Deliverable 5: Management Plans & Annexes

Laamu Bodufinolhu and Vadinolhu Kan'du Olhi Management Plan

Project: Consultancy Service to Develop Management plan for six Protected Areas at Laamu Atoll

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28th April 2025
Proposed by
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Prepared by
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1. Executive summary

Laamu Bodufinolhu and Vadinolhu Kandu Olhi Area is located on the north-western side of Laamu atoll. Bodufinolhu is a small uninhabited island located at 2.028384, 73.373370, and Vadinolhu Kandu is a channel that lies in between the islands Bodufinolhu and Vadinolhu. The total size of the area is 706.02 hectares, including a marine area of 704.66 ha and a terrestrial area of 1.36 ha.

Vadinolhu Kandu is a key biodiversity hotspot and is popular among divers for this reason. This area is a grouper and Napoleon Wrasse spawning area. This is also a critical habitat for protected species in Maldives, such as Reef Manta Ray (*Mobula Alfredi*), Hawksbill turtles (*Eretmochelys imbricate*), Green turtles (*Chelonia mydas*) and different types of sharks, which are globally endangered species. Further, Bodufinolhu is a nesting area for the seabird locally known as *Ainmathee dhooni*.

The vision of the Laamu Bodufinolhu and Vadinolhu Kandu Olhi PA is "To effectively manage Bodufinolhu and Vadinolhu Kandu Olhi Protected Area as a habitat for globally and locally significant and threatened species and ensuring a sustainable and harmonious relationship with ocean-users". The following 3 objectives are identified for the management plan to achieve this vision:

- Objective 1: By the end of 2025, an effective management plan will be implemented with a functioning management unit.
- Objective 2: By the end of 2028, the current levels of turtles, sharks, rays, seabirds and other globally endangered species, and general biodiversity within the PA are maintained or improved.
- Objective 3: By the end of 2028, understand the current levels of tourism and fishery use, and develop and implement appropriate guidelines for sustainable practices.

The Bodufinolhu and Vadinolhu Kandu Olhi 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 Atoll Council (LAC). The LAC 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, PA use management, compliance monitoring and enforcement, research and monitoring and management effectiveness monitoring.

2. 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 Bodufinolhu and Vadinolhu Kandu Olhi Area. This area was declared a Protected Area (PA) on 23rd December 2021 under the Environment Protection and Preservation Act (4/93). The total area of 706.02 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.

The Bodufinolhu and Vadinolhu Kandu Olhi 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 Atoll Council (LAC). The LAC 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 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 Atoll Council and other local stakeholders. A market assessment and willingness to pay for improved management was also conducted.

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3. Vision

Bodufinolhu and Vadinolhu Kandu Olhi is recognized for its significant biodiversity. The channel is especially known to have several globally endangered species. The area is also economically important for fisheries and tourism.

The Bodufinolhu and Vadinolhu Kandu Olhi PA is therefore guided by the following vision:

"To effectively manage Bodufinolhu and Vadinolhu Kandu Olhi Protected Area as a habitat for globally and locally significant and threatened species and ensuring a sustainable and harmonious relationship with ocean-users"

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4. Management Objectives

The main objectives of this management plan are:

- Objective 1: By the end of 2025, an effective management plan will be implemented with a functioning management unit.
- Objective 2: By the end of 2028, the current levels of turtles, sharks, rays, seabirds and other globally endangered species, and general biodiversity within the PA are maintained or improved.
- Objective 3: By the end of 2028, By the end of 2028, understand the current levels of tourism and fishery use, and develop and implement appropriate guidelines for sustainable practices.

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5. Description of the Site

The Laamu Bodufinolhu and Vadinolhu Kandu Olhi Area is a total size of 706.02 ha area which consists of 1.36 ha of terrestrial area and 704.66 ha of marine area, as shown in Figure 1. The PA 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: Bodufinolhu, located at 2.028384, 73.373370, is an uninhabited island at North-West of Laamu atoll. It is a small island of only 1.71ha. The area is bounded by the following geographical coordinates given in **Error! Reference source not found.** Vadinolhu Kandu is a channel located at the North-West of Laamu. The depth is about 20 to 30m and lies in between Bodufinolhu and Vadinolhu. The area is known to have strong currents.

Biological features: Bodufinolhu is a nesting area for seabirds locally known as Ainmathee dhooni. Vadinolhu Kandu is noted as a key biodiversity hotspot in Laamu atoll and is a habitat for various endangered species including *Chelonia mydas* (Green turtles) and *Mobula Alfredi* (Reef manta ray). This area is also a grouper spawning and aggregation site (*Epinephelus fusciguttatus, E. polyphekadoin, Pectropomus areoatus, P. laevis,* and *P. pessuliferus*), and a Napoleon Wrasse (*Cheilinus undalatus*) spawning site. This channel is also a habitat for various shark species, including *Triaenodon obesus* (White-tip reef shark). The island has minimal vegetation, with few shrubs.

Cultural features: The channel is used for reef fishery by locals.

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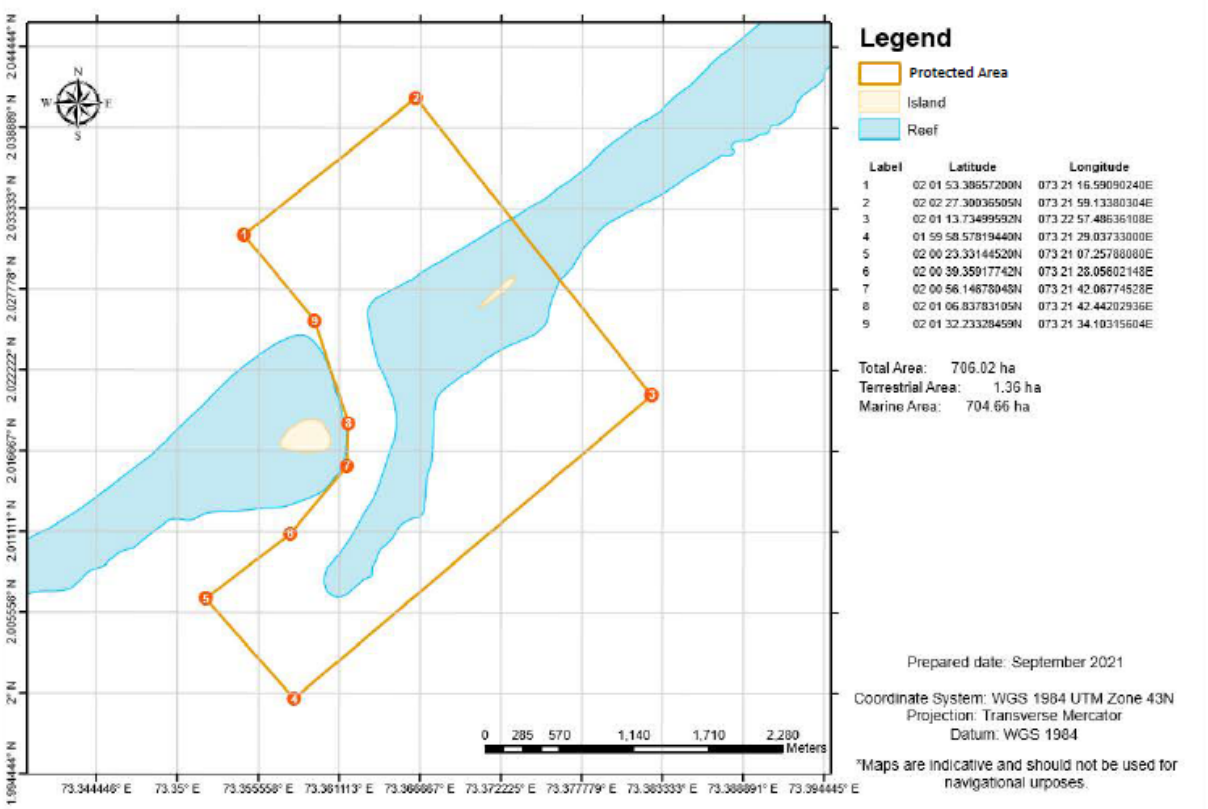

Figure 1: Bodufinolhu and Vadinolhu Kandu Olhi Protected Area

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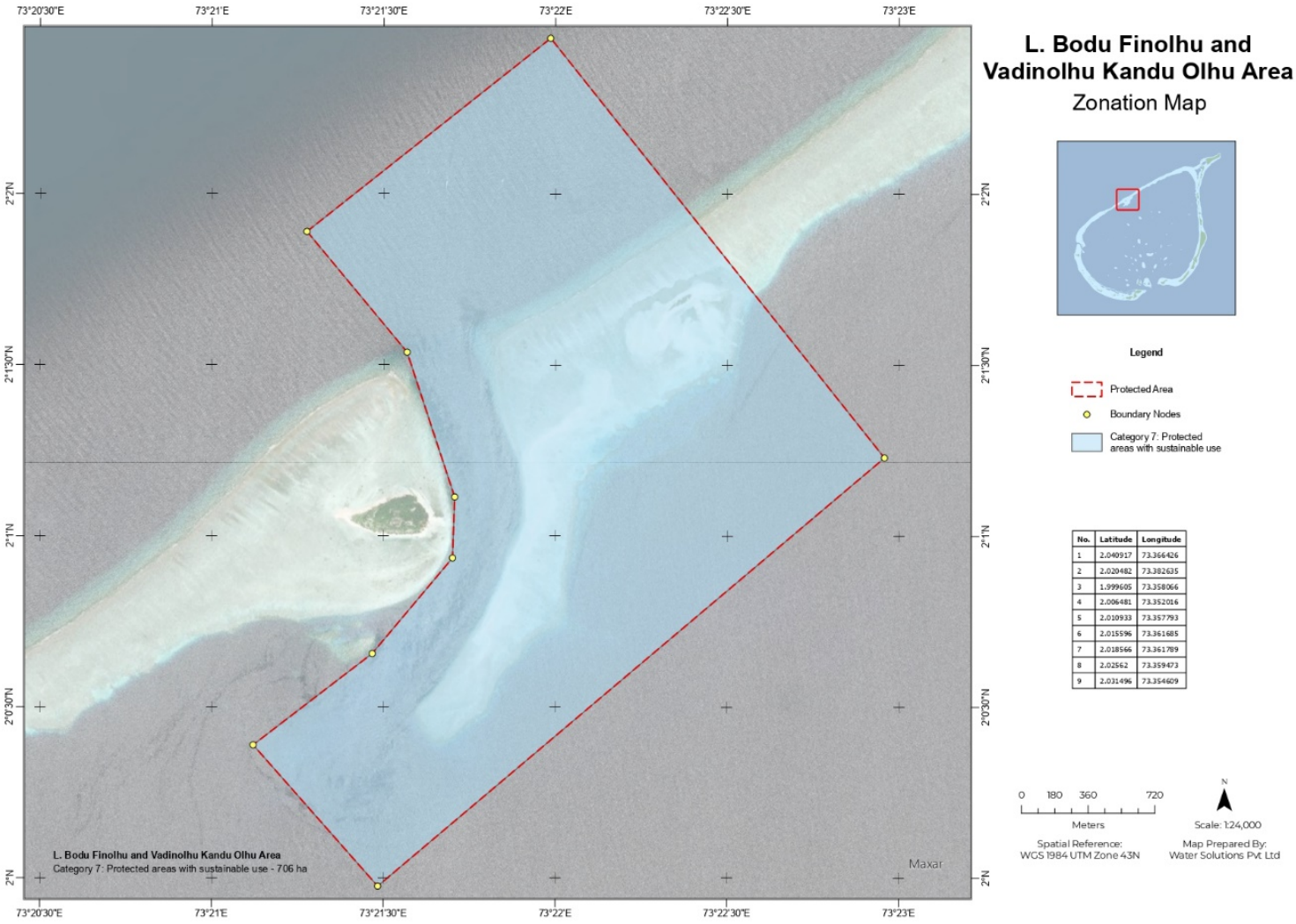
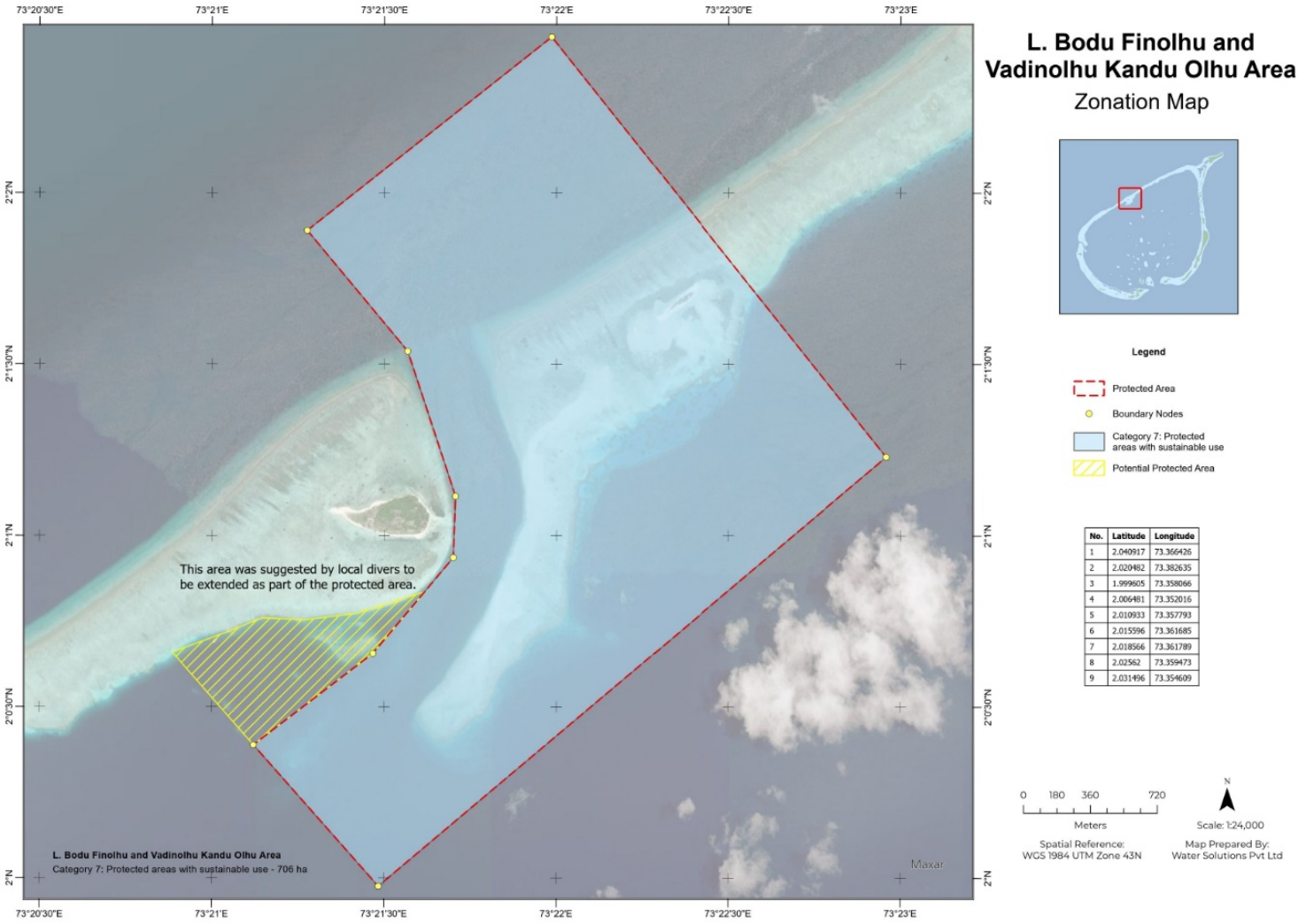


Figure 2: Zonation map for Bodufinolhu and Vadinolhu Kandu Olhi



No.	Latitude	Longitude
1	2.040917	73.366426
2	2.020482	73.382635
3	1.999605	73.358066
4	2.006481	73.352016
5	2.010933	73.357793
6	2.015596	73.361685
7	2.018566	73.361789
8	2.02562	73.359473
9	2.031496	73.354609

Figure 3: Proposed zonation by local stakeholders

Current resource uses

This PA located in a remote area, is mostly used for fisheries, and as a travel route. The current uses are described below and in Figure 4.

1. Fisheries: The southeastern area of the channel in the inner atoll area is the most heavily used area in Laamu atoll for bait fishery. Fishers from other atolls, such as from Thaa atoll also come to this area for bait fishery. Other types of fisheries conducted here include reef, tuna, octopus, sea cucumber and bill fisheries. Invertebrate, lobster and sea cucumber collection are done in the lagoon of the island and surrounding area.
2. Travel: It is a travel route for vessels passing through Laamu Atoll, going either north or southwards.
3. Diving: Being a key biodiversity hotspot, Vadinolhu is also a dive site, mostly from liveaboard vessels, and less frequently used by resorts and dive schools in Laamu given the remote location of the area.
4. Picnicking: The island is used for picnicking, usually by residents from Maavah, the closest inhabited island.

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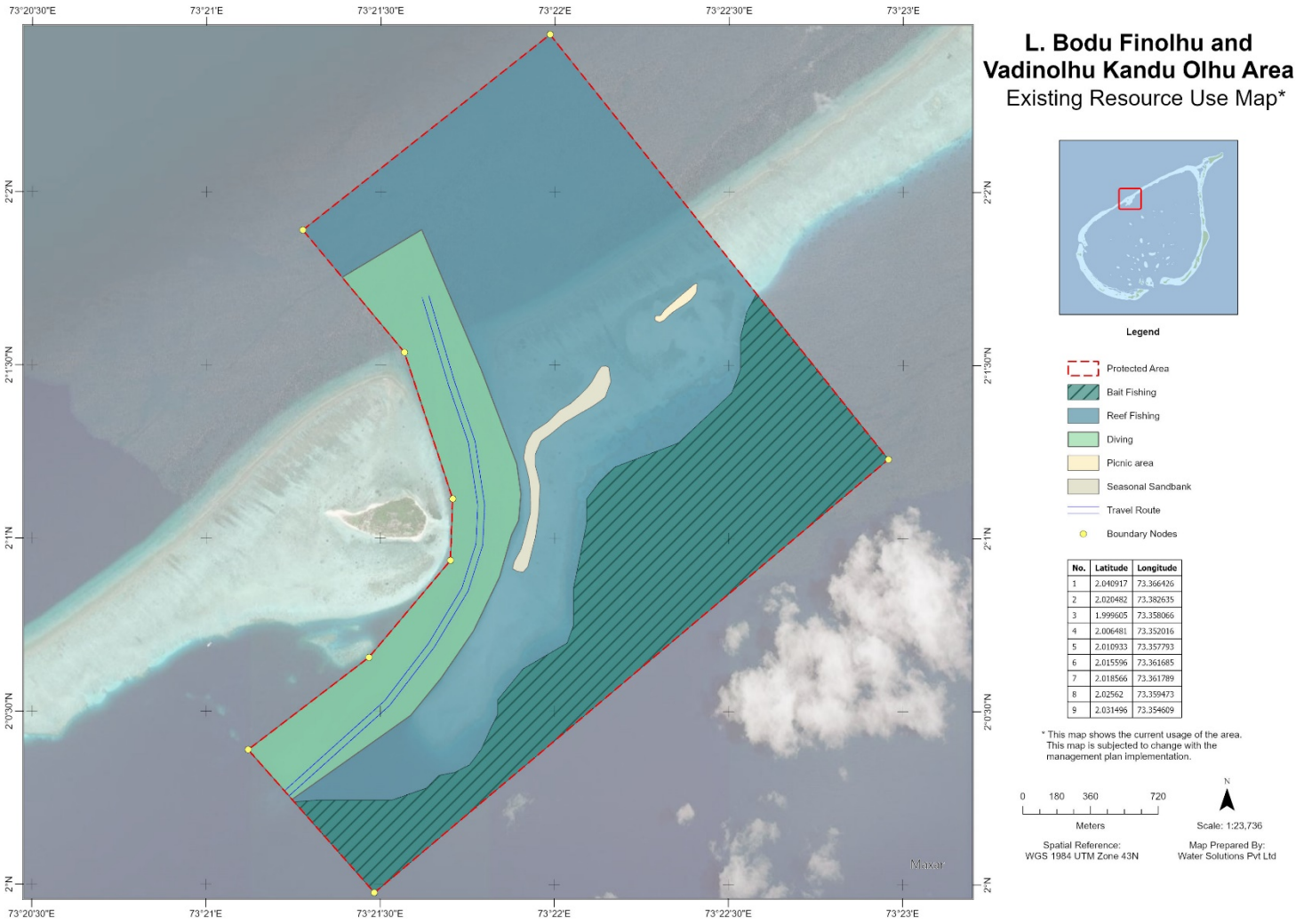

Figure 4: Existing resource use in Bodufinolhu and Vadinolhu Kandu Olhi

6. Key values of the site

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

1. The channel is a known Napoleon Wrasse and grouper spawning area.
2. Several globally and nationally endangered species under IUCN Red List of Threatened Species are found in the channel. These include green sea turtle (*Chelonia mydas*), and *Triaenodon obesus* (White-tip reef shark).
3. Bodufinolhu is a key bird nesting habitat for general seabirds, commonly known as *Ainmathee dhooni.*
4. Vadinolhu Kandu is an important site for bait fishery.

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7. 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 the species found in this area is needed. 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 into the initial activities of the management plan.

Currently there is no specific management unit, 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 unit. Capacity is also needed to be built for sustainable financing planning.

The PA is quite far from most inhabited islands. This can be a constraint for monitoring the health of the area due to the logistical issues that can arise due to the travel distance.

Threats

Figure 5 gives a threat prioritization matrix showing the likelihood and extent of threat impact.

Human threats: The prospect of nature-based tourism and attracting visitors is a hope of the community. The LAC is interested in developing tourism in Bodufinolhu, but there are concerns of waste generation and compromising the natural values of the PA, especially since the island is a nesting site for seabirds.

Vadinolhu Kandu is highlighted to have high fishing intensities of bait fishery, and notable use of reef fishery as well. Local stakeholders have shared that many fishing boats are involved in bait fishery at the same time and raised concerns regarding the decline in bait fish in the atoll. It is important to monitor bait fish populations and address possible declines, as well as to develop a mechanism to reduce traffic in the area. There also are low levels of octopus, lobster, sea cucumber, and bill fisheries carried out in the lagoon of Bodufinolhu and surrounding area, which should also be monitored.

Further, ghost nets and fishing lines get entangled in corals and marine species, and are prominently from fishing practices outside of Maldives EEZ. Vadinolhu Kandu is also popular among divers. Overcrowding is a concern in this area, and visitor monitoring and regulation needs to be incorporated into management. Anchoring during fishing and diving is another issue, which will need to be monitored. Marine litter, especially plastics and micro plastic pollution is an issue all over Maldives, which can be ingested by marine species and can also be entangled in them.

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.

Likelihood						Constraints
Rare	Unlikely	Possible	Likely	Almost certain		
		- Overfishing - Anchoring - Unsustainable developmental impacts	- Sea level rise	- Beach erosion - Bleaching event	Catastrophic	
		- Overcrowding at Vadinolhu Kan'du	-Waste generation by picnickers	- Marine litter	Major	
					Moderate	
					Minor	
					Insignificant	

Low risk

Medium risk

High risk

Very high risk

Figure 5. Threat identification and prioritization matrix for L. Bodufinolhu and Vadinolhu Kandu Olhi

Opportunities

The Laamu Atoll Council (LAC), is overall responsible for local governance of the atoll, and hence, assigning the management authority to LAC through a Memorandum of Understanding (MoU) between LAC and EPA can be a potential model for the PA as there are no Island Councils nearby. This ensures that PA management can be a collaborative process with local stakeholders involved.

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.

Vadinolhu island is currently leased for resort development. A co-management governance model can be explored, with the potential resort management involved in the PA management. This can overcome the aforementioned issue of the PA being isolated from the inhabited areas of Laamu atoll. The LAC being situated in Fonadhoo is far from the PA site, making on-site monitoring difficult. Once a resort is in operation, the resort can play a significant role in the management, especially monitoring the area.

Additionally, Laamu Fisheries Forum, organized by Maldives Resilient Reefs in partnership with LAC gives the opportunity to convene with fishers in Laamu to discuss managing fisheries in areas with high fishing intensities and manage possible overfishing. Maldives Resilient Reefs/ Blue Marine Foundation and Six Senses Laamu are currently implementing a programme Laamaseelu Masveriya to work with fishers to ensure sustainable use of the nearby reefs.

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8. Governance

The Laamu Bodufinolhu and Vadinolhu Kandu Olh*i* 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 Atoll Council (LAC). The Laamu Atoll Council will be assigned management authority through a memorandum of understanding with the EPA. If a resort does start operating at Vadinolhu, then co-management with LAC can be explored. The LAC will engage support from the Laamu based NGOs and research groups to support research and monitoring of the PA. MRR has an office on Gan and can provide support to LAC and I'm sure Six Senses Laamu and partner NGOs can do the same on their areas of expertise. A proposed governance structure organogram is given in Appendix 1. The functions of the PA management unit 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 LAC
- Determine all policies related to the establishment and management of the protected area, including review and changes to PA rules 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 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.

Roles and responsibilities of the Environmental Protection Agency (EPA)

- A main regulatory authority for the PA through a tripartite agreement with MoTE, EPA and LAC
- 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
- Approve and implement the management plan and a sustainable financing plan for the PA
- 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 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.
- 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 Atoll Council

- A main regulatory authority for the PA through a tripartite agreement with MoTE, EPA and LAC
- 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.
- Ensure equity including gender equity in site management and include a review of practices during management review.
- Oversee and support the functioning of the PA Management Unit
- 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

- PA Management Unit will be responsible for implementing the 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 unit the administrative role will include programmatic planning, budgeting, and monitoring functions. This includes:
    - Developing an annual programme and budget for the management unit
    - Preparing bi-annual PA management reports to be submitted to the EPA according to guidelines in Appendix 4
    - 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
- Issue any permits or collect fees
- Maintain and monitor a log of activities within the PA and report these in the PA management monitoring report.
- Conduct and analyze user surveys to inform management planning. The user surveys shall be conducted as needed for each activity within the PA and administered in-person for a specified period of time.
- 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 7.
- Receive and resolve any complaints, disputes or grievances to the governance or management of the PA according to the grievance redress mechanism given in Appendix 9.

- Conduct periodic monitoring of the megafauna within the PA and physical parameters according to the Environmental Monitoring Plan provided in Appendix 8.
- 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 this PA in the PA website and other social media platforms
- Promote the PA to attract visitors

The PA Management Steering Committee

The Bodufinolhu and Vadinolhu Kandu Olhi Management Steering Committee (hereafter referred to as Steering Committee) will advise the PA Management Unit on implementing the PA management plan on an atoll-level.

1. The Steering Committee should comprise of members representing the following parties, with the number of representatives from each indicated in the brackets:
    - Laamu Atoll Council (1)
    - Representation from PA management unit (1)
    - Representation from tourism sector – guesthouse and resort (2)
    - Representation from a research NGO (2)
    - Representation from a Laamu community NGO (1)
    - Representation from a fisher (1)
    - Representation from dive community (1)
    - Representation from local community (1)
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 on 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 LAC 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 LAC with secretariat services provided by the PA management Unit.
7. The Steering Committee will meet a minimum of twice a year.

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Key Regulations, Policies, Codes of Conduct and Guidance

The Protected Areas Regulation (2018/R-78) is the main guiding regulation for this management plan. Clause 9 of the PA Regulation allows management authority to be assigned to a state institution or other entity by the EPA by mutual agreement.

The Bodufinolhu and Vadinolhu Kandu Olhi PA is designated as a Category 7: Protected Area with Sustainable Use. Hence, the main activities allowed in the area are those relating to recreation. The PA Management Unit should monitor the permitted activities and monitor the impacts on key marine species in the area. 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. Recreational diving: Number of users will be monitored for the first year of management plan implementation. Based on user numbers and types the PA Management Steering Committee will decide on an annual user permit and fees. Appendix 11 gives permit types for consideration.
2. Bait fishing can be done without a permit or fee. Bait fishery will be monitored and if there are negative impacts on the ecological health of the area, the PA Steering Committee may consider limitations such as closed seasons, limiting gear, prohibiting use of lights or issuing permits.
3. Reef fishing: Number of users will be monitored for the first year of management plan implementation. Based on user numbers and types and ecological health of the PA, the PA Management Steering Committee will decide on an annual user permit and fees. Appendix 11 gives permit types for consideration.
4. A permit is required for conducting research in the PA. Appendix 12 provides guidelines for conducting research inside the PA.

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9. 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 11). There are 2 main use zones identified and are shown in Figure 6. The zones with the coordinates and descriptions of activities that are permitted are given in Table 1.

Table 1. Resource Use Zonation for Bodufinolhu and Vadinolhu Kandu Olhi PA

Use zone	Allowed uses
Diving Zone	• Recreational diving
Fishing	• Traditional bait fishery with permit

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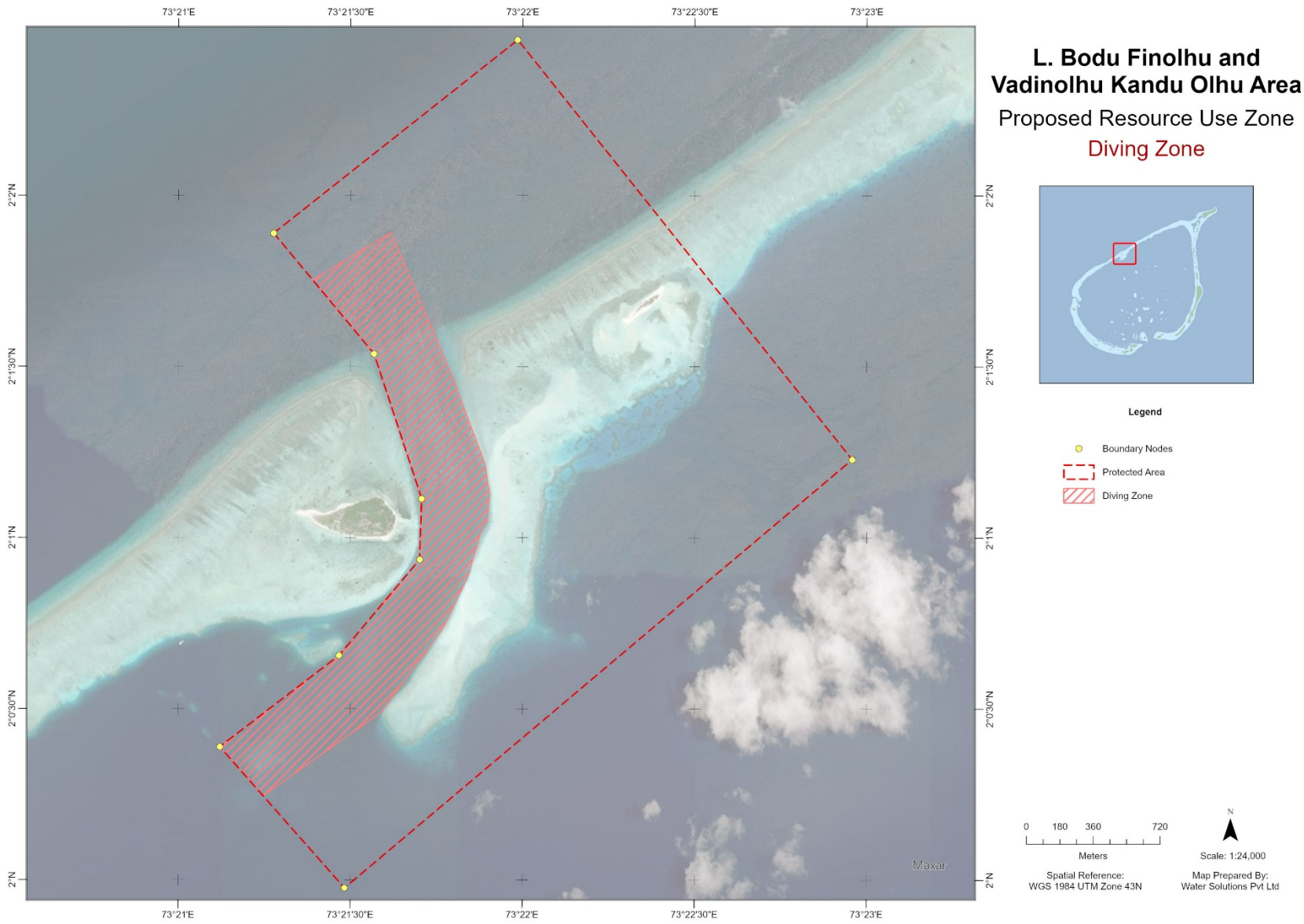

Figure 6: Proposed Resource Use Map

10. Management strategies/Action plans

Table 2 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 unit at site. This includes approval of the management plan and assigning the management authority to LAC 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.

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. Activities for this include developing detailed monitoring protocols and trainings for staff.

Objective 3: Economic

The Bodufinolhu and Vadinolhu Kandu Olhi PA has high fishing intensities of bait fishery, and community members have said that it is the most popular bait fishing spot in the atoll. In addition, bait fishing and reef fishing are carried out. Other types of fishery such as tuna, billfish also take place. This area is also used as a dive site as well. The current level of use for economic purposes is not well monitored. Therefore, the initial year will focus on monitoring the use levels and developing guidelines to ensure activity within the PA does not cause negative impacts on the key species populations within the area. Continued monitoring of user activities as well as key species levels is important.

Table 2: Management Actions for Bodufinolhu and Vadinolhu Kandu Olhi

Objective	Actions	Indicators
Objective 1: By end of 2025, an effective management plan will be implemented with a functioning management unit.	Approve a management plan and sustainable financing plan for the PA	• Management plan approval by EPA/ MoTE • Sustainable financing plan approval by EPA/ MoTE
	Delegate management responsibility to LAC	• MoU between LAC and EPA
	Establish PA management Steering Committee	• Member appointment documents • Minutes of committee meetings
	Establish management unit 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
	Prepare and disseminate information on social, cultural, ecological and economic benefits of PAs to local community and visitors	• Knowledge products
	Develop Limits of Acceptable Change (LAC) for the PA	• Approved LAC by PA Management Steering Committee LAC development report
	PA use compliance monitoring	• Non-compliance and illegal activity reports • Monthly monitoring reports
	Develop management effectiveness monitoring protocols (METT-4)	• Approved management effectiveness monitoring protocols
	Conduct periodic management effectiveness monitoring	• Monitoring reports
	Review management plan	• Approved revised management plan
Objective 2: By the end of 2028, the current levels turtles, sharks, rays, seabirds and other globally endangered species, and general biodiversity within the PA are maintained or improved.	Develop and implement monitoring plan	• PA Monitoring Plan
	Procure equipment for ecological monitoring	• Equipment inventory • Procurement invoices
	Conduct a training on ecological monitoring for relevant staff	• Training completion certificates
	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, By the end of 2028, understand the current levels of tourism and fishery use, and develop and implement appropriate guidelines for sustainable practices.	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 a procedure for monitoring user activities within PA	• Monthly monitoring data • Guidelines on sustainable use of activities within PA
	Monitor and collect data on diving, fishery and travel activity within PA	
	Develop and implement guidelines for user activities within PA	

11. 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 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 activities within the will be carried out by rangers in the PA Management Unit. Rangers will patrol the area as well as attend to reported incidents.
- Rangers can consider the engagement of local stakeholders such as civil society organizations 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 13.
- The PA Management Unit should record and report non-compliance incidences according to guidelines provided in Appendix 7.

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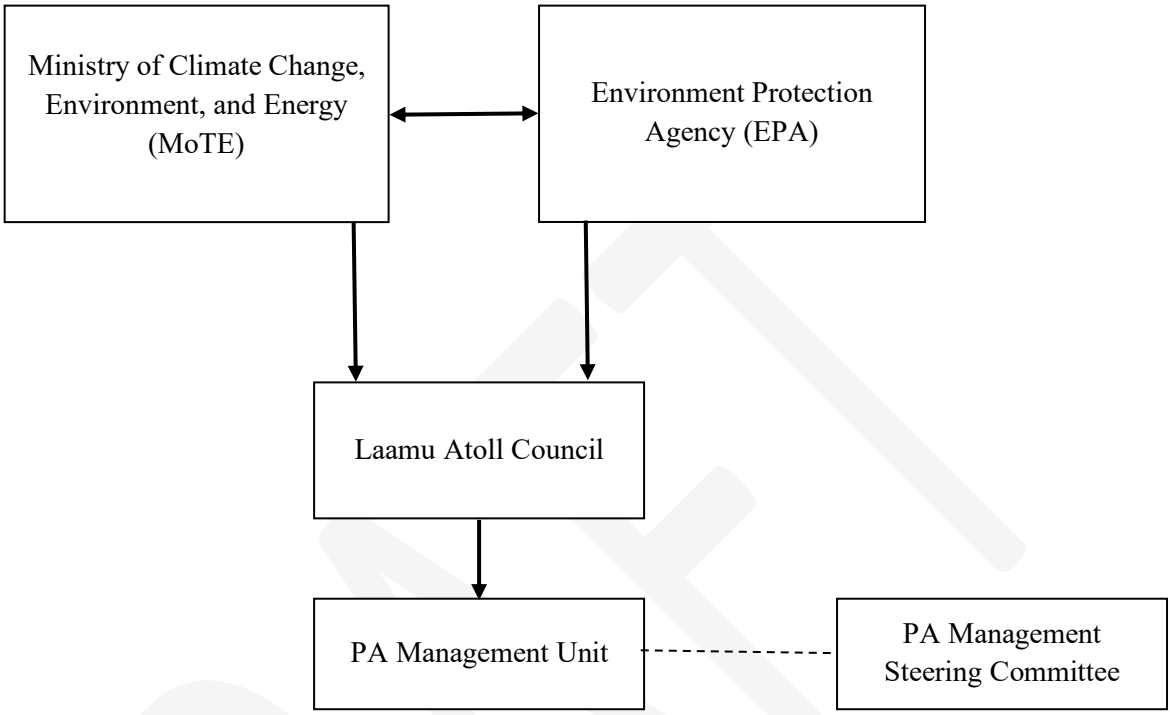
12. Monitoring and evaluation

A work plan with timeline for implementing the management plan is given in Appendix 14. 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 user data. Therefore, initial activities under the management objectives will focus on monitoring activities within the PA.

- Periodic ecological 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 8.
    - The environmental officer and rangers will be initially conducting the ecological monitoring. This will be conducted as per the Monitoring and Research plan developed by the EPA, and under the guidance from EPA.
    - EPA and MoTE will train the environmental officer and rangers at the PA Management Unit to undertake ecological monitoring, analyzing data and producing reports.
    - 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 public and stakeholders.
- Information on activities within the PA are monitored and reported monthly to guide improving management of the PA.
    - Data on diving and fishing, including number of users/boats, user behaviors and non-compliance are collected monthly according to the template given in Appendix 6.
    - Data on research activities and education, awareness and outreach efforts are also reported monthly according to the template given in Appendix 6.
    - Data is collected through patrol by rangers, user 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
    - The PA Management Steering Board shall review annual management and approve annual programs and budgets based on the performance of the PA management
    - METT-4 assessments should be conducted every 5 years
    - Review of the management plan should be done minimum every 2 years

13. Appendices

Appendix 1: Laamu Bodufinolhu and Vadinolhu Kan'du Olhi PA Governance Structure



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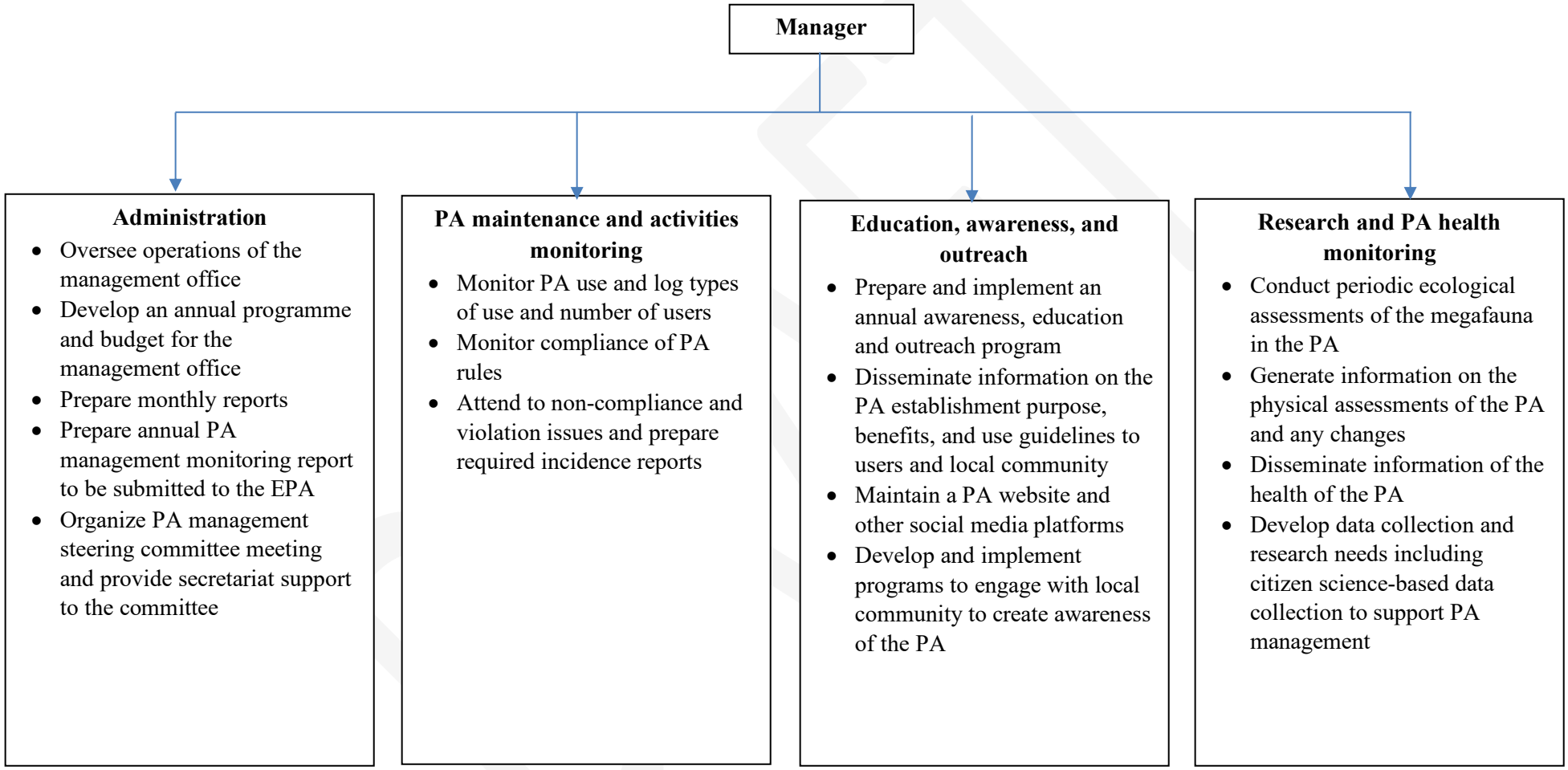
Appendix 2: Functions of the PA Management Unit



Note: Staffing is together for Gaadhoo-Hithadhoo Kandu Olhi and Bodufinolhu and Vadinolhu PAs. In the beginning stage 3 rangers will be hired who will collaborate with the existing Atoll Council staff in implementation.

Staff	**No.**
Senior Ranger	1
Ranger	2

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Appendix 3: Training Requirements for the PA Management Unit

1. 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	
PA financing and accounting							on the job training
Management of PA account	x	x					
Revenue generation and sustainable financing planning	x	x					
Education, awareness and outreach							on the job training
Participatory and rights-based approaches for PA management	x			x			
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		

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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 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
        - Monitoring of fishing and tourism activities within PA
        - 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.

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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

Corse 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	

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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
    - Recreational and fisheries activities done in the PA including number of users/boats
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

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Appendix 6: Monthly data reporting template

Note: Please fill out the sections of this report that are applicable or have relevant updates for this month. If a section does not apply or there have been no changes, it is not necessary to complete it.

Administration

Number of Staff at PA Management office:	
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)**
Annual budget	
External projects	
donations	
Fees or permits	
fines	
Others	

Expense	**Amount (MVR)**
Salaries	
Trainings	
Equipment	
Maintenance	
Consumables	
Others	

PA Use

Number of diver boats:	
Number of divers	
Number of reef fishing boats	

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Number of recreational fishing boats	
Number of bait fishing boats	
Number of dolphin watching cruises	
Other activities	

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 ecological monitoring activities undertaken during reporting period

Date(s)	Monitoring type (e.g. megafauna, grouper, water quality)	Numbers observed	Link to available reports

Research Activities

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

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Appendix 7: 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 Bodufinolhu and Vadinolhu PA Management Unit established within the Laamu Atoll 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 are given below.

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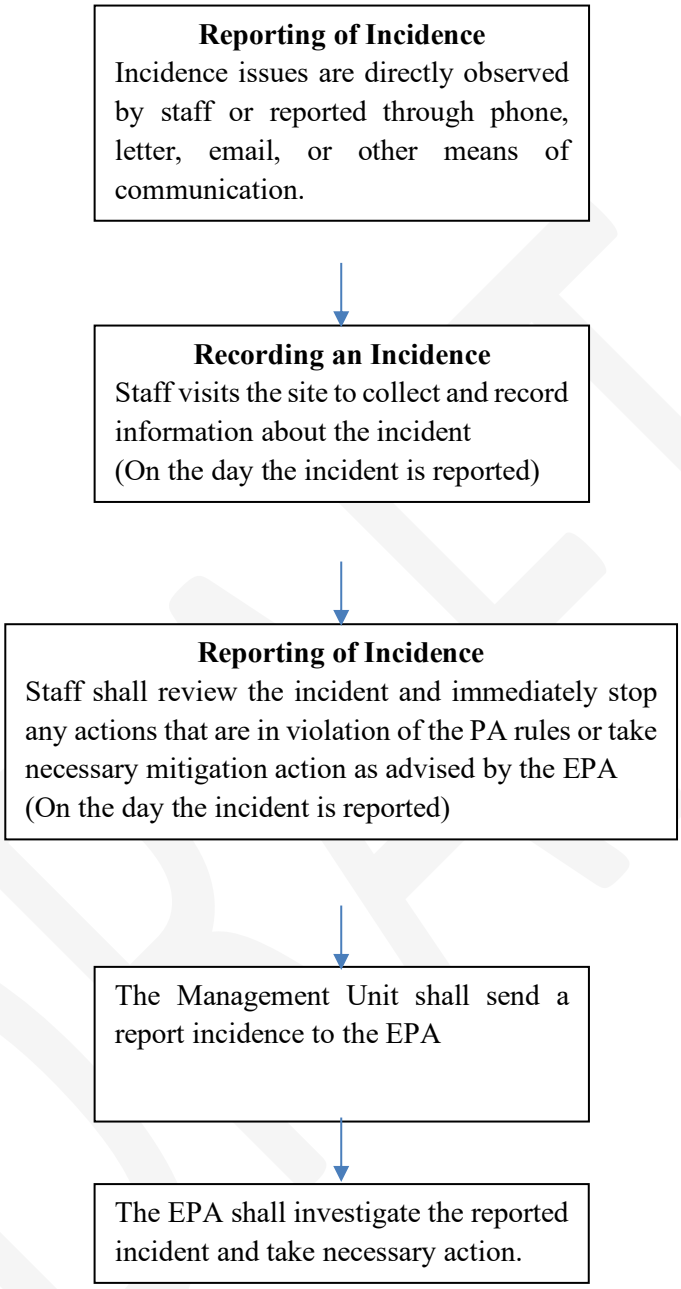
Flow diagram of Incidence Attendance Mechanism



Appendix 8: 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 (special focus on seasonal changes)
Fauna	• Species and composition • Health	Visual surveys	Annually (special focus on seasonal changes)
	• Avifauna species and numbers • Migratory birds	Observations by rangers (In future can develop citizen science reporting)	Continuously and reported in monthly report (special focus on seasonal changes)
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 • Other pollutants	Onsite testing and laboratory testing	Biannually
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 another surface contamination • Others	Observations by rangers	Continuously and reported in monthly report

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Appendix 9: Grievance Redress Mechanism

The PA management Unit shall maintain a registry of grievances and attend to any complaints, disputes or grievances related to the governance or management of the PA. The following provides guidelines for receiving and resolving any complaints, disputes or grievances related to the governance or management of the PA.

1. The PA Management Unit shall have a designated staff member to address all potential complaints, disputes or grievances related to the governance or management of the PA.
2. The PA Management Unit shall maintain a registry of grievances, which will record the details and nature of the complaint, the complainant, the date and actions taken as a result of the investigation. It will also cross-reference any noncompliance report and/or corrective action report or other relevant documentation.
3. The PA Management Unit shall address any grievances in 3 stages (Table 3).The PA Management Unit shall make the grievance redress mechanism publicly available.
4. Any individual or parties (affected person) can report a complaint, dispute or grievance regarding the governance or management of the PA to the PA Management Unit via email, phone, in-person or via the Gan Island Council.
5. The PA Management Unit will lodge the complaint in the grievance registry and resolve the matter in consultation with relevant parties within 7 (seven) days of receiving the report.
6. The PA Management Unit should inform the affected person of the outcome within 7 (seven) days of receiving the report.
7. If the matter is not resolved to the satisfaction of the affected party, then the PA Management Unit should submit the grievance to the PA Management Steering Committee.
8. The PA Management Unit should arrange a meeting of the PA Management Steering Committee to review the matter and the Committee shall come to a decision.
9. The PA Management Steering Committee should inform the affected person of the decision.
10. If the matter is not resolved to the satisfaction of the affected party, the party may take up the matter in the relevant judicial court of the Maldives.

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Table 3. Grievance Redress Mechanism

Stage	Process	Duration
1	Reporting: Affected party reports grievance to PA Management Unit	Anytime
	PA Management Unit lodges the complaint in a registry and reviews and resolves the incident	Within 7 days from reporting
	PA Management Unit informs of outcome to affected party	7 days from reporting
If unresolved go to stage 2		
2	PA Management Unit takes grievance case to the PA Management Steering Committee	8 days from reporting
	PA Management Steering Committee reviews and resolves the grievance	-
	PA Management Unit informs of outcome to affected party	-
If unresolved go to stage 3		
3	PA Management Unit takes grievance case to the EPA/ MoTE	-
	EPA/ MoTE reviews and resolves the grievance	-
	PA Management Unit informs of outcome to affected party	-
If unresolved go to stage 4		
4	If the affected party is not satisfied then the party can take the matter to appropriate courts	As per the judicial systems

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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 asterix (*) can be carried out by special permits.

Activity	Marine Area
Any activities that may cause harm to or alter the PA	X
Littering	X
Using strong lights during nighttime to lure protected species to shallow areas	X
Introduce any new or alien species into the area	X
Feeding the birds, fish and other species present in the area	X
Mining or conducting any research to find gas, oil or minerals	X
Reclamation and dredging	X
Anchoring	X
Infrastructure development	X
Aquaculture/mariculture	X
Sand and coral mining	X
Releasing any pollutants into the reef and placing outfalls	X
Research*	√
Recreational diving*	√
Dolphin watching*	√

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Appendix 11: Guidelines for Access and Other Fees

The following are guidelines for possible fee structures. These will need to be finalized following guidance from the PA Steering Committee. All fees listed are for Maldives residents and work permit holders unless stated otherwise.

No.	Description	Cost (MVR)
1	Entry fee - Dive	100.00
2	Entry fee (Non-Mv) - Dive	200.00
3	Dive fee, Guest House, per year	26,000.00
4	Dive fee, Resort/Safari, per year	70,000.00
5	Dive fee, Guest House, per month	3,000.00
6	Dive fee, Resort/Safari, per month	6,500.00
7	Dive fee, Guest House, per day	350.00
8	Dive fee, resort/safari, per day	500.00
9	Guided tours	2,500.00
10	Guided tours (Non-Mv)	3,500.00
11	Commercial Research License	3,000.00

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 the Council
3. Promotional purposes
4. Researchers with a valid permit
5. Individuals or parties attending trainings or capacity development programs organized by the PA Management Unit.

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Appendix 12: Guideline to conduct research in the Bodufinolhu and Vadinolhu Kan'du Olhi PA

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 EPA's oneGov porta;..
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, which is research being done with the intention of generating revenue for the researching party will incur a fee of MVR 3,000 (three thousand) payable to the PA Management Unit.

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Appendix 13: Penalties for Non-Compliance in Bodufinolhu and Vadinolhu Kan'du Olhi PA

The following penalties will be imposed for violations of the PA rules, regulations and permit conditions at Bodufinolhu and Vadinolhu Kan'du Olhi PA

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 and carrying out activities 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 9 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)

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Appendix 14: A 10-year work plan for management of Bodufinolhu and Vadinolhu Kan'du Olhi PA

Activities	**Responsible**	**Timeline (year)**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Objective 1: By 2025, an effective management plan will be implemented with a functioning management unit.											
Activity 1.1 Approve a management plan and sustainable financing plan for the PA	EPA										
Activity 1.2 Delegate management authority to LAC	EPA/ MoTE										
Activity 1.3 Establish PA Management Steering Committee	LAC										
Activity 1.4 Establish management unit and hire staff	LAC										
Activity 1.5 Develop Standard Operating Procedures (SOP) for PA	PA management unit (council)										
Activity 1.6 Conduct general capacity building trainings for staff	MoTE/ LAC/ EPA										
Activity 1.7 Conduct ranger training	MoTE/ EPA										
Activity 1.8 Develop PA website and social media platforms	PA management unit (council)										
Activity 1.9 Prepare and disseminate information on social, cultural, ecological and economic benefits of PAs to local community and visitors	PA management unit (council)										
Activity 1.10 Develop Limits of Acceptable Change (LAC) for the PA	PA management unit (council)										
Activity 1.11 PA use compliance monitoring	PA management unit (council)										
Activity 1.12 Develop management effectiveness monitoring protocols	PA management unit (council)										
Activity 1.13 Implement visitor activities management and monitoring	PA management unit (council)										

Activity 1.14 Conduct periodic management effectiveness monitoring	MoTE										
Activity 1.14 Review management plan	MoTE										
Objective 2: By the end of 2028, the current levels of turtles, sharks, rays, seabirds and other globally endangered species, and general biodiversity within the PA are maintained or improved.											
Activity 2.1 Develop and implement monitoring plan	PA management unit (council)										
Activity 2.2 Procure equipment for ecological monitoring	LAC										
Activity 2.3 Conduct a training on ecological monitoring for relevant staff	MoTE/ EPA										
Activity 2.4 Continue periodic ecological monitoring of the PA	PA management unit (council)										
Activity 2.5 Disseminate information on health of the PA	PA management unit (council)										
Objective 3: By the end of 2028, By the end of 2028, understand the current levels of tourism and fishery use, and develop and implement appropriate guidelines for sustainable practices.											
Activity 3.1 Measure baseline level of community understanding of PA values	PA management unit (council)										
Activity 3.2 Continue periodic KAP assessment	PA management unit (council)										
Activity 3.3 Develop a procedure for monitoring user activities within PA	PA management unit (council)										
Activity 3.4 Monitor and collect data on diving, fishery and travel activity within PA	PA management unit (council)										
Activity 3.5 Develop and implement guidelines for user activities within PA	PA management unit (council)										

Appendix 15: Financial Plan

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