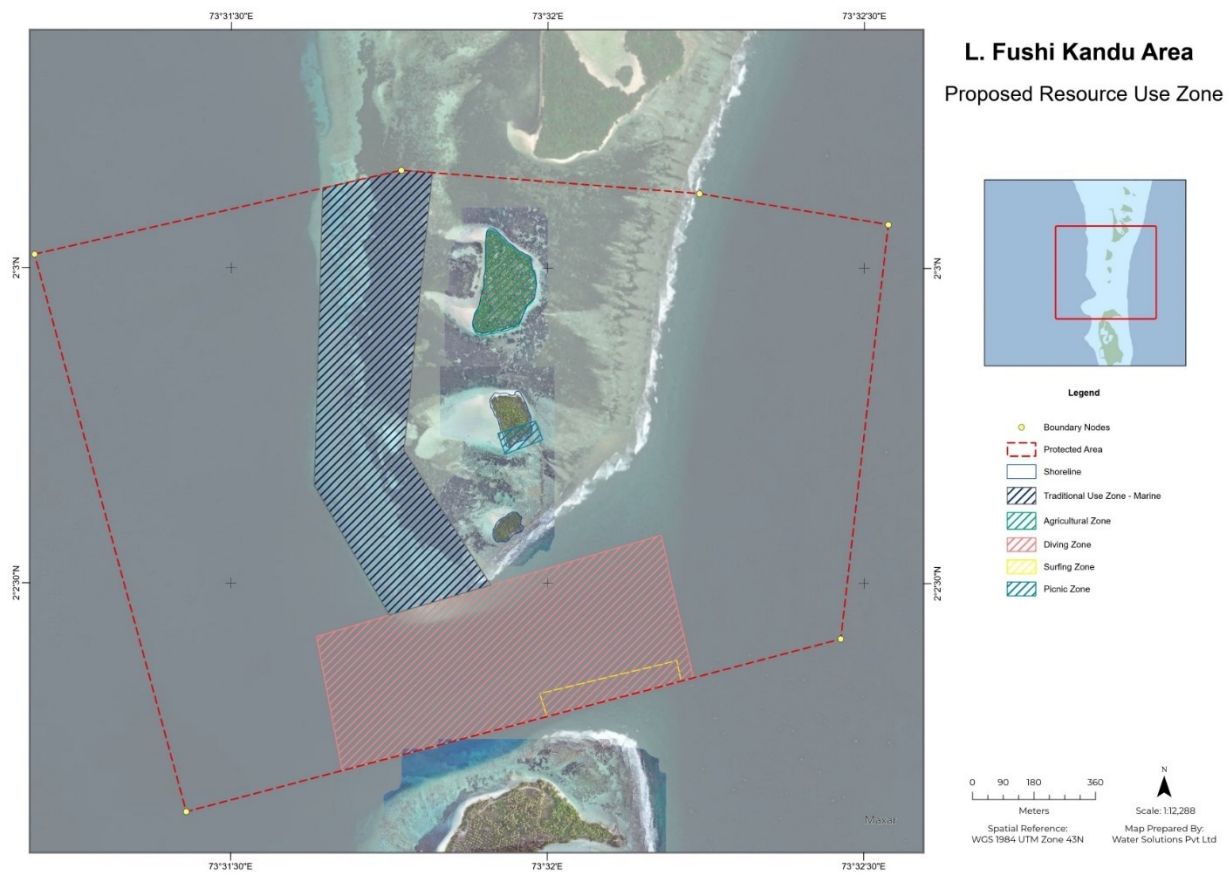


Figure 13. Proposed resource use zones for Zone 2 and 3

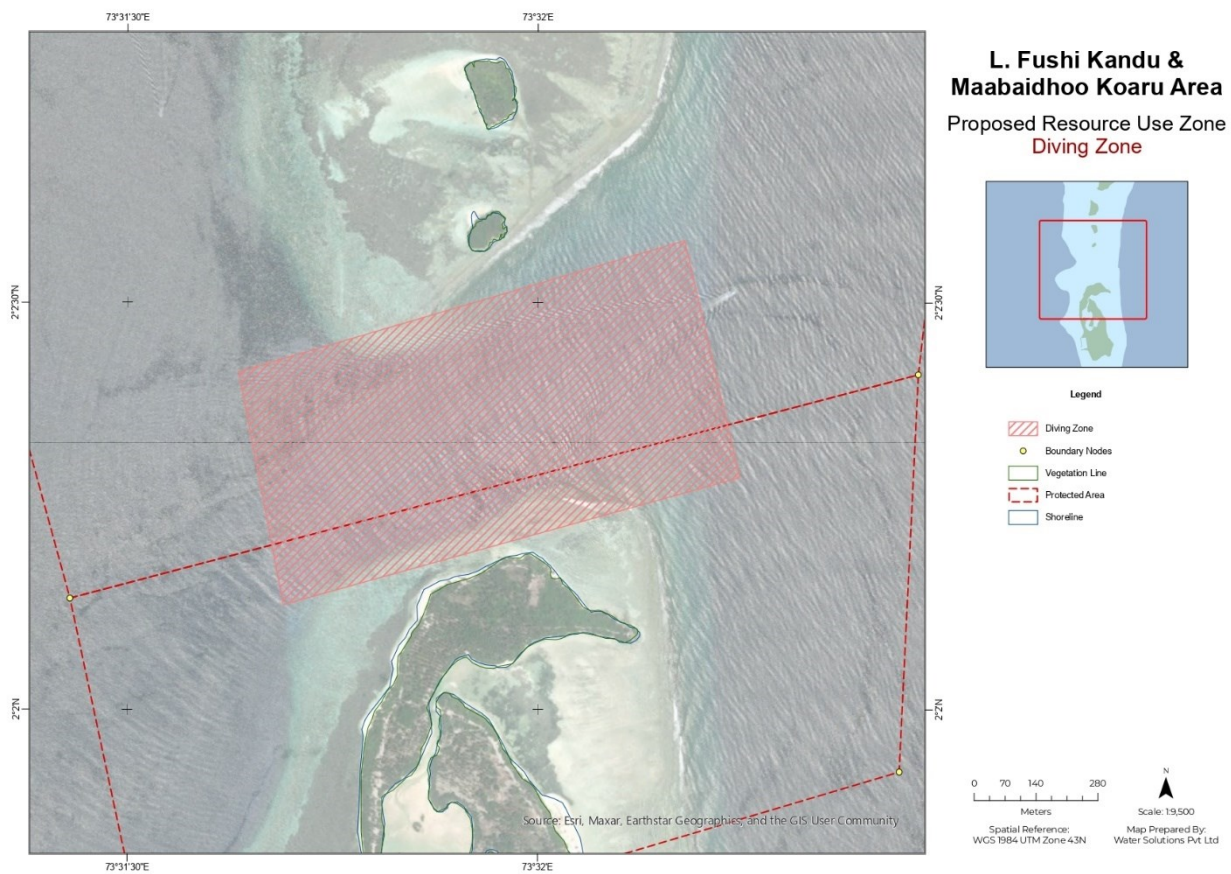


Figure 14. Proposed resource use: diving area for Zone 2

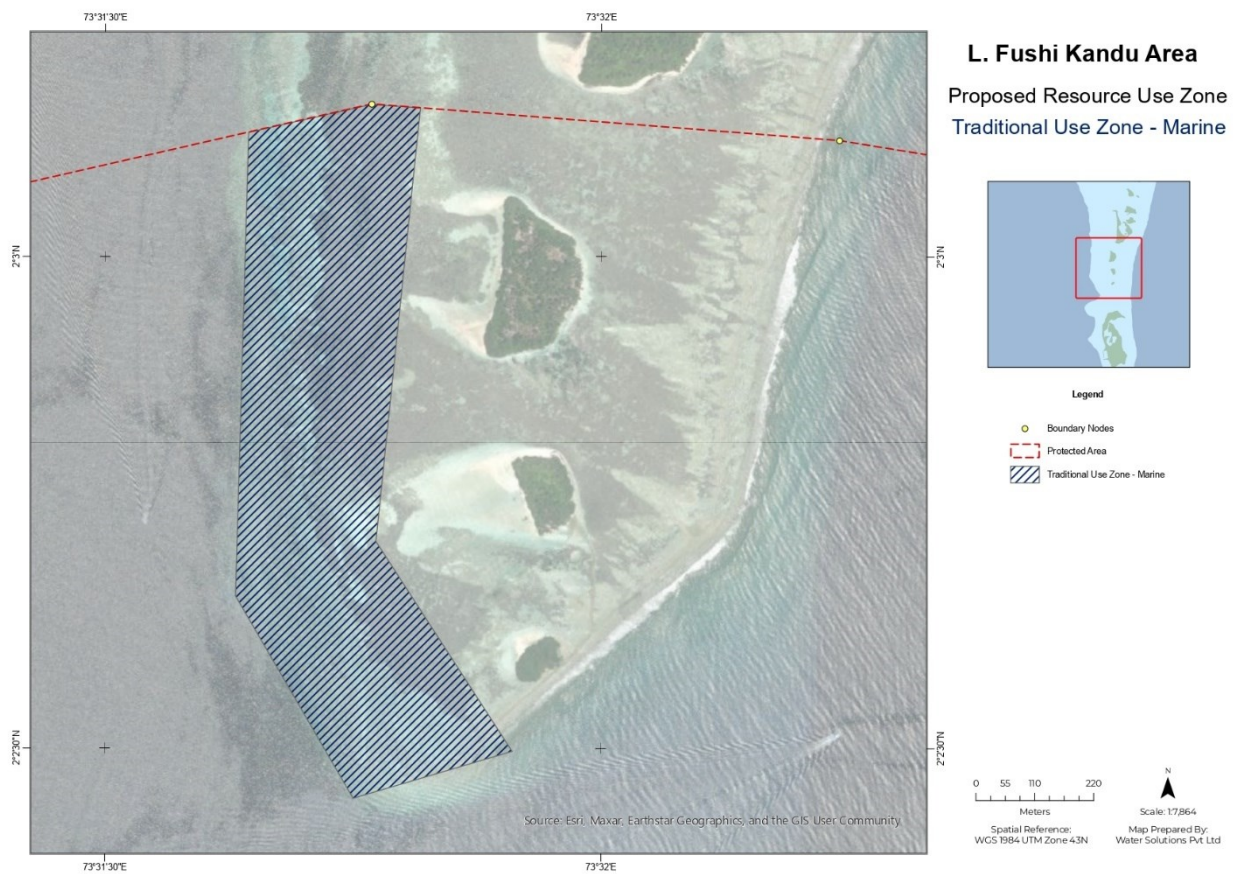


Figure 15. Proposed resource use: traditional use in marine area for Zone 3

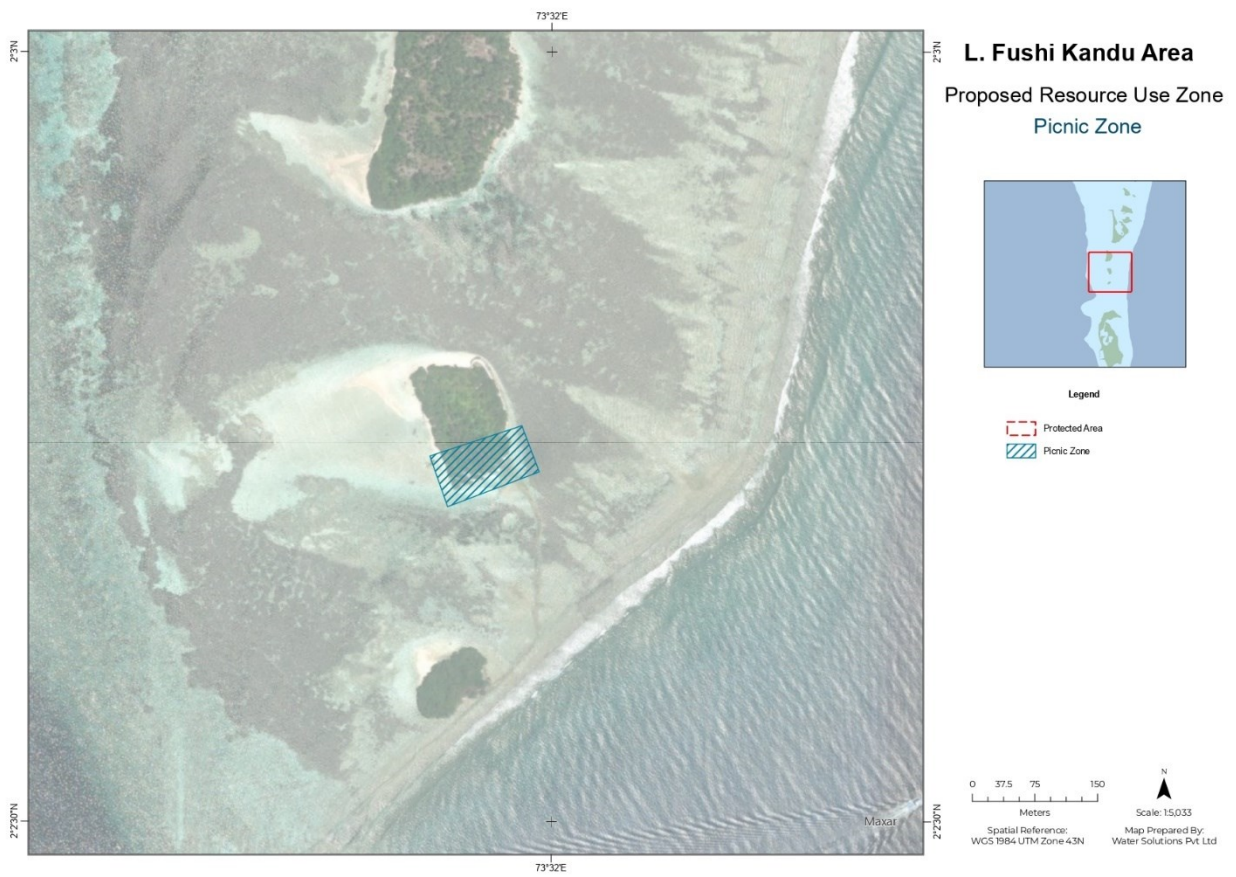


Figure 16. Proposed resource use: picnic area for Zone 3

Management strategies/Action plans

Table 5 provides a list of activities that will be implemented under the management plan to achieve the objectives outlines in Section 4.

Objective 1: Governance

The activities under the project focus on first establishing a PA management office at site. This includes approval of the management plan and assigning the management authority to LMC as well as establishing required human resources, equipment, and infrastructure for management. The first year will also be used to develop management related protocols and standard operating procedures (SOPs). Further, general trainings and ranger trainings will also be included so that effective management can be established. Once the management structure is established ongoing visitor management and monitoring activities will be continued. Monitoring of non-compliance will be an important element as stakeholder consultations and surveys conducted identified the need to monitor for destructive practices such as net fishing, spearing and littering among others.

Objective 2: Ecological

There is a need for detailed baseline data on the terrestrial and marine flora, fauna and health of the PA. Hence initial activities focus on understanding current levels of biodiversity of the area. Periodic monitoring will be conducted to monitor current levels so that it can be maintained or improved. Gleaning for octopus, shrimps and crabs is traditionally practiced in the PA. Therefore, it is important to especially monitor the abundance and size of these species to guide management. Activities for this include developing detailed monitoring protocols and trainings for staff.

Objective 3: Social, Cultural and Economic

The Maabaidhoo Koaru is a socially significant area for the local community. The area is used for traditional purposes for resource collection to generate income. Further, the LMC recognizes the opportunity to promote the area for ecotourism and maximize the economic benefits for the local community. The LMC is interested in developing ecotourism in this area, and establishing a sustainable ecotourism plan is included. Consequently, it is important for visitors to understand the ecological significance of the PA and creating outreach. Activities under this objective include creating knowledge products and promoting the PA to increase visitors.

Table 5. Management Actions for Maabaidhoo Koaru and Fushi Kan'du Area

Objective	Actions	Indicators
Objective 1: By the end of 2025, an effective management plan	Approve a management plan and sustainable financing plan for the PA	• Management plan approval by EPA / MoTE • Sustainable financing plan approval by EPA/ MoTE

will be implemented with a functioning management unit on-site.	Delegate management responsibility to LMC	• MoU between LMC and EPA
	Establish PA management Steering Committee	• Member appointment documents • Minutes of committee meetings
	Develop infrastructure inside PA	• Infrastructure design • Contract with developer • Completion certificates
	Establish management office and hire staff	• Office building • Staff contracts
	Develop Standard Operating Procedures (SOP) for PA	• Approved SOPs
	Conduct general capacity building trainings for staff	• Training completion certificates
	Conduct ranger training	• Training completion certificates
	Develop PA website and social media platforms	• Website launched • Facebook, Instagram and Twitter accounts activated
	Implement visitor activities management and monitoring	• Issued permits • Revenue collected • Non-compliance and illegal activity reports • Monthly monitoring reports
	Develop Limits of Acceptable Change (LAC) for the PA	• Approved management effectiveness monitoring protocols
	Develop management effectiveness monitoring protocols (METT-4)	• Approved management effectiveness monitoring protocols
	Train staff on management effectiveness monitoring	• Training completion certificates
	Conduct periodic management effectiveness monitoring	• Monitoring reports
	Review management plan	• Approved revised management plan
	Develop monitoring parameters and protocols	• PA Monitoring Manual

Objective 2: By the end of 2028, the current levels of flora and fauna within the PA are maintained or improved.	Procure equipment for ecological monitoring	- Equipment inventory - Procurement invoices
	Conduct a training on ecological monitoring for relevant staff	Training completion certificates
	Conduct a baseline ecological assessment of the PA	- Collected data - Baseline assessment report
	Continue periodic ecological monitoring of the PA	- Collected data - Baseline assessment report
	Disseminate information on health of the PA	- Published quarterly reports - Presentations to public and stakeholders
Objective 3: By the end of 2028, appreciation of the cultural, social and economic value of the PA by local community and visitors are increased.	Measure baseline level of community understanding of PA values	- KAP survey data - KAP baseline assessment report
	Continue periodic KAP assessment	- KAP survey data - KAP assessment report
	Develop an ecotourism plan for the Koaru area to promote nature tourism	Approved ecotourism plan
	Develop a community engagement and awareness strategy	- Number of knowledge products prepared - Number of knowledge sharing events - Number of people receiving information - Visitor survey feedback and reports
	Prepare and disseminate on the cultural and historical aspects of the PA and Maabaidhoo island	
	Prepare and disseminate information on social, cultural, ecological and economic benefits of PAs to local community and visitors	
	Promote the PA to generate interest to visit the PA	- Number of promotional materials - Social media statistics - Visitor numbers

Compliance and enforcement

- Activities prohibited and allowed in the PA are given in Appendix 10.
- The PA Management Unit should have PA rules available on site and also include this in visitor briefings and tour.
- The PA Management Unit should also have this information available on the PA website and conduct awareness programs to inform the public. Local stakeholders such as schools and NGOs can be engaged in awareness programs.
- Monitoring of visitor activities will be carried out by rangers in the PA Management Unit. Rangers will patrol the area and in addition use video surveillance.
- Rangers can consider the engagement of local stakeholders such as civil society organisations to assist in compliance monitoring and enforcement activities.
- Individuals or parties in violation of the PA rules, regulations or permit conditions will be penalized under the Environment Protection and Preservation Act (4/93) and according to penalties in Appendix 16.
- The PA Management Unit should record and report non-compliance incidences according to guidelines provided in Appendix 8.
- Littering is seen as a visible threat that will need to be monitored and enforced for compliance. It is initially proposed to have rangers patrol and advise visitors to encourage voluntary compliance and take waste to designated bins, however remote monitoring and surveillance is encouraged. Penalties can be enforced gradually as given in Appendix 16.

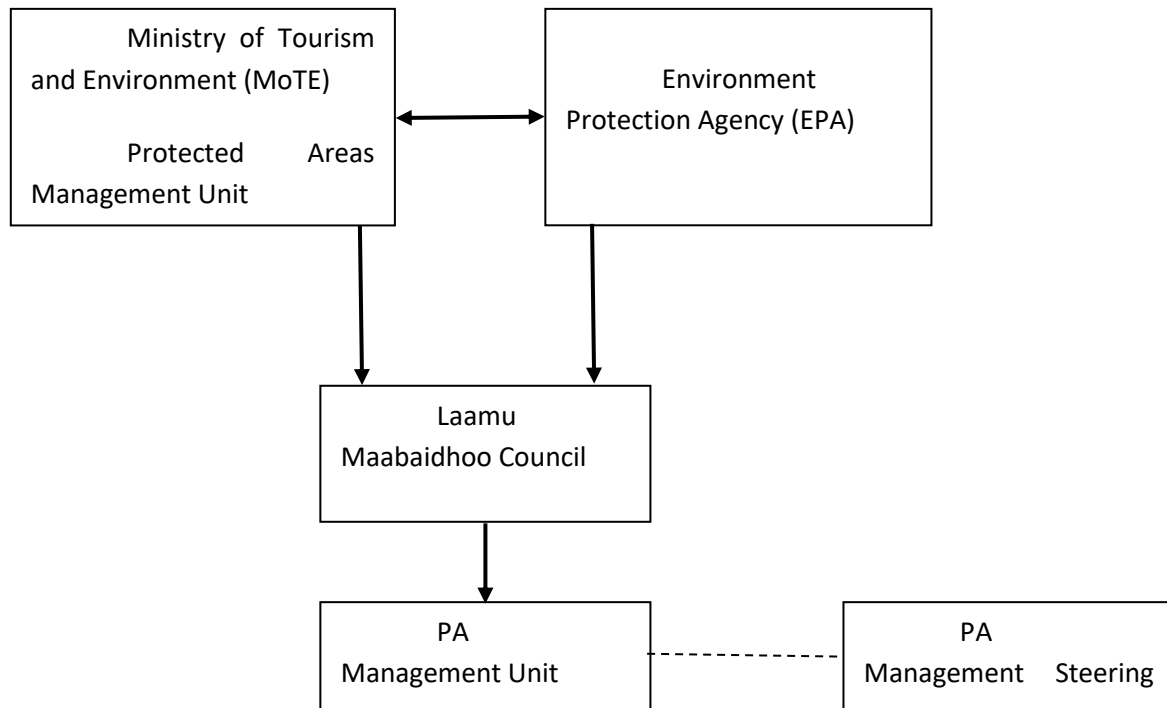
Monitoring and evaluation

A work plan with a timeline for implementing the management plan is given in Appendix 16. A periodic review of the implementation plan shall be undertaken, every 2 years, to monitor implementation of the management plan and revise the management plan based on findings of the PA monitoring. One of the key constraints in monitoring the performance of PA management is the lack of baseline ecological as well as visitor data. Therefore, initial activities under the management objectives will focus on conducting baseline assessments followed by periodic monitoring.

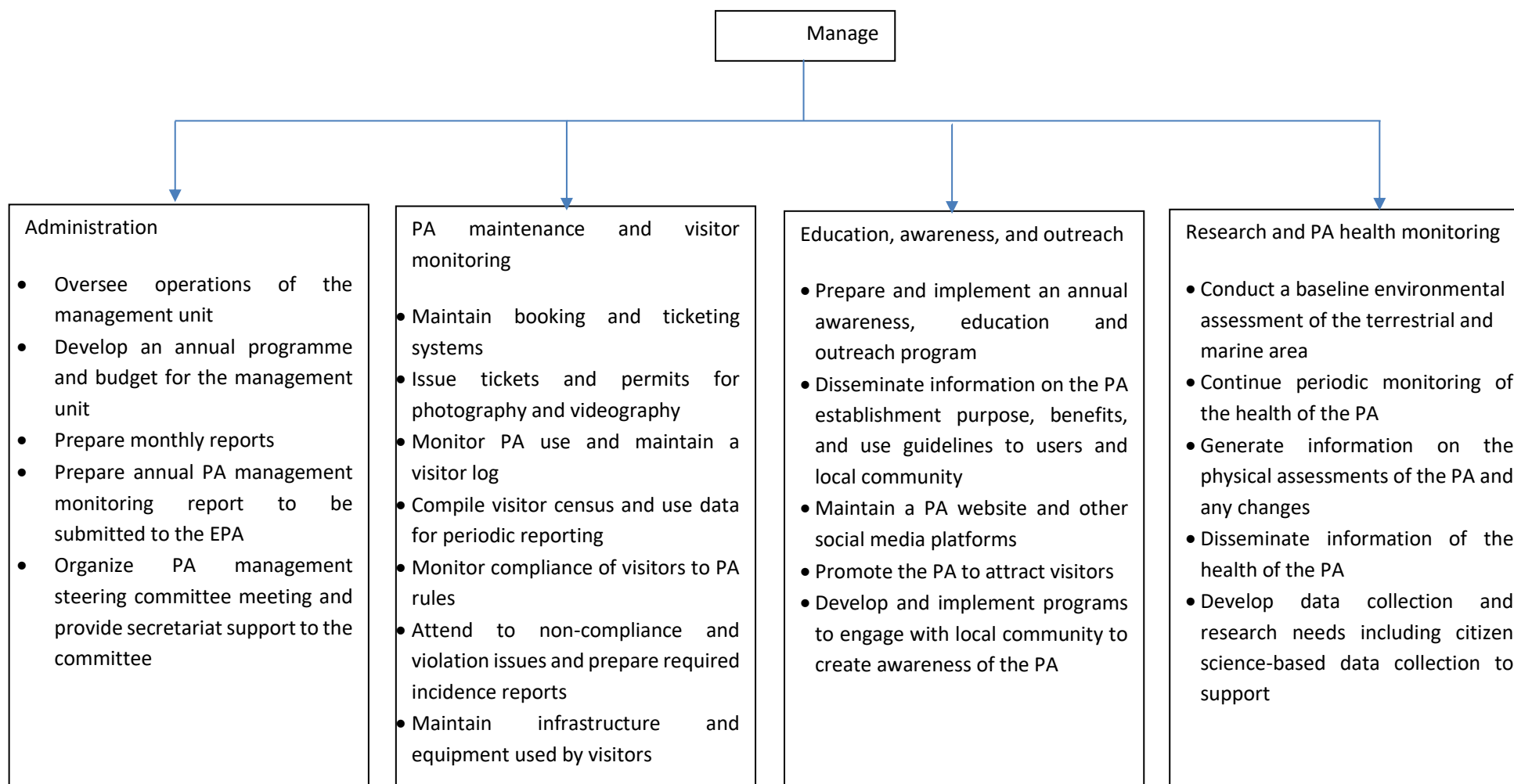
- A baseline ecological assessment with continued periodic monitoring will be used to monitor and evaluate if current ecological conditions are maintained or improved
 - Guidelines on ecological monitoring including parameters to be monitored, methods and frequency for continued monitoring are given in Appendix 9.
 - The environmental officer and rangers will be undertaking ecological monitoring. This will be conducted as per the Monitoring and Research plan developed by the EPA, and under the guidance from EPA.
 - The environment officer will be responsible for analyzing collected data and preparing reports to be used for management review and planning.
 - The communication officer will share information on ecological health of the area with the public and stakeholders.
- Information on visitors, use and awareness and education engagements are monitored and reported monthly to guide improving management of the PA as well as increase appreciation of the value of the PA by visitors and other stakeholders.
 - Data on visitor numbers and behaviors including non-compliance as well as visitor engagement and education, awareness and outreach are collected monthly according to the template given in Appendix 6.
 - Data is collected through permits and fees paid, patrol by rangers, video surveillance, visitor surveys and reports or complaints made to the PA Management Unit.
 - The environment officer will be responsible for analyzing collected data and preparing reports to be used for management review and planning.
 - The communication officer will share information with the public and stakeholders.
- PA management effectiveness will be conducted by MoTE. The PA Management Effectiveness Tracking Tool version 4 (METT-4) methodology is recommended to be used.
- Periodic review of the management plan should be undertaken.
 - An annual report of the PA management is prepared by the PA Management Unit and submitted to the EPA
 - METT-4 assessments should be conducted every 5 years
 - Review of the management plan should be done minimum every 2 years

Appendices

Appendix 1: Laamu Maabaidhoo Koaru and Fushi Kan'du Area Governance Structure



Appendix 2: Functions and structure of the PA Management Unit



Staff	No.
Environment officer	1
Ranger	2

Appendix 3: Training Requirements for the PA Management Unit

Course/Topics	Staff						Training delivery method
	Council	Administrative staff	Environment Officers	Communication Officers	Rangers	Steering Committee	
PA Management							short course
Role of PAs in environmental conservation	x	x	x	x	x	x	
Legal frameworks and institutional setting for PA governance and management in the Maldives,	x	x	x	x	x	x	
General prescriptions rules for PAs in the Maldives,	x	x	x	x	x	x	
Adaptive management	x	x	x	x	x	x	
Limits of Acceptable Change	x	x	x	x	x	x	on the job training
PA financing and accounting							
Management of PA account	x	x					
Revenue generation and sustainable financing planning	x	x					
Education, awareness and outreach							

Participatory and rights-based approaches for PA management	x			x			on the job training
Community engagement	x			x	x		
Ecological monitoring and research							short training
Ecological surveying and data collection			x		x		
Data Analysis and Scientific Reporting			x				
PA management effectiveness monitoring							on the job training
Standards (IUCN Green List) and Monitoring tools for PA effectiveness (e.g. METT)			x	x	x		
Evaluation and Reporting		x	x				
Ranger training							short course
PA codes of conduct and rules					x		
Visitor engagement and management		x	x	x	x		
Non-compliance monitoring protocols					x		
Conflict engagement					x		
Drone surveillance and operation					x		
First aid					x		

Fire safety training					x	
Swimming skills					x	
Personal survival techniques					x	
Open water dive certification or above					x	
Niyami training					x	

Appendix 4: Annual programme and work plan development guideline

- The annual programme outlines the activities to be carried out by the PA management unit for the upcoming year and should include the resources and budget needed to implement the activities.
- The Annual program should include the following
 - The management objectives to be achieved in the year.
 - A plan of activities including operational and ongoing activities as well as new activities and programs to improve the PA management. The activities should focus on the following areas and must include a timeline.
 - Administration and infrastructure management
 - Visitor and Public Use monitoring
 - Research and monitoring
 - Education, awareness and community engagement
 - Resource needs including human resources, equipment, and trainings
 - A budget estimate for implementing the program
- The template below can be used for each planned activity to identify resource and budget needs.

Name of PA:

Activity
description:

Personnel needs (list all personnel needed, including current and additional staff)

Job Title	Quantity	Number of working months	Cost per month (MVR)	Total Cost (MVR)

Supplies, Equipment & vehicles (items that need to be purchased or
rented)

Item	Quantity	Unit Cost (MVR)	Total cost (MVR)

Contractual Services (List all work to be done by contract with non-PA
staff)

Services needed	Estimated Cost (MVR)

Training
needs

Course Title	Cost of course (MVR)	Travel & Other expenses (MVR)	Total Cost (MVR)

Summary of Costs (MVR):

Item	Total Cost (MVR)
Personnel	
Supplies and Material	
Contractual Services	
Training	
Total cost	

Appendix 5: Annual reporting template

The annual report should include the following areas

1. Introduction
 - Provide a description of the PA and an overview of the PA management objective.
 - Include an outline of the report and its objective
2. Administration and Finance
 - Updates on staffing, and trainings
 - maintenance and waste management with available data
 - Budgeting including income and expenditures
3. Activities and Programmes
 - Visitor activities including numbers and type of activities done in the PA
 - Information and feedback collected through visitor surveys
4. Compliance Monitoring
 - Incidences of non-compliance and illegal activities
 - Action taken - Fines and penalties
 - recommendations
5. Education, Awareness and Outreach
 - Webpage and social media engagements and stats
 - Activities undertaken at PA for awareness raising and education
 - Activities undertaken in collaboration with community
 - Any publications or reports produced during the reporting period
 - Other outreach activities
6. Research & Monitoring
 - Report on overall physical health of the PA with any data collected during the reporting period.
 - Include trends of health of the area based on previously collected data
 - Any incidences of risks or unusual impacts on the health of the area
 - Any ongoing research during the reporting period
7. Monitoring and Evaluation
 - Report on any monitoring effectiveness assessments undertaken during reporting period (e.g. METT)
8. Conclusions & Recommendations
 - A summary of the overall report
 - Overview of management effectiveness
 - Recommendations to improve management

Appendix 6: Monthly data reporting template

Administration

Number of Staff at PA Management unit:	
Number of Trainings conducted: (List details of each training below)	

Name of training	# participants	Duration	Training conducted by	Training mode

Budget

Total revenue (MVR): (List all types of revenue generation in table below)	
---	--

Total Expenditure (MVR): (List all types of revenue generation in table below)	
---	--

Revenue source	Amount (MVR)
Entry fees	
Photography & videography permits	
donations	
external projects	
annual budget	

Expense	Amount (MVR)
Salaries	
Trainings	
Equipment	
Maintenance	
Consumables	

Event hiring	
Others	

Events	
Others	

Infrastructure Maintenance

List with description new structures developed or maintenance carried out on existing structures

Activity	Start date	End Date	New/Existing

Waste Management

Waste from segregated bins	Amount of waste (kg)
Recyclable plastics	
organic	
Other	

waste collected from litter (kg)	
types of waste found in litter	

Report any incidences relating to waste management

Incident description	Date of occurrence

Visitor Engagement

Number of Maldivian visitors:	
Number of visitors from Laamu Atoll	
Number of tourists	
Total number of visitors:	

List any special group bookings (e.g. school field visit)

Description	No of people	Visit Date

Provide a graph of daily visitor log counts

Non-compliance and illegal activity:
List all incidences

Incident description	Action taken

Education, Awareness & Outreach

List activities undertaken during reporting period

Date(s)	Activity description	Target audience	# people engaged	Link to activity report

List any knowledge products produced (e.g. video, publication, report)

Description of product	Type of product	Link to location

Research and Monitoring

List and ecological monitoring activities undertaken during reporting period

Date(s)	Monitoring type (e.g. reef, terrestrial)	Parameters measured	Link to available reports

For any ecological monitoring conducted report the following parameters
 Format can be adapted according to parameters reported

Type	Attribute	Parameter	Value
Terrestrial	Flora & vegetation	number by type of tree (Mature)	
		number by type of tree (young)	
		Canopy cover (%)	
		vegetation distribution (% composition)	include a graph
	Fauna	Numbers for each type	
	Human impact	litter weight (kg)	
		litter composition	
	Natural impact	Any signs of dead trees (area size or individual tree numbers)	
		Any signs of dead fauna (numbers and type)	
		Other impacts	
Water body	Water quality	Temperature	
		pH	
		dissolved oxygen	
		nutrients	
		pollutants	
	Fauna	Numbers for each type	
	Flora	Numbers for each type	

	Human impact	litter weight (kg)	
		litter composition	
		invasive species type and numbers	
	Other observations		
Marine & Coastal Environment	Beach	Beach length	
		Erosion presence	
	Water quality	Temperature	
		nutrients	
		pollutants	
	Fauna	Fish types and numbers	
		Coral types and numbers	
		live coral cover	
	Flora	sea grass cover & composition	
	Human impact	observed impacts	

Research Activities

Research permit number	Research project description	Research conducted by	Activities carried out	Available reports/data

Appendix 7: Visitor survey questionnaire development guide for Maabaidhoo Koaru

- The purpose of the visitor survey is to find out about the experience of the visitors and get their feedback to help improve the PA management as well as the visitor experience
- The visitor survey shall be prepared as an online form and visitors can be requested to fill the form
- Alternatively, for an identified period in-person questionnaires can also be administered
- The form can include the following sections and can be adapted as needed.

Section	Questions
Socio-demographic	Age
	Gender
	Visiting as individual, family or group
	Residential status (Laamu local, Maldivian outside Laamu, Expat with work visa or international tourist)
	Education level
Visit to Laamu	Which island are you residing in Laamu? (list all islands and tourist resorts)
	What kind of accommodation are you staying at? (guesthouse, private residence, rented local house, resort, other)
	What modes of travel did you use to get here? (private car, bus, taxi, speedboat, airplane, other)
	Why are you visiting Laamu? (work, holiday, visit family, other)
	If you are a visitor to Laamu, how long are you staying in Laamu?
	Is this your first visit to Laamu? If not, approximately how many times have you visited Laamu?
Visit to the PA	Is this your first visit to the PA? If not, approximately how many times have you visited?
	What type of experiences are you seeking at the PA? (Select all that apply) • Adventure activities (diving, surfing, kayaking etc) • Relaxation • Closeness to nature • Wildlife observation • Educational reasons

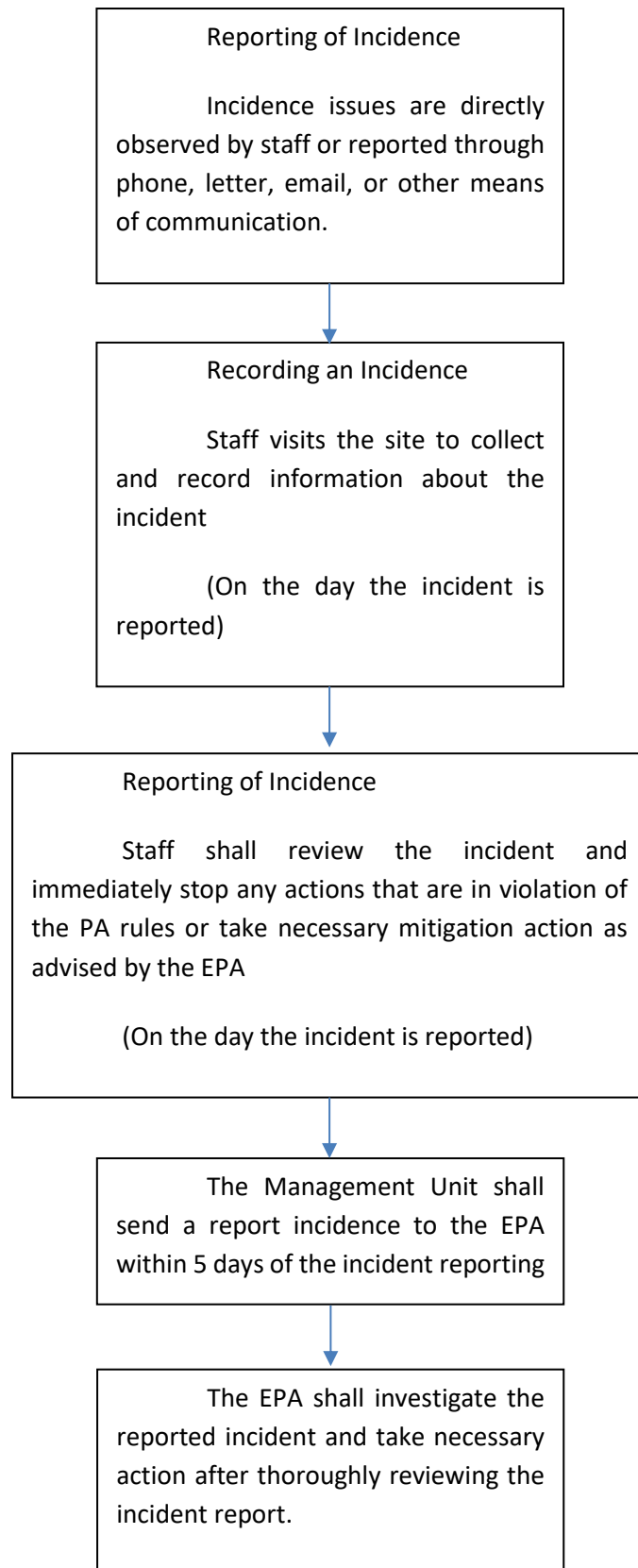
	Other (Specify)
	Do you know this is a Protected Area?
	Do you know why this is a Protected Area?
	Which of the following activities did you undertake at the PA? (Tick all that apply) - Look around the pond and mangrove area - Bathed in the pond - Had a picnic - Surfing - Camping - Bird watching - Other (specify)
Visitor experience	On a scale of 1-5, how satisfied are you with your overall experience at the protected area? (1- very dissatisfied; 2 dissatisfied; 3 neutral; 4 satisfied; very satisfied)
	On a scale of 1-5, did the PA have sufficient information to guide your visit? (1- very insufficient; 2- insufficient; 3- neutral; 4- sufficient; 5- very sufficient)
	On a scale of 1-5, how did you find the cleanliness of the PA? (1- very unclean; 2- unclean; 3-neutral; 4- clean; 5- very clean) On a scale of 1 to 5, how important are amenities (restrooms, food options, etc.) for your overall experience at the PA? (Scale: 1 - Not important, 5 - Very important)
	On a scale of 1 to 5, how important is environmental sustainability and conservation in your decision to visit a nature park (1 being not important, 5 being very important)?
	On a scale of 1 to 5, how interested would you be in participating in educational programs about the local ecosystem/wildlife/conservation efforts?
Feedback & recommendations	Do you have any recommendations to improve your experience at the PA?
	Do you have any additional feedback on regarding the PA?

Appendix 8: Guidelines to monitor non-compliance incidences of PA rules

The following provides guidelines for PA management unit to attend to any incidences of non-compliances or violations of the PA rules.

1. The Maabaidhoo Koaru and Fushi Kan'du Management Unit established within the Laamu Maabaidhoo Council (Management Unit) will be the primary party responsible for attending to reported incidences of non-compliance and violation of PA rules.
2. The Management Unit has the right to attend to such issues and resolve these in a peaceful manner.
3. Reports of the incident shall be received through direct observation by the Management Unit staff or through reports either by phone, letter, email or other means of communication.
4. Management Unit Staff shall attend the site and gather information on the day an incident is reported. Any violations of PA rules should immediately be stopped or necessary mitigation action should be taken as advised by the EPA.
5. A report of the incident should be sent to the EPA within 5 days of the incident being reported.
6. The EPA will investigate the incident and take necessary action after reviewing the incident report.
7. The Management Unit shall maintain a log of all reported incidences and compile a list of incidences in the monthly PA management report.
8. The EPA shall maintain a register of reported incidences and actions taken.
9. A flow diagram outlining the process for attending to the reports is given below.

Flow diagram of Incidence Attendance Mechanism



Appendix 9: PA ecological baseline and periodic monitoring schedule

Attribute	Parameter	Method	Frequency for periodic monitoring
Terrestrial			
Vegetation	- Vegetation species and composition - tree height and girth - canopy cover - Tree health - Invasive species	Transects, plots	Annually (monitor seasonal changes)
Fauna	- Species and composition - Health	Visual surveys	Annually (monitor seasonal changes)
	- Avifauna species and numbers - Migratory birds	Observations by rangers (In future can develop citizen science reporting)	Continuously and reported in monthly report (monitor seasonal changes)
Groundwater	- Temperature - pH - Salinity - Electrical conductivity - Nitrates, Phosphates, Ammonia, - Faecal coliform, and Total coliform - Other pollutants	Onsite testing and laboratory testing	Once every 3 months
Human Impact	- Litter by weight - Litter composition	Observations by rangers	Continuously and reported in monthly report
Water Body			

Water Quality	• Temperature • pH • Salinity • Electrical conductivity • Nitrates, Phosphates, Ammonia, • Faecal coliform, and Total coliform • Other pollutants	Onsite testing and laboratory testing	Once every 3 months
Flora & Fauna	• Flora species and composition • Fauna species and composition • Invasive species	Visual surveys, fish census	
Human Impact	• Litter by weight • Litter composition	Observations by rangers	Continuously and reported in monthly report
Beach & Coastal Environment			
Erosion and coastal changes	• Beach profile • Beach line at high tide and low tide • Vegetation line	Surveying using level, staff and GPS Aerial imagery	Once every 3 months
Coastal vegetation	• Species and composition along beach line	Line transects	Annually
Marine Environment			
Water quality	• Temperature • pH • Salinity • Electrical conductivity • Nitrates, Phosphates, Ammonia, • Faecal coliform, and Total coliform	Onsite testing and laboratory testing	Annually

	• Other pollutants		
Coral reef health	• Percentage live coral cover • Species and abundance • Invasive species	Quadrant	Annually
	• Coral bleaching	Visual quadrants	• Monitor following a MMRI alert in Laamu Atoll. • Continue to monitor every 6 months after a bleaching event to check recovery
Fauna	• Species abundance and composition	Visual surveys	Annually
Pollution	• Litter weight and composition • Visible oil or other surface contamination • Others	Observations by rangers	Continuously and reported in monthly report

Appendix 10: Activities Allowed and prohibited in the PA

Note: The activities which are allowed within the PA are indicated with a right mark (✓) and the activities that are prohibited are marked with a wrong mark (X). Activities that are not relevant or applicable to an area are indicated with a (NA). Activities indicated by an asterisk (*) can be carried out by special permits.

Activity	Marine Area	Terrestrial Area
Any activities that may cause harm to or alter the PA	X	X
Any activities such as remove, kill, injure or remove, that may cause harm to biodiversity within the PA	X	X
Harvest eggs or causing destruction to nests of any species	X	X
Littering	X	X
Using strong lights in the area during nighttime	X	X
Creating noise disturbances to disrupt behaviours of wildlife in the area	X	X
Introduce any new or alien species into the area	X	X
Feeding the birds, fish and other species present in the area	X	X
Mining or conducting any research to find gas, oil or minerals	X	NA
Reclamation and dredging	X	NA
Anchoring	X	NA
Infrastructure development	X	✓*
Aquaculture/mariculture	X	NA
Sand and coral mining	X	NA
Releasing any pollutants into the reef and placing outfalls	X	NA
Use of motor vehicles	NA	X
Cutting, removal or causing harm to trees	NA	X
Removal of soil	NA	X
Plant a seedling or seeds from any type of trees other than that growing in the area	NA	X

Lighting fires	NA	X
Agriculture	NA	X
Visiting and viewing the area by locals and tourists*	?	?
Eco-tourism related activities*	?	?
Research*	?	?
Restoration and rehabilitation activities*	?	?
Traditional resource gathering (fallen palm fronds, mature coconut, dry wood and sea almonds) *	NA	?
Picking, cutting and removal of fruits and other edibles from mangrove plants*	NA	?
Cutting wood*	NA	?

Appendix 11: Guidelines for Access and Other Fees

Below are the proposed fees for the PA. All fees are for Maldives residents or work permit holders unless stated otherwise.

No.	Description	Cost (MVR)
	Revenue	
1	Entry fee	0.00
2	Entry fee (Non-Mv)	77.10
3	Guided tours	100.00
4	Guided tours (Non-Mv)	771.00
5	Bicycle hire per two hours	20.00
6	Bicycle hire (Non-Mv) per two hours	77.10
7	Canoe hire per hour	150.00
8	Canoe hire (Non-Mv) per hour	308.40
9	Professional Photography Permit	500.00
10	Professional Photography Permit (Non-Mv)	750.00
11	Underwater Professional Photography Permit	2,000.00
12	BBQ equipment hire per four hours	40.00
13	BBQ equipment hire (Non-Mv) per four hours	308.40
14	Mobile Vendors per day	100.00
15	Entry fee (Fushi Island)	20.00
16	Entry fee (Fushi Island, Non-Mv)	308.00
17	Dive fee, Guest House, per year	26,000.00

18	Dive fee, Resort, per year	70,000.00
19	Buggy hire per ride	35.00
20	Buggy hire - Non mv per ride	35.00
21	Rent - glamping area per month	60,000.00
22	Rent - Water sports area x3 per month	3,000.00
23	Mooring Bouy per day	775.00
24	Dive fee, Guest House, per month	3,000.00
25	Dive fee, Resort, per month	6,500.00
26	Dive fee, resort/guesthouse, per day	500.00
27	Dive fee, individual, per dive	100.00

Fee exemptions will be made for the following parties:

1. Students and teachers visiting the PA for educational purposes
2. Individuals or parties visiting for official purposes under a special permission from Maabaidhoo Council
3. Individuals or parties attending trainings or capacity development programs organized by the PA Management Unit.
4. Researchers with a valid permit

Future Considerations can be made by the PA Management Steering Committee on access fees for surfing, diving and picnicking in Zone 2 & 3

Appendix 12: Guidelines for selling products within the Maabaidhoo Koaru PA

Food items sold within the Maabaidhoo Koaru PA:

- Should mainly be Maldivian products
- Should give importance to products produced in Laamu Maabaidhoo or within Laamu Atoll
- Should be packaged in environmentally friendly packaging

Souvenirs or other exhibit items sold within the Maabaidhoo Koaru PA should:

- Should be only Maldivian products

- At least 50% of products should be made in Laamu Maabaidhoo or in Laamu Atoll
- Should not be in plastic packaging

Appendix 13: Guidelines for photography and videography within the Maabaidhoo Koaru and Fushi Kan'du Area

1. Commercial photography and videography inside the PA can be carried out under a permit.
2. Drone photography can be carried out under a permit within the PA.
3. Commercial and drone photography and videography permit request forms are available from the PA Management Unit or can be downloaded from their website.
4. Completed permit request forms must be submitted to the PA Management Unit at least 3 (three) days prior to the visit.
5. Completed permit request forms can be submitted to the PA Management Unit between 8:00 and 14:00 hrs on all working days. The form can also be faxed or emailed during these times.
6. The PA Management Unit will review the submitted information and give permission.
7. Forms with false information will be rejected.
8. The maximum duration permitted for a photography or videography session will be 5 (five) hours.
9. All activities carried out in the PA should comply with the PA rules and regulations.
10. Parties conducting commercial photography and videography in the PA should ensure the activities do not cause any negative impact to the ecosystem.
11. Commercial photography and videography permits will require a fee as given below.

Activity	Duration	Fee (MVR)
Photography	Maximum 5 hours	MVR 500
Videography	Maximum 5 hours	MVR 3000

Appendix 14: Guideline for Traditional Resource Use in Maabaidhoo Koaru and Laamu Kanuhuraa

1. Collection of fallen palm fronds, mature coconut and dry wood for traditional use is permitted in the PA.
2. Traditional resource collection can be carried out on Fridays and Saturdays according to the times set below:
 - Morning: 6:00 to 9:00 hrs
 - Afternoon: 16:00 to 18:00 hrs
3. All activities carried out in the PA should comply with the PA rules and regulations
4. Traditional resource collection can be carried out in L. Kanuhuraa with a permit from the Management Unit

Appendix 15: Guideline to conduct research in the Maabaidhoo Koaru and Fushi Kan'du Area

1. Research inside the PA can be carried out under a permit from the management unit. Research permit is issued by EPA, and this permit can be requested through the PA Management Unit or can be downloaded from their website.
2. EPA will review the submitted information and give permission.
3. All research activities carried out in the PA should comply with the PA rules and regulations.
4. Researchers must consent to sharing research findings and publication with the PA Management Unit
5. Commercial research will incur a fee of MVR 3,000 (three thousand) payable to the PA Management Unit.

Appendix 16: Penalties for Non-Compliance in Maabaidhoo Koaru and Fushi Kan'du PA

The following penalties will be imposed for violations of the PA rules, regulations and permit conditions at Maabaidhoo Koaru and Fushi Kan'du Area

No.	Penalty for Violation
1	The management authority reserves the right to immediately remove escort out of the premises, anyone in violation of the PA management rules, regulations or permit conditions.
2	Anyone entering the PA without required permits will be fined MVR 500 (five hundred) in the first instance. For repeat violations, an additional MVR 5,000 (five thousand) will be added to the previous fine.
3	In instances where a permit has to be revoked due to breach of PA management rules, regulations or permit conditions, the individual or party will be fined MVR 8,000 (eight thousand)
4	Damages to any infrastructure or ecosystem within the PA will be fined between MVR 5,000 (five thousand) and MVR 50,000 (fifty thousand) based on the magnitude of the damages
5	Touching or harming any fauna within the PA will incur a fine between MVR 5,000 (five thousand) to MVR 10,000 (ten thousand)
6	Removing any flora or fauna from the PA will incur a fine between MVR 5,000 (five thousand) to MVR 10,000 (ten thousand). Removal of things allowed in Appendix 10 are exempted.
7	Introduction of any new or invasive species into the PA will incur a fine between MVR 5,000 (five thousand) and MVR 50,000 (fifty thousand)
8	Littering within the PA will incur a fine between MVR 5,000 (five thousand) and MVR 50,000 (fifty thousand)
9	Any violations or damages to the PA, not mentioned in Nos 1 to 8 of this Appendix, will be penalized under the Regulation on Environmental Liabilities (2011/R-9)
10	Any violations or damages to the PA, not mentioned in Nos 1 to 8 of this Appendix or the Regulation on Environmental Liabilities (2011/R-9), will be fined between MVR 5,000 (five thousand) to MVR 10,000 (ten thousand)

Appendix 17. A 10-year work plan for management of Maabaidhoo Koaru and Fushi Kan'du Area

Activities	Responsible	Timeline (year)									
											0
Objective 1: By 2025, an effective management plan will be implemented with a functioning management unit on-site.											
Activity 1.1 Approve a management plan and sustainable financing plan for the PA	EA										
Activity 1.2 Delegate management authority to LMC	EA										
Activity 1.3 Establish PA management Steering Committee	EM										

Activity 1.4 Develop infrastructure inside PA	AL MC										
Activity 1.5 Establish management unit and hire staff	AL MC										
Activity 1.6 Develop Standard Operating Procedures (SOP) for PA	PA management unit										
Activity 1.7 Conduct general capacity building trainings for staff	MT oTE /LMC										
Activity 1.8 Conduct ranger training	MT oTE										
Activity 1.9 Develop PA website and	PA management unit										

social media platforms											
Activity 1.10 Implement visitor activities management and monitoring	PA management unit										
Activity 1.11 Develop management effectiveness monitoring protocols	PA management unit										
Activity 1.12 Train staff on management effectiveness monitoring	M oTE										
Activity 1.13 Conduct periodic management effectiveness	PA management unit										

monitoring											
Activity 1.14 Review management plan	PA management steering committee										
Objective 2: By 2028 the current levels of flora and fauna within the PA are maintained or improved.											
Activity 2.1 Develop monitoring parameters and protocols	PA management unit										
Activity 2.2 Procure equipment for ecological monitoring	ML MC										
Activity 2.3 Conduct a training on ecological monitoring for relevant staff	M oTE										

Activity 2.4 Conduct a baseline ecological assessment of the PA	PA management unit										
Activity 2.5 Continue periodic ecological monitoring of the PA	PA management unit										
Activity 2.6 Disseminate information on health of the PA	PA management unit										
Objective 3: By the end of 2028, appreciation of the cultural, social and economic value of the PA by local community and visitors are increased.											
Activity 3.1 Measure baseline level of community understanding of PA values	PA management unit										
Activity 3.2 Continue	PA management unit										

periodic KAP assessment											
Activity 3.3 Develop an ecotourism plan for the Koaru area to promote nature tourism	PA management unit										
Activity 3.4 Develop a community engagement and awareness strategy											
Activity 3.5 Prepare and disseminate on the cultural and historical aspects of the PA and Maabaid hoo island	PA management unit										

A ctivity 3.6 Prepare and disseminate information on social, cultural, ecological and economic benefits of PAs to local community and visitors	PA managem ent unit										
A ctivity 3.7 Promote the PA to generate interest to visit the PA	PA managem ent unit										

Management Plan Annex: Financial Plan

Laamu Maabaidhoo and Fushi Kan'du Area Management Plan

28th April 2025

Proposed by

Ministry of Tourism and Environment

Prepared by

Water Solutions Pvt Ltd

Contents

Executive Summary	93
Introduction	94
Description of Financial Plan	95
Initial Investment	95
Operating Costs	95
Revenue Break-up	95
Cash Flow	96
Risk Management	97
Monitoring and Evaluation	97
Annex A: Initial investment	91
Annex B: Operating costs	99
Annex C: Revenue break-up	100
Annex D: Cash flow	101

Executive Summary

L. Maabaidhoo Koaru and Fushi Kan'du Area has been declared a Protected Area (PA) on 23rd December 2021 under the Environment Protection and Preservation Act (4/93). This area is categorized into three zones: (1) Zone 1- L. Maabaidhoo Koaru Area, (2) Zone 2 - Fushi Kan'du area, and (3) Zone 3 - L. Kanuhuraa and L. Fushi. The total area of the PA is 518 hectares. Zones 1 and 3 were declared as PAs under the Category 7: Protected Area with Sustainable Use while Zone 2 was declared a PA under Category 6: Species/Habitat Management Area. The PA is mainly protected for its significant biodiversity and social significance for the local community. This management plan is developed in accordance with Clause 12 of the Protected Areas Regulation (2018/R-78) to ensure sustainable use and management of the PA.

The management framework proposes a co-management governance regime involving the Ministry of Tourism and Environment (MoTE), the Environmental Protection Agency (EPA), and the Laamu Maabaidhoo Council (LMC). The LMC will establish a PA Management Unit within the Council to implement the management plan.

Through careful allocation of financial resources and the establishment of a comprehensive governance framework, this plan aims to protect the ecological and social values of L. Maabaidhoo Koaru and Fushi Kan'du Area while providing long-term benefits to the local community and promoting sustainable use of this PA.

Introduction

This management plan is developed in accordance with Clause 12 of the Protected Areas Regulation (2018/R-78) to ensure sustainable use and management of Laamu Maabaidhoo Koaru and Fushi Kan'du Area. This area is categorized into three zones: Zone 1. L. Maabaidhoo Koaru Area, Zone 2. Fushi Kan'du area, and Zone 3. L. Kanuhuraa and L. Fushi. The L. Maabaidhoo Koaru and its surrounding areas, the Fushi Kan'du channel area and the uninhabited islands of L. Kanuhuraa and L. Fushi has been declared a Protected Area (PA) on 23rd December 2021 under the Environment Protection and Preservation Act (4/93). The total area of 518 hectares was declared as a PA under the Category 7: Protected Area with Sustainable Use following the government announcement no: (IUIL)438-ENV/438/2021/371. The PA is mainly protected for its significant biodiversity and social significance for the local community.

The vision of the Maabaidhoo Koaru and Fushi Kan'du Area is “to utilize the economic benefits and to maintain and improve the ecosystem functions and services of Maabaidhoo Koaru and Fushi Kan'du Protected Area for the local community, while effectively managing the area to ensure sustainability and ecological health”. The financial plan supports this vision by providing necessary funding to achieve the following objectives.

- Objective 1: By end of 2026, an effective management plan will be implemented with a functioning management unit on-site.
- Objective 2: By 2028, the current levels of flora and fauna within the PA are maintained or improved.
- Objective 3: By the end of 2028, appreciation of the cultural, social and economic value of the PA by local community and visitors has increased.

This report presents financial plan to sustainably implement the proposed management plan for Laamu Maabaidhoo Koaru and Fushi Kan'du Area. The objective of this financial plan is to address the resources required to establish effective management, support infrastructure, and ensure ongoing conservation and sustainable use practices. Key areas of focus include funding for management unit establishment, infrastructure development, ecological monitoring and visitor management. Additionally, the plan is designed with the goal of developing revenue-generating services within the PA, thereby supporting ongoing operations and potentially yielding profits that can be reinvested into further conservation and management efforts. This report provides a detailed breakdown of the initial investment, operating costs, revenue break-up and cash flow for the PA.

Description of Financial Plan

Initial Investment

Investment in the development and maintenance of infrastructure, especially visitor centre is essential. There is a need to improve the accessibility and infrastructure within the mangrove area to accommodate visitors, including well-maintained paths and facilities, such as rest areas and restrooms. A small grant from ENDhERI has been awarded to Maabaidhoo Island Council to support in the implementation of the PA management plan, which may be considered part of the initial investments.

The initial cost sheet includes fixed assets (physical structures), vessels, vehicles, management office, and miscellaneous items. Preliminary expenses cover bank accounts, stationery, and compliances. Construction costs for the visitor/research center is estimated using the rate MVR 700-800. The rate also applies for both masonry and wooden structures as they both incur similar cost during construction. This rate can be used to come up with the costs for viewing platforms, watchtowers, parking areas, and waste collection.

Given that this PA includes an uninhabited island and a diving area near Maabaidhoo Island, the cost of a Dinghy is also included. However, investment costs for the camping and water sports area are excluded, as the Council has decided to outsource these components. A comprehensive breakdown of the initial investment is provided in Error! Not a valid bookmark self-reference.

Operating Costs

To effectively achieve the objectives of this management plan, the financial plan identifies the essential resources, staffing, and assets required. Operating costs for the PA incorporate office cost, staff cost and activities cost. Office expenses includes internet, phone, electricity, water, conveyance, meeting costs, and office supplies, totaling around 58,200 MVR. Staff costs are estimated for 3 staff members; an Environment Officer and two rangers. The combined monthly staffing costs for these roles are estimated to be around 39,000 MVR, which includes salaries, benefits, and any associated allowances. Activity costs include staff training, educational initiatives to raise community and visitor awareness, and marketing efforts to promote sustainable tourism. The details of operating costs are outlined in Annex B: Operating costs

Revenue Break-up

The current product offerings at L. Maabaidhoo Koaru and Fushi Kan'du Area already provides a valuable experience by offering nature walks, picnic areas, canoeing, diving and photography. Visitors can participate in these activities to explore the mangrove area and dive site, observe a variety of species, and learn about the crucial function mangroves provide in environmental preservation. Potential products and services provided from the PA includes establishing recreational areas, vendor stands to offer refreshments and local handicrafts and provides a venue for scientific research as well.

Revenue streams for the next 10 years include entry fees, guided tours, bicycle hire, canoe hire, photography, barbecue equipment and dive fees. Revenue is expected to grow by 10% every two years. Photography and dive fee is identified as major revenue sources, and the council

is advised to focus on this stream. The revenue stream includes proposed rent to be taken from third parties to use areas within the PA for watersports and glamping respectively. The agreement for this arrangement can be done between the EPA and the third party, and can be deposited to the LMC under the Decentralization Act. A comprehensive breakdown of revenue sources for this PA is presented in Annex C: Revenue break-up

Cash Flow

The cash flow sheet shows a negative net cash flow for the first 7 years. This is due to the initial investment necessary to setup the infrastructure and get the visitor centre operational. However, the investment will reach break-even during the 8th year. Excluding the initial investment, visitor centre operations can be managed within the revenue generated without incurring a negative cash flow. A detailed cash flow table for the PA is provided in

Annex D: Cash flow.

Risk Management

This financial plan also incorporates a comprehensive risk management strategy to address potential financial and operational challenges that could impact the effective management of this PA. Key risks include fluctuations in funding sources, unexpected maintenance costs, environmental degradation, and changes in visitor numbers. To mitigate these risks, it is important to have multiple funding sources and regularly review financial performance to adapt to changing circumstances. Additionally, periodic ecological assessments and visitor impact studies will be conducted to address any environmental or operational concerns.

Monitoring and Evaluation

The financial plan should be monitored and evaluated along with the management plan. Refer to Section 12 of the Laamu Maabaidhoo Koaru and Fushi Kan'du Area Management Plan.

Annex A: Initial investment

Initial Investment		
		Total Cost
Fixed assets		
PA infrastructure		3,890,172.50
Visitor/research centre	3,118,500.00	
Viewing platform x4	252,910.00	
Watch tower x2	134,067.50	
Public Toilets x2	188,265.00	
Waste collection point (Bins) x3	2,700.00	
Bicycle stand x3	1,800.00	
Parking area	7,500.00	
Access gate x2	33,500.00	
Information board stand x7	42,000.00	
Picnic area x2	15,600.00	
Open shower (muslim shower) x2	21,330.00	
Camping area	-	
Surf Shack x2	36,000.00	
Water sports area	-	
Wooden path	-	
Portable toilet x6	36,000.00	
Vessels, vehicles and equipment		1,388,200.00
Dingy	350,000.00	
Life guard equipment x2	10,000.00	
Bicycle	175,000.00	
Security camera x4	24,000.00	
Buggy x2	154,200.00	
Mooring bouys x6	600,000.00	
BBQ equipment	75,000.00	
Canoe rack	18,000.00	
PA Management Office		500,000.00
Office setup/renovation	50,000.00	
Rent Deposit		
Furniture	170,000.00	
Equipment (PC, printers, etc)	105,000.00	
Equipment (Ecological survey)	175,000.00	
Miscellaneous Fixed Assets		52,500.00
Network connections	2,500.00	
Website	50,000.00	
Total Fixed Assests		5,830,872.50
Preliminary expenses		7,000.00
Bank accounts	5,000.00	
Satutory compliance	2,000.00	
Insurance	-	
Total initial investment	MVR	5,837,872.50

Annex B: Operating costs

Operating Cost															
No.	Description		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR 2024
1	Office Cost	-	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	58,200
2	Staff Cost	-	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	468,000
3	Activities Cost	-	1,000	4,000	4,000	4,000	4,000	4,000	14,000	4,000	4,000	4,000	4,000	4,000	55,000
Total Operating Costs			44,850	47,850	47,850	47,850	47,850	47,850	57,850	47,850	47,850	47,850	47,850	47,850	581,200
Office Cost															
No.	Description	Rate	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR 2024
1	Rent														-
2	Communication (internet, phone, etc)	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	19,800
3	Utilities (electricity, water, etc)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
4	Conveyance (local transport)	500	500	500	500	500	500	500	500	500	500	500	500	500	6,000
5	Meeting Cost (petty cash)	500	500	500	500	500	500	500	500	500	500	500	500	500	6,000
6	Office Supplies (stationary, etc)	200	200	200	200	200	200	200	200	200	200	200	200	200	2,400
7	Compliance	200	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Total Office Cost			4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	4,850	58,200
Staff Cost															
No.	Description	Rate	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR 2024
1	Environment officer	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	180,000
2	Rangers x2	12,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	288,000
Total annual salary			39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	468,000
Activities Cost															
No.	Description	Rate	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR 2024
1	Training	10,000	10,000						10,000						20,000
2	Education, Awareness and Outreach	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
3	Marketing	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
Total Activities Cost			14,000	4,000	4,000	4,000	4,000	4,000	14,000	4,000	4,000	4,000	4,000	4,000	68,000

Annex C: Revenue break-up

Assumptions	Nos	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	425	-	-	-	-	-	-	-	-	-	-
	212	16,345.20	16,345.20	17,979.72	17,979.72	19,777.69	19,777.69	21,755.46	27,194.33	29,913.76	29,913.76
1 per week	13	1,300.00	1,300.00	1,430.00	1,430.00	1,573.00	1,573.00	1,730.30	1,573.00	1,730.30	1,730.30
1 per week	13	10,023.00	10,023.00	11,025.30	11,025.30	12,127.83	12,127.83	13,340.61	12,127.83	13,340.61	13,340.61
	70	1,400.00	1,400.00	1,540.00	1,540.00	1,694.00	1,694.00	1,863.40	1,694.00	1,863.40	1,863.40
	32	2,467.20	2,467.20	2,713.92	2,713.92	2,985.31	2,985.31	3,283.84	2,985.31	3,283.84	3,283.84
	212	31,800.00	31,800.00	34,980.00	34,980.00	38,478.00	38,478.00	42,325.80	38,478.00	42,325.80	42,325.80
	106	32,690.40	32,690.40	35,959.44	35,959.44	39,555.38	39,555.38	43,510.92	39,555.38	43,510.92	43,510.92
1 every week	26	13,000.00	13,000.00	14,300.00	14,300.00	15,730.00	15,730.00	17,303.00	15,730.00	17,303.00	17,303.00
2 every week	26	19,500.00	19,500.00	21,450.00	21,450.00	23,595.00	23,595.00	25,954.50	23,595.00	25,954.50	25,954.50
1 in every 20	4	8,000.00	8,000.00	8,800.00	8,800.00	9,680.00	9,680.00	10,648.00	9,680.00	10,648.00	10,648.00
1 in every 20	104	4,160.00	4,160.00	4,576.00	4,576.00	5,033.60	5,033.60	5,536.96	5,033.60	5,536.96	5,536.96
1 in every 20	26	8,018.40	8,018.40	8,820.24	8,820.24	9,702.26	9,702.26	10,672.49	9,702.26	10,672.49	10,672.49
	106	10,600.00	10,600.00	11,660.00	11,660.00	12,826.00	12,826.00	14,108.60	12,826.00	14,108.60	14,108.60
	320	6,400.00	6,400.00	7,040.00	7,040.00	7,744.00	7,744.00	8,518.40	7,744.00	8,518.40	8,518.40
	160	49,280.00	49,280.00	54,208.00	54,208.00	59,628.80	59,628.80	65,591.68	59,628.80	65,591.68	65,591.68
	1	26,000.00	26,000.00	28,600.00	28,600.00	31,460.00	31,460.00	34,606.00	31,460.00	34,606.00	34,606.00
	1	70,000.00	70,000.00	77,000.00	77,000.00	84,700.00	84,700.00	93,170.00	84,700.00	93,170.00	93,170.00
	104	3,640.00	3,640.00	4,004.00	4,004.00	4,404.40	4,404.40	4,844.84	4,404.40	4,844.84	4,844.84
	52	1,820.00	1,820.00	2,002.00	2,002.00	2,202.20	2,202.20	2,422.42	2,202.20	2,422.42	2,422.42
	12	720,000.00	720,000.00	792,000.00	792,000.00	871,200.00	871,200.00	958,320.00	871,200.00	958,320.00	958,320.00
	12	36,000.00	36,000.00	39,600.00	39,600.00	43,560.00	43,560.00	47,916.00	43,560.00	47,916.00	47,916.00
6 every week	156	120,900.00	120,900.00	132,990.00	132,990.00	146,289.00	146,289.00	160,917.90	146,289.00	160,917.90	160,917.90
	4	12,000.00	12,000.00	13,200.00	13,200.00	14,520.00	14,520.00	15,972.00	14,520.00	15,972.00	15,972.00
	2	13,000.00	13,000.00	14,300.00	14,300.00	15,730.00	15,730.00	17,303.00	15,730.00	17,303.00	17,303.00
	52	26,104.00	26,104.00	28,714.40	28,714.40	31,585.84	31,585.84	34,744.42	31,585.84	34,744.42	34,744.42
	26	2,600.00	2,600.00	2,860.00	2,860.00	3,146.00	3,146.00	3,460.60	3,146.00	3,460.60	3,460.60
	2,277	1,247,048	1,247,048	1,371,753	1,371,753	1,508,928	1,508,928	1,659,821	1,516,345	1,667,979	1,667,979

Estimated revenue from aforementioned fees

Revenue						
No.	Description	Cost (MVR)	Overhead (fixed and variable) (MVR)	Total (MVR)	Margin 25% (MVR)	Price (MVR)
	Revenue					
1	Entry fee	0.00	0.00	-	-	-
2	Entry fee (Non-Mv)	77.10	0.00	77.10	-	77.10
3	Guided tours	100.00	0.00	100.00	-	100.00
4	Guided tours (Non-Mv)	771.00	0.00	771.00	-	771.00
5	Bicycle hire per two hours	20.00	0.00	20.00	-	20.00
6	Bicycle hire (Non-Mv) per two hours	77.10	0.00	77.10	-	77.10
7	Canoe hire per hour	150.00	0.00	150.00	-	150.00
8	Canoe hire (Non-Mv) per hour	308.40	0.00	308.40	-	308.40
9	Professional Photography Permit	500.00	0.00	500.00	-	500.00
10	Professional Photography Permit (Non-Mv)	750.00	0.00	750.00	-	750.00
11	Underwater Professional Photography Perm	2,000.00	0.00	2,000.00	-	2,000.00
12	BBQ equipment hire per four hours	40.00	0.00	40.00	-	40.00
13	BBQ equipment hire (Non-Mv) per four hour	308.40	0.00	308.40	-	308.40
14	Mobile Vendors per day	100.00	0.00	100.00	-	100.00
15	Entry fee (Fushi Island)	20.00	0.00	20.00	-	20.00
16	Entry fee (Fushi Island, Non-Mv)	308.00	0.00	308.00	-	308.00
17	Dive fee, Guest House, per year	26,000.00	0.00	26,000.00	-	26,000.00
18	Dive fee, Resort, per year	70,000.00	0.00	70,000.00	-	70,000.00
19	Buggy hire per ride	35.00	0.00	35.00	-	35.00
20	Buggy hire - Non mv per ride	35.00	0.00	35.00	-	35.00
21	Rent - glamping area per month	60,000.00	0.00	60,000.00	-	60,000.00
22	Rent - Water sports area x3 per month	3,000.00	0.00	3,000.00	-	3,000.00
23	Mooring Bouy per day	775.00	0.00	775.00	-	775.00
24	Dive fee, Guest House, per month	3,000.00	0.00	3,000.00	-	3,000.00
25	Dive fee, Resort, per month	6,500.00	0.00	6,500.00	-	6,500.00
26	Dive fee, resort/guesthouse, per day	500.00	1.00	501.00	1.00	502.00
27	Dive fee, individual, per dive	100.00	0.00	100.00	-	100.00

Annex D: Cash flow

Cash Flow										
Details	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Income										
Revenue	1,247,048	1,247,048	1,371,753	1,371,753	1,508,928	1,508,928	1,659,821	1,516,345	1,667,979	1,667,979
Bal from Previous Quarter	-	(5,172,024)	(4,535,236)	(3,804,256)	(3,105,315)	(2,302,839)	(1,535,685)	(654,728)	43,811	853,093
Total Income	1,247,048	(3,924,976)	(3,163,483)	(2,432,503)	(1,596,386)	(793,910)	124,136	861,617	1,711,790	2,521,072
Expenses										
Initial Investment	5,837,873									
Office Cost	58,200	61,110	64,166	67,374	70,742	74,280	77,994	81,893	85,988	90,287
Staff Cost	468,000	491,400	515,970	541,769	568,857	597,300	627,165	658,523	691,449	726,022
Activity Cost	55,000	57,750	60,638	63,669	66,853	70,195	73,705	77,391	81,260	85,323
Total Expenses	6,419,073	610,260	640,773	672,812	706,452	741,775	778,864	817,807	858,697	901,632
Net Cash	(5,172,024)	(4,535,236)	(3,804,256)	(3,105,315)	(2,302,839)	(1,535,685)	(654,728)	43,811	853,093	1,619,440