

# Ocean Country Partnership Programme

## Assessing the Management Effectiveness of three sites in the Maldives: Stakeholder Survey Results

March 2022



**Ministry of Environment,  
Climate Change  
and Technology**

**For further information please contact:**

Joint Nature Conservation Committee  
Monkstone House  
City Road  
Peterborough  
PE1 1JY

<https://jncc.gov.uk/our-work/ocean-country-partnership-programme/>

Communications@jncc.gov.uk

**This report should be cited as:**

Ocean Country Partnership Programme. 2022. Assessing the Management Effectiveness of three sites in the Maldives: Stakeholder Survey Results. 55 pp.

**Acknowledgements:**

The OCPP partners would like to thank the Maldives Government for their expertise and input into the Ocean Country Partnership Programme, and for distributing surveys to potential participants. The OCPP partners would also like to thank survey respondents for their time completing the surveys.

**Evidence Quality Assurance:**

This report is compliant with JNCC's Evidence Quality Assurance Policy  
<https://jncc.gov.uk/about-jncc/corporate-information/evidence-quality-assurance/>

# Executive Summary

The Ocean Country Partnership Programme (OCPP), a UK Government-led programme, was invited to collaborate with the Government of the Maldives to explore opportunities to support effective management of their marine environment. An aim of the project was to complete Protected Area Management Effectiveness (PAME) assessments to evaluate the management effectiveness of three sites with differing designations and management strategies. These sites were Hanifaru Area MPA – an UNESCO World Biosphere Reserve, Angsana Velavaru – a house reef currently being considered as an Other Effective Area-based Measurement (OECM), and Kudahuvadhuo Kandulhi – a protected grouper spawning site.

Stakeholder engagement is essential to the PAME assessment process, ensuring that the assessments reflect a wide range of views on management and provide impartial results. In order to capture information required from stakeholders to complete the PAME assessments, four surveys were developed, tailored to different stakeholder groups: fisheries and tourism personnel, NGOs and researchers, MPA managers and marine enforcers, and local government. Surveys were designed online using SmartSurvey. Potential survey respondents were contacted directly by email, and the Maldives Government advertised surveys on social media. There were 15 survey responses in total: eight from fisheries and tourism personnel, one from an MPA manager/enforcer, and six from NGOs/researchers. No responses were received from local government. Several recommendations were noted to improve participation by stakeholders in any future stakeholder surveys, such as by advertising the surveys more widely, and extending the time the survey was live for.

Twelve respondents completed the survey for Hanifaru Area MPA. The majority of respondents believed that more could be done to address threats within the MPA, particularly as a result of pressure from tourism. Survey respondents were aware of rules and regulations in place that control access to or activities within the Hanifaru Area MPA, but most respondents believed that these were difficult to enforce, and that more people were needed to manage the MPA. Most respondents also expressed that they were not involved in making decisions related to the site. Five respondents, all associated with tourism, believed that the MPA had benefited their livelihoods, and it was highlighted that many resorts support restrictions in Hanifaru Area MPA.

Most of the five respondents that completed the survey for Angsana Velavaru House Reef, believed that threats to the site were not being properly addressed. Respondents were generally aware that fishing was prohibited. However, most respondents believed that more people were needed to manage the site, and that managers could not enforce site legislation when needed due to lack of authority. Stakeholders from the different sectors differed in their opinions on their level of involvement in making decisions related to the site. The tourism respondents believed that Angsana Velavaru had benefited the livelihoods of local communities, including through job creation.

One respondent completed the survey for Kudahuvadhuo Kandulhi. The response was considered in the PAME assessments, however due to the sample size, results are not provided in this report.

Survey responses were combined with additional information to complete a PAME assessment for each of the three protected sites, and overall findings will be communicated to stakeholders in due course. Further information is available at <https://jncc.gov.uk/our-work/maldives/>

# Table of Contents

<b>Executive Summary</b> .....	<b>3</b>
<b>Table of Contents</b> .....	<b>5</b>
<b>1 Background</b> .....	<b>6</b>
1.1 PAME Assessments	6
1.2 Survey Aims	7
<b>2 Study Sites</b> .....	<b>8</b>
2.1 Hanifaru Area	8
2.2 Angsana Velavaru	8
2.3 Kudahuvadhoo Kanduoilhi	9
<b>3 Methods</b> .....	<b>10</b>
3.1 Stakeholder Groups	10
3.2 Survey Design	10
3.3 Survey Distribution and Data Collation	10
<b>4 Summarised Responses</b> .....	<b>11</b>
4.1 Hanifaru Area	11
4.2 Angsana Velavaru	16
4.3 Kudahuvadhoo Kanduoilhi	19
<b>5. Recommendations and Next Steps</b> .....	<b>20</b>
<b>References</b> .....	<b>21</b>
<b>Appendix 1: Survey Questions</b> .....	<b>22</b>
Appendix 1.1 PAME Survey Questions asked to the Fisheries and Tourism sector	23
Appendix 1.2 PAME Survey Questions asked to MPA Managers and Marine Enforcers	33
Appendix 1.3 PAME Survey Questions asked to NGOs and Researchers	42
Appendix 1.4 PAME Survey Questions asked to Local Government	53

# 1 Background

The Republic of Maldives is known for its rich marine environment and is home to a range of habitats including mangroves, seagrass meadows and coral reefs. These habitats are integral to Maldives' two major industries of fisheries and tourism, and provide food security, employment, foreign income, and recreation. In efforts to protect the marine environment, the Maldives has implemented a Marine Protected Area (MPA) network, consisting of officially designated sites (including an UNESCO Biosphere Reserve), informal protected areas, and areas protected through fisheries' legislation.

The Ocean Country Partnership Programme (OCP) is a UK Government-led programme, being delivered under the Blue Planet Fund and supported in the UK by the Joint Nature Conservation Committee (JNCC), the Marine Management Organisation (MMO) and the Centre for Environment, Fisheries and Aquaculture (Cefas). The OCP was invited to collaborate with the Government of the Maldives to explore opportunities to support effective management of their marine environment. The partnership is consequently providing demand-led technical assistance to support the Maldives MPA network, with an emphasis on improving governance and stewardship, and alleviating poverty through supporting jobs in sustainable tourism.

Working in partnership with the Maldives Government, the OCP will be undertaking a number of activities in furthering MPA compliance, monitoring and enforcement strategies. In the first year of the OCP, a pilot project looking at MPA management and effectiveness was undertaken. Protected Area Management Effectiveness (PAME) assessments of three protected areas in the Maldives were completed, with the aim of better understanding how these protected areas function, determining how well they are being managed, and providing recommendations on how management could be improved.

## 1.1 PAME Assessments

After designating an MPA and developing a management plan, it is important to measure and understand the impact of management actions on an MPA's values, and track progress towards achievement of the MPA's goals and objectives. A PAME assessment is generally completed by evaluating a series of criteria against agreed objectives or standards. The results of a PAME assessment can help MPA managers to document achievements, set new priorities to improve future management and inform effective resource allocation, as part of an adaptive management approach. The sharing of information while completing PAME assessments can help build support and trust within the community and other stakeholder groups.

International reporting on the management effectiveness of protected areas is becoming increasingly common. The Management Effectiveness Tracking Tool (METT) is the most widely used PAME methodology, and contracting parties to the Convention on Biological Diversity (CBD) are encouraged to use it for consistency. The fourth version of the METT (METT-4) is based in Excel, and consists of a data sheet to record key information about the MPA, and a series of questions in which answers are scored. The METT-4 is considered useful at measuring management effectiveness of a protected area over time. As the tool predominantly relies on assessors' judgements, it is most effective when a range of stakeholders can input into the assessment. Stakeholder engagement is essential to the PAME assessment process, ensuring that the assessments reflect a wide range of views on management and provide impartial results.

## 1.2 Survey Aims

The aim of the surveys was to support the pilot OCPP project in the Maldives through the completion of three PAME assessments using the METT-4 tool, by providing an opportunity for stakeholders to contribute their knowledge and views on the management of three sites. Ideally face to face stakeholder engagement would be undertaken as part of the PAME process, however, due to travel constraints associated with the COVID-19 pandemic, online surveys were designed to capture the specific information required to help answer the METT-4 questions. Stakeholder validation workshops are being planned for a later date to allow stakeholders the opportunity to review and feed into the PAME results and recommendations.

## 2 Study Sites

Three sites with differing designations and management strategies in the Maldives were selected for the PAME assessment and surveys: Hanifaru Area MPA, Angsana Velavaru house reef and Kudahuvadho Kanduolhi grouper aggregation spawning site.

### 2.1 Hanifaru Area

Hanifaru is an uninhabited island situated within the Baa Atoll, in the central western section of the Maldives. The island has an enclosed channel-like bay, approximately the size of a football field, known locally as 'Vandhumaafaru Adi' or Hanifaru Area.

Winds and currents, which increase in intensity during the southwest monsoon season, funnel large amounts of zooplankton into the bay, which attracts an abundance of whale sharks, manta rays, and devil rays (Murray 2013). The bay is also a nursery ground for nurse sharks, and one of the few known places where whale sharks congregate to mate. As a result of this high productivity and presence of megafauna, the site is a popular tourism destination and has high economic value. In 2009, the direct value of biodiversity nationally accounted for 89% of the Maldives Gross Domestic Product (GDP), and in Baa Atoll it provided 47% of all employment and engaged 61% of the population in work (AEC 2012, Emerton *et al.* 2009).

The significance of Hanifaru Area ecologically and economically cannot be overstated, so much so that in 2009 the six resort islands of Baa Atoll came together and signed a memorandum of understanding to manage the site and protect it from any future degradation (Brooks 2010, Annex 1). In 2009 Hanifaru Area was designated as an MPA under Government Directive 133-EE/2009/19 (Brooks 2010, Annex 2), specifically due to the aggregation of whale sharks. The MPA is 11.6 km<sup>2</sup> in size and the main goals are to ensure the long-term conservation of the wider ecosystems and to generate income for people on local islands (UNEP-WCMC 2022).

In 2011, the wider Baa Atoll was also designated as an UNESCO World Biosphere Reserve, which aims to promote conservation, sustainable development and education/research. UNESCO World Biosphere Reserves have three zones: core protected areas, buffer zones, and a transition area where people live and work, which can be used for testing out approaches to sustainable development.

Hanifaru Area is a core zone of the Biosphere Reserve, and there are a range of restrictions in place to manage the impact of activities on the site. Activities such as scuba diving and fishing are prohibited, the number of vessels within the MPA is limited to five, and vessels are only permitted to anchor on designating mooring spots. The number of tourists allowed inside the bay is limited to 80 (Government Directive 133-EE/2009/19), and no person entering the water is allowed to disturb whale sharks or manta rays (Brooks 2010). The site is managed locally, with rangers present on site to ensure compliance with the restrictions.

### 2.2 Angsana Velavaru

Angsana Velavaru is a five-star resort situated in Dhaalu Atoll (also known as South Nilandhe Atoll) in the western section of the Maldives. The resort house reef is located 1 km from the main island and encompasses outer and inner atoll areas and two channels that connect the atoll lagoon to the open ocean. The diverse reef environment attracts a range of marine life,

including silky sharks, black tip reef sharks, eagle rays, and turtles. Inside the reef is a large sandy lagoon area, which acts as a shark nursery area and a foraging habitat for many ray species (IUCN and USAID unpublished).

Angsana Velavaru house reef (referred to as Angsana Velavaru here after) is designated as a 'no take' zone under the Tourism Boundary Regulation (Reg. No. 2012/R-7) and is currently being considered for classification as an Other Effective Area Conservation Measure (OECM). The site protects an area of 0.65 km<sup>2</sup> with a core zone where strict restrictions are in place to protect the ecosystem, including prohibitions on all extractive activities such as fishing and mining of sand. A buffer zone borders the core zone to allow for ecologically compatible activities. Angsana Velavaru is managed by resort staff including a marine team that undertake research and monitoring activities.

### **2.3 Kudahuvadho Kanduolhi**

Kudahuvadho Kanduolhi is a protected grouper spawning aggregation site situated in the south of Dhaalu Atoll next to Kudahuvadho Island, the atoll capital. The site covers an area of 7.4 km<sup>2</sup> within an open channel between the atoll and open ocean. The site was originally designated in 2013 under the Regulation on Grouper Fishing and Exporting Groupers from the Maldives (Reg. No.2013/R-41) (Ministry of Fisheries, Marine Resources and Agriculture, 2020). This regulation has since been replaced by the Fisheries Act of the Maldives Law No.14/2019 and management of the site is delivered in accordance with the Regulation on Grouper Fishery Management (Reg No:2022/R-2), led by the Ministry of Fisheries, Marine Resources and Agriculture (MoFMRA).

Groupers are highly valued in the Maldives due to the specialised export-based grouper fishery, where live groupers are exported to East and Southeast Asian markets. In efforts to protect grouper populations in the Maldives and promote a sustainable grouper fishery, Kudahuvadho Kanduolhi alongside four other grouper aggregation sites were established to protect mature spawning grouper (family Serranidae, subfamily Epinephelinae) from removal and disturbance. Groupers tend to spawn in aggregations over a period of several weeks to several months during a full or new moon and are thought to return to the same spawning site (Sattar *et al.*, 2011). This behaviour makes them highly susceptible to fishing pressure, as large quantities of mature groupers can be removed rapidly when fishing activities target aggregation sites. The species are also vulnerable to over exploitation as they are long-lived, have a late age-at-maturity, and many species are protogynous hermaphrodites (beginning life as females, and changing into males at a later stage). The following activities are prohibited at the site: all fishing activities except trolling, anchoring, mining for or removal of sand, coral and stone, introduction of new species, fish feeding and aquaculture (MoFMRA, 2020). Several activities are also prohibited during the grouper spawning aggregation period, including diving and snorkelling, water sports activities that use motorised crafts, and use of lights to attract fish for any purpose (MoFMRA, 2020).

## **3 Methods**

### **3.1 Stakeholder Groups**

Four key stakeholder groups were identified to help assess the management effectiveness of Hanifaru Area, Angsana Velavaru and Kudahuvadhoo Kanduolhi in the Maldives.

These stakeholder groups were:

- Fisheries and tourism personnel – to provide on-the-ground knowledge of human activities and the status of marine biodiversity;
- NGOs and researchers – to provide insights into conservation, education and research, including knowledge on specific sites, marine life, and management of human activities;
- MPA managers and marine enforcers – to provide on-the-ground knowledge on the feasibility of managing and enforcing human activities; and
- Local government – to provide knowledge of site governance.

The stakeholder groups were therefore considered as potential survey respondents in the survey design.

### **3.2 Survey Design**

Surveys were designed to capture information required by the METT-4 PAME assessment. As questions in the METT-4 were not applicable to all stakeholder groups, a focused survey was created for each stakeholder group (Appendix 1). This ensured that questions were appropriate and tailored to each stakeholder group's knowledge and experience. Fisheries and tourism personnel, MPA managers and enforcers, and local government could all potentially work at one or more sites, so the survey was designed for stakeholders to complete questions for each site according to their expertise. NGOs and researchers were considered as potentially having a wider understanding of the region, and so all three sites were included in the survey design. The surveys were created online as a series of questions with multiple choice answers and free text comments boxes, using the digital survey platform SmartSurvey. The surveys were all provided in English.

### **3.3 Survey Distribution and Data Collation**

Key stakeholders for each site were contacted directly by email, and the surveys were also advertised on social media by the Maldives Government to provide opportunities for wider community input. Respondents completed the surveys online via SmartSurvey between the survey open dates: 31<sup>st</sup> January to 14<sup>th</sup> February 2022. The survey window was short due to the wider time constraints around completing the pilot PAME assessments, however, if surveys were to be run again, we would recommend a longer period to comment. Completed surveys were received by JNCC directly through SmartSurvey. Responses to each question were then collated for each stakeholder group and summarised for each site.

## 4 Summarised Responses

Fifteen responses to surveys were received in total: eight from fisheries and tourism personnel, one from MPA managers and enforcers, and six from NGOs and researchers. No responses were received from local government. Some respondents completed the survey for more than one MPA, so in total we received 17 responses in relation to Hanifaru Area and Angsana Velavaru, and one in relation to Kudahuvadhoo Kandulhi. The results are summarised below for Hanifaru Area and Angsana Velavaru; results could not be reported on for Kudahuvadhoo Kandulhi due to the small sample size.

### 4.1 Hanifaru Area

Twelve people, including one MPA manager, five NGOs and researchers, and six fisheries and tourism personnel (one in fisheries and five in tourism), responded to the survey to help assess the management effectiveness of Hanifaru Area MPA.

#### 4.1.1 Goals and objectives of the MPA

The majority of survey respondents knew or 'mostly' knew the goals of the MPA, but most believed that more action needs to be taken to achieve these goals. One respondent did not know the goals of the MPA. Concern was raised about tourism pressures in Hanifaru Area and the surrounding region. It was noted that rules and regulations are not always adhered to, and that greater support is required to enforce regulations. However, three respondents did believe that enough was being done to achieve the goals of the MPA, with one respondent noting that rangers are present to enforce regulations when manta rays are within the site. These findings highlight that efforts are being taken to protect the site, however threats still remain.

#### 4.1.2 Threats to the environment

Stakeholders identified a range of threats to the Hanifaru Area MPA, with pollution and inadequate enforcement of regulations mentioned the most frequently (Figure 1). The threat considered to be the most severe differed among stakeholder groups; for example, NGOs and researchers identified tourism as the main threat, while fisheries and tourism personnel identified boat traffic as the main threat.



**Figure 1.** Phrase cloud showing threats to Hanifaru MPA as identified by survey respondents, with words and phrases most frequently mentioned in larger text (created using wordclouds.co.uk).

### 4.1.3 Management of threats

Overall, stakeholders had relatively negative views on whether the threats they identified were being properly addressed in Hanifaru Area MPA. Only two respondents believed that threats were being addressed, with one stating that the MPA is well managed by UNESCO Biosphere Rangers monitoring tourist numbers. However, one respondent believed that threats were only in part being addressed, five were unsure, and four believed that threats were not being addressed.

The following suggestions were made to improve management of threats:

- Make codes of conduct common practise for all operators;
- Limit and control boat traffic (including implementing 'highways' for faster boat traffic outside the bounds of the MPA);
- Enforce regulations and put penalties in place for those that break the rules;
- Reduce the number of visitors in the bay;
- Require visitors to prove proficiency in swimming;
- Improve regulations for plastic pollution;
- Increase ranger presence to monitor guests and guides;
- Review the ratio of access given to resorts, liveaboards and guest houses;
- Halt development of tourist beds after the significant development in recent years; and
- Conduct more research to understand the threats posed by development/habitat degradation, climate change and noise pollution.

All survey respondents agreed that there is a system in place to manage activities in the Hanifaru Area MPA. However, views on whether the system was effective were highly variable

among stakeholders. Respondents highlighted that regulations are difficult to enforce with such a small team of Rangers, that Rangers should be given more support, and that enforcement is placed on tour operators who often do not have recognised authority.

#### **4.1.4 Awareness of site regulations**

All survey respondents were aware of the rules and regulations in place that control access to, or activities within, the Hanifaru Area MPA. Most respondents had knowledge of the MPA boundary and noted several rules including access limits, controls on distance and interaction with megafauna, and the zonation system with varying levels of protection. However, one respondent stated that controls on distance and interaction with megafauna were difficult to control with so many people and boats. One respondent did not know where the MPA boundary was located and suggested that SMART systems should be used to identify the site.

#### **4.1.5 Resource availability**

Opinions on whether there were enough people to manage Hanifaru Area MPA were highly varied among survey respondents. One respondent noted that enforcers are responsible for many areas in Baa Atoll and so must spread themselves thinly. Seven respondents believed that marine enforcement officers had the skills and knowledge to manage the MPA, and the remaining respondents did not. Respondents noted that staff do not have working conditions that prioritised their safety or supported them financially.

Stakeholder views varied on whether marine enforcement officers could enforce MPA legislation when needed. Six respondents believed they could, four respondents were unsure, and two respondents did not believe they could. Survey respondents expressed the following recommendations:

- Increase staff numbers and wages, and increase resource availability to support enforcement;
- Allow enforcement officers greater independence for decision making;
- Provide more support to Rangers through regular training sessions and meetings with stakeholders, to provide site updates as well as discuss and prioritise actions to address concerns;
- Improve technology; and
- Increase the presence of marine enforcement officers in Hanifaru Area to protect both wildlife and visitors.

Ten survey respondents believed that visitor facilities and services at the MPA were adequate. One respondent stated that mooring lines are always installed and maintained, and that guidance is given by rangers to all operators entering the bay. However, the respondent also noted that greater emphasis is required on sustainable tourism and in-water interactions.

#### **4.1.6 Stakeholder involvement and engagement**

Stakeholders differed in opinions on their involvement with the MPA. One respondent strongly agreed that during the MPA planning stages, members of the local community were consulted on the location and potential uses of the MPA before designation, and that the local community have an input into decisions on managing the MPA. Only one respondent (who was associated with fisheries and tourism) felt they were consulted on the location of the MPA and its uses,

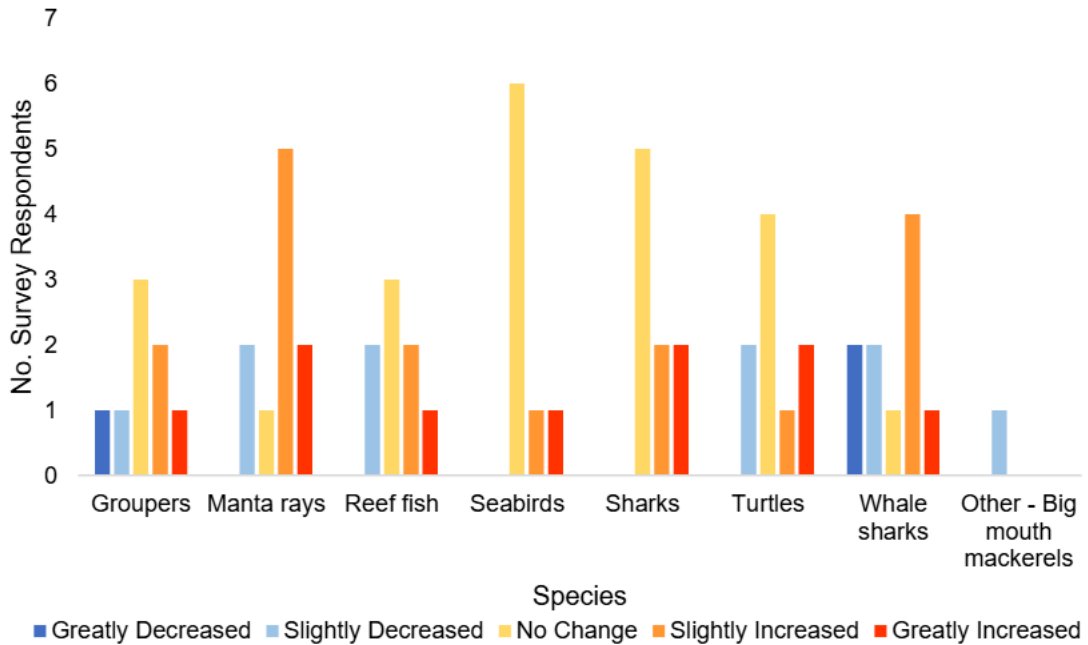
while two respondents disagreed and six did not believe the question applied to them. Additionally, only one respondent (an NGO/researcher) believed that they have an input into decisions on managing the MPA, whereas two strongly disagreed, six disagreed, and two respondents did not think the question on involvement in decision-making applied to them. These findings indicate that many stakeholders do not believe they can contribute to making decisions related to the MPA.

Despite this, the majority of respondents from each stakeholder group strongly agreed or agreed that there is open communication and trust between the community and MPA managers. One respondent added that although there is open communication, the local community should be given the opportunity to enjoy the site and receive education on the importance of it, and that their thoughts and concerns about the site should be considered. Four respondents disagreed that there is open communication and trust between the community and MPA managers.

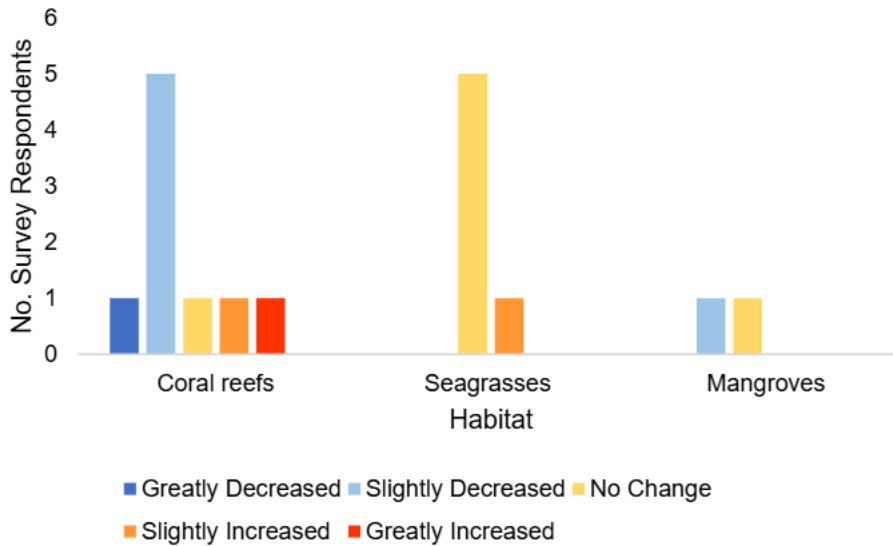
Respondents associated with fisheries and tourism had mixed views on cooperation between MPA managers and tour operators. One respondent stated that although guides report unusual activity in the MPA and enforce protocols, not all guides are giving adequate briefings to explain possible dangerous scenarios for guests and wildlife.

#### **4.1.7 Condition of species and habitats**

Stakeholders had very mixed opinions on whether the quality/abundance of important species and habitats had changed over the last five years at Hanifaru Area (Figure 2 and Figure 3 respectively). However, all respondents believed that the quality/abundance of seabirds and sharks had increased or not changed (Figure 2), and the majority of respondents believed that the quality/abundance of coral reefs had decreased and the quality/abundance of seagrasses had not changed (Figure 3). Respondents recorded 'N/A' ('not applicable') when they had no knowledge on the status of the species and/or when the species or habitat was not relevant to the site.



**Figure 2.** Number of survey respondents that believed particular species decreased, not changed, or increased in quality/abundance over the last five years in Hanifaru Bay.



**Figure 3.** Number of survey respondents that believed particular habitats had decreased, not changed, or increased in quality/abundance over the last five years in Hanifaru Bay.

#### 4.1.8 Livelihood benefits

Five respondents, all associated with tourism, believed that their livelihoods had benefited from the MPA. It was highlighted that many resorts support restrictions in Hanifaru Area MPA, as the restrictions reduce overcrowding. However, it was noted that more education could enable local communities to understand the link between tourism and personal income.

## 4.2 Angsana Velavaru

Three NGOs/researchers and two tourism personnel responded to the survey to help assess the management effectiveness of Angsana Velavaru.

### 4.2.1 Goals and objectives of the MPA

Three of the five survey respondents knew the goals of Angsana Velavaru, with one respondent noting that it is a no-take fishing area. Four respondents believed that more could be done to achieve the goals of the site, with respondents stating that issues arise from lack of enforcement and fishing at night on the reef, and that more awareness is needed about protected sites. One respondent did believe enough is being done to achieve the goals of the site, noting that the resort has a marine lab, works with the local communities, hires a lot of people from local communities, establishes education programmes in local communities, conducts annual reef monitoring and actively conserves, manages and restores the reef. However, the respondent also noted the need for greater awareness and support from local government to support enforcement.

### 4.2.2 Threats to the environment

Stakeholders identified a range of threats to Angsana Velavaru, with the most common threats including fishing, climate change, outbreaks from corallivorous starfish (e.g. Crown of Thorns and Pin Cushion starfish), and lack of awareness of the site by local communities (Figure 4).



**Figure 4.** Phrase cloud showing threats to Angsana Velavaru house reef as identified by survey respondents, with words and phrases most frequently mentioned in larger text (created using wordclouds.co.uk).

### 4.2.3 Management of threats

Stakeholders mostly believed the threats they had identified were not being properly addressed. Respondents commented that the global threats faced by protected resort house reefs (e.g.

climate change) are difficult to control, but that minimising local impacts improves reef resilience. One respondent believed that enforcing fishing regulations was the biggest challenge for resort house reefs due to a lack of authority and risk of conflict. A second respondent also noted the difficulty of businesses managing natural resources, stating there are potential conflicts between businesses and local communities. Suggestions to better address threats included raising awareness, enhancing management presence on local islands, and implementing rules and regulations.

Only one survey respondent believed that there was an effective system in place to manage activities at Angsana Velavaru. They stated that tour operators provide education programmes, marine orientations and checks, and that a Marine Lab with dedicated personnel manages marine resources. However, the respondent also noted a lack of any other management outside of the hotel and stated that enforcement is placed on operators who often do not have recognised authority when trying to manage or enforce the site. The remaining survey respondents believed that no system was in place or did not know if a system was in place.

#### **4.2.4 Awareness of site regulations**

Three respondents were aware of rules and regulations in place that control access to or activities within Angsana Velavaru. They added that fishing is prohibited, and that access to the reef for locals is restricted alongside fishing (with restrictions in place 200 m from the reef).

Both tourism respondents knew the location of the protected site boundaries. However, one respondent noted that the boundary isn't clearly communicated, and there is confusion as to whether the standard resort boundary is 200 m from the shoreline or from the reef. They also noted that with more resorts, it would be beneficial to clarify the extent of protected site boundaries.

#### **4.2.5 Resource availability**

Eighty percent of respondents believed that there are not enough people to manage Angsana Velavaru. Thoughts on whether marine enforcement officers possessed the necessary knowledge and skills to manage the protected site were varied, with one respondent believing they did have the skills to manage the area, and two believing they did not. One respondent commented that putting enforcement on private businesses, with limited power or influence, may not result in effective management without buy-in from local island communities.

Stakeholder views were relatively negative on whether marine enforcement officers could enforce site legislation when needed. Two respondents believed they could not, noting that any resort protected area lacks the authority to enforce government legislation, and that previous enforcement attempts by business has resulted in threats of violence. Additional information provided by the survey revealed that staff may experience safety issues, as conflicts arise when illegal activity takes place. One respondent said that management staff can enforce the legislation depending on the situation, and the remainder of respondents were unsure whether marine enforcement officers are able to enforce legislation. To improve enforcement (and safety), it was suggested that legislation should be enforced by official government representatives/marine police.

Half of the survey respondents believed that the visitor facilities and services at the protected site were adequate. One respondent disagreed, and one respondent did not believe the question on visitor facilities applied to them.

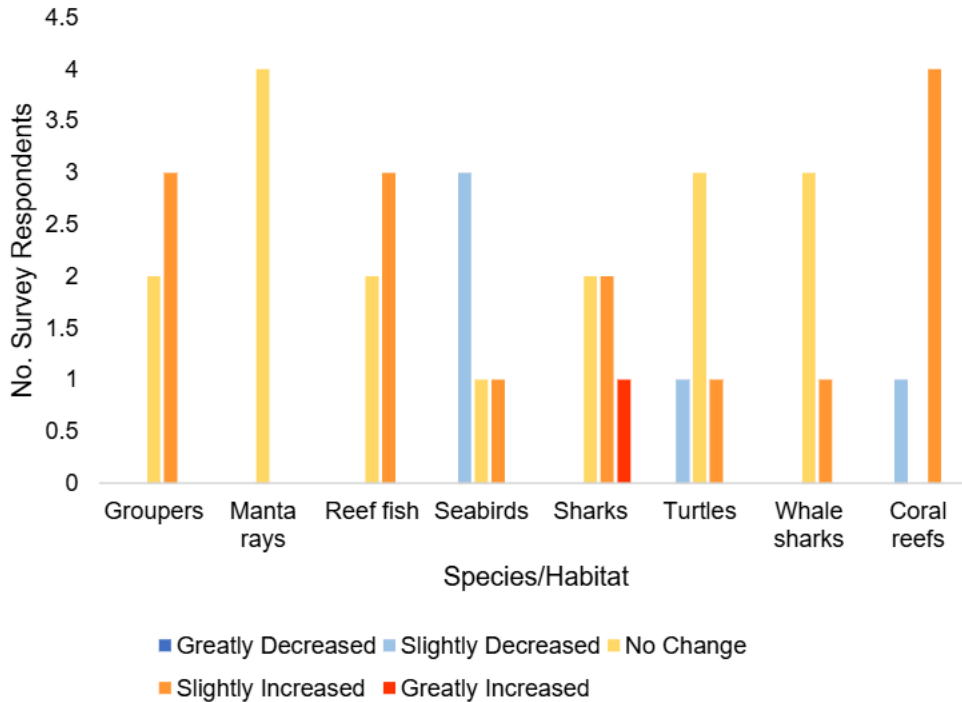
#### **4.2.6 Stakeholder involvement and engagement**

Stakeholders within each group differed in their opinions on how involved they are in making decisions related to the site. Only one respondent strongly agreed that they were consulted on the location and potential uses of the site before its designation, and the same respondent strongly agreed that they have an input into management decisions of the site. The remaining respondents disagreed or did not believe the questions on their involvement in decision-making applied to them.

Views were generally negative on communication and trust between site managers and the community, with only one respondent believing that there was open communication and trust. Respondents associated with tourism also did not believe that there was good cooperation between site managers and tour operators, noting that they are unhappy with their level of participation in management of the area. One respondent stated that support was needed at the local government level to ensure no-take reserves are enforced.

#### **4.2.7 Condition of species and habitats**

Stakeholders had generally positive opinions about the change in quality/abundance of important species and habitats over the last five years at Angsana Velavaru (Figure 5). Groupers, manta rays, reef fish, sharks and whale sharks were all considered to have remained the same or increased in quality/abundance (Figure 5). The majority of survey respondents also believed that coral reefs had slightly increased in quality/abundance.



**Figure 5.** Number of survey respondents that believed particular species and habitats had decreased, not changed, or increased in quality/abundance over the last five years at Angsana Velavaru.

#### 4.2.8 Livelihood benefits

Respondents associated with tourism believed that the site has benefited their livelihoods. One respondent stated that the site, and reef on which it depends, had created jobs within local communities (including 80% of local staff on Velavaru). The respondent noted that these benefits are often overlooked when evaluating an MPA, with the removal of fishing rights often viewed as a greater issue despite limited revenue in a relatively small area.

#### 4.3 Kudahuvadho Kanduolhi

Only one respondent completed the survey on the management effectiveness of Kudahuvadho Kanduolhi grouper spawning site. Due to the small sample size, the results are not included within this report.

## 5. Recommendations and Next Steps

A challenge associated with this survey was engaging stakeholders in a purely virtual format. Ideally, in-person workshops would have taken place alongside online surveys which would have allowed for focused engagement with local communities of each site and encouraged survey responses from all stakeholder groups, providing a more representative sample. However, this was not possible due to Covid restrictions at the time.

Response levels to the surveys were relatively low, particularly for the MPA management and local government sectors. Social media (Maldives Government-MoECCT Facebook account) was used to advertise the surveys to the wider public. The virtual nature of the surveys excluded those without access to the internet or who did not follow the Maldives Government's social media accounts. To improve the number and variety of survey respondents and maximise engagement, a broader advertising campaign could be used in the future including using a range of media platforms. More active promotion of the surveys is recommended among the public through social media, websites, mailing lists and other outreach channels (for example posters at the resorts). Public engagement could also be improved by introducing the concept of PAME to the public prior to survey release. OCPP partners could develop communications materials to introduce the PAME, why it was important for stakeholders to participate in the survey, and how their information would be used. This would augment interest and prepare participants with both the context and purpose of the surveys.

Time was certainly a factor in response levels, ideally the promotion of the surveys and the timeframe participants had to fill them in would have been greatly increased to allow information on the surveys to spread via word of mouth, as well as virtually. Finally, having the surveys available in Dhivehi, and other commonly used languages, would have improved inclusivity and should be considered in the future.

Survey responses have contributed to the METT-4 assessment for each site, to help identify management successes and areas of improvement. Once assessments are complete workshops will be arranged for each site to allow stakeholders to review and verify the results. Following the verification of results, a final report will be published for each site and any recommendations made will be reviewed by the Maldives Government to plan future actions.

# References

AEC. 2012. Atoll Ecosystem-based Conservation of Globally Significant Biological Diversity in the Maldives' Baa Atoll – GEF Project. (MDV/02/G31). Terminal Evaluation Report. 76pp.

Brooks, K. 2010. Investigating Tourism at Hanifaru Bay Marine Protected Area, Maldives. Doctoral dissertation, MSc Thesis for University of York. Available at: <https://www.cms.int/sites/default/files/publication/%27Investigating%20Tourism%20at%20Hanifaru%20Bay%20marine%20protected%20area%2C%20Maldives%27%20Katie%20Brooks%20%282010%29.pdf> [Accessed 15 March 2022].

Emerton, L., Baig, S., and Saleem, M. 2009. Valuing Biodiversity. The economic case for biodiversity conservation in the Maldives. AEC Project, Ministry of Housing, Transport and Environment, Government of Maldives and UNDP Maldives. Available at: [https://www.iucn.org/sites/dev/files/import/downloads/the\\_economic\\_case\\_for\\_biodiversity\\_in\\_the\\_maldives.pdf](https://www.iucn.org/sites/dev/files/import/downloads/the_economic_case_for_biodiversity_in_the_maldives.pdf) [Accessed 15 March 2022].

IUCN and USAID. Unpublished report. Core Zone. Angsana Velavaru. Report 6pp.

MoFMRA. 2020. Maldives Grouper Management Plan. Ministry of Fisheries, Marine Resources and Agriculture. Malé, Maldives.

Murray, A. 2013. A study on the social interactions of Manta Rays in the Baa Atoll, Maldives. Manta Trust. 26pp. Available at: <https://www.cms.int/sharks/en/publication/study-social-interactions-manta-rays-baa-atoll-maldives> [Accessed 15 March 2022].

Sattar, S. A. Najeeb, A., Afzal, M. S., Islam, F., and Wood, E. 2011. Review of the Maldivian Grouper Fishery and Export Industry. Darwin Reef Fish Project, Marine Research Centre, Marine Conservation Society UK. Report 36pp. Available at: <http://saruna.mnu.edu.mv/xmlui/bitstream/handle/123456789/5583/Review-of-the-Maldivian-Grouper-Fishery-and-Export-Industry%20September%202011.pdf?sequence=1&isAllowed=y> [Accessed 15 March 2022].

UNEP-WCMC. 2022. Protected Area Profile for Hanifaru from the World Database of Protected Areas, March 2022. Available at: <https://www.protectedplanet.net/555576577> [Accessed 15 March 2022].

# Appendix 1: Survey Questions

Four separate surveys were designed to tailor PAME questions to different stakeholders:

- Personnel in the fisheries and tourism sector (Appendix 1a),
- MPA managers and marine enforcers (Appendix 1b),
- NGOs and researchers (Appendix 1c), and
- Local government (Appendix 1d).

All respondents except NGOs/researchers were asked to complete the survey separately for each site: Hanifaru Bay MPA, Angsana Velavaru House Reef, and the Kudahuvadho Kanduolhi Grouper Site. Whereas the survey template for NGOs /researchers included all three sites as it was thought that this stakeholder group may be more likely to provide input on all sites due to their wider scope of work.

The following information was given at the start of each survey, to provide background to respondents:

As stakeholders of Marine Protected Areas (MPAs) in the Maldives we would like to hear your views on the management of the following MPAs:

Baa Atoll

1. Hanifaru Bay MPA

Dhaalu Atoll

2. Angsana Velavaru house reef

3. Kudahuvadho Kanduolhi grouper aggregation site

This survey is being run jointly between the Maldives Government and Ocean Country Partnership Programme (OCP) and consists of 15 multiple-choice questions, many of which feature comments boxes to allow you to provide additional details if you wish. **The survey will be open until 14th February 2022.** Please provide answers only for the site that you indicate in the third question of this survey. If you wish to complete the survey for more than one MPA, please complete the survey twice, selecting which MPA you are answering for each time.

Responses will be anonymised and used to inform Protected Area Management Effectiveness (PAME) assessments for each MPA. PAME assessments help MPA managers understand the impact of management actions on the MPA's values and tracks progress towards achievement of the MPA's goals and objectives. Further information is available on the [JNCC website](#).

Surveys can be completed anonymously, or you can provide your name and email address if you would like to be informed about the results of this survey and receive other updates about the UK led OCP in the Maldives. Please see the JNCC [Privacy Policy](#) for more information on how this data will be stored and used.

## Appendix 1.1 PAME Survey Questions asked to the Fisheries and Tourism sector

PAME Survey Fisheries and Tourism

### 1. What group are you part of?

- Fisheries
- Tourism/Tour Operators

**2. Do you wish to be kept updated with the progress of this project? If so, please provide your name and email address (this information will be used for no other purpose than to provide email updates, please see the Privacy Policy for more information).**

- Yes
- No

Name and email address:

**3. Please indicate which MPA you are filling this survey out for (You may only select one):**

- Hanifaru Bay MPA
- Angsana Velavaru House Reef
- Kudahuvadhoo Kandulhi Grouper Site

**4a. What do you think are the top 5 threats to the site? Please fill in the below text boxes:**

Threat 1

Threat 2

Threat 3

Threat 4

Threat 5

**4b. Do you think these threats are being properly addressed?**

- Yes
- No
- Unsure

If not, what do you think should be done?

**5a. Do you know what the goals of the MPA are?**

- Yes
- Mostly
- No

Comments:

**5b. Do you think enough is being done to achieve the goals of the MPA?**

- Yes
- More could be done
- Not enough is being done
- Nothing is being done
- I don't know

Comments:

**6. Do you know of any rules to control access or activities in the MPA?**

- Yes
- No

Comments:

**7. Do you know where the boundaries of the MPA are?**

- Yes
- No

If not, what can be done to raise awareness?

**8. Do you think there are enough people to manage the MPA?**

Yes

No

**9. Do you think the marine enforcement officers have the skills and knowledge they need to manage the MPA?**

Yes

No

Not applicable

Can you provide suggestions for improvement?

**10. Can the marine enforcement officers and management staff enforce the MPA legislation when needed?**

Yes

No

I don't know

Not applicable to me

Comments:

**11a. Is there a system in place to manage the activities in the MPA and its resources?**

- Yes
- No
- I don't know

**11b. If yes, is this system effective?**

- Very
- Mostly
- Somewhat
- Not at all
- Not applicable to me

Comments:

**12a. Do you participate in the management of the MPA?**

- Yes
- No

If yes, how?

**12b. Are you happy with your current level of participation in the MPA's management?**

Yes

No

If no, what could be done to improve it?

**13. Do you feel the facilities available to tourists at the MPA are suitable?**

Yes

No

No applicable to me

If not, what is needed?

**14. To what extent do you agree with the following statements:**

	Strongly Agree	Agree	Disagree	Strongly Disagree	Doesn't Apply to Me
At the planning stage I was consulted on the location and potential uses of the MPA before it was designated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As a member of the local community I have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Disagree	Strongly Disagree	Doesn't Apply to Me
I feel there is open communication and trust between my community and the managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

**15. Has the MPA brought any benefits to your family/the local community?**

- Yes
- No
- Not applicable to me

What can be done to bring more benefits to the local community?

**16a. Do you think the abundance/quality of the below key features has changed over the past 5 years in Hanifaru Bay MPA?**

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

**16b. Do you think the abundance/quality of the below key features has changed over the past 5 years in Angsana Velavaru House Reef?**

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

**16c. Do you think the abundance/quality of the below key features has changed over the past 5 years in Kudahuvadhoo Kandulhi Grouper Site?**

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

**17. Thank you for completing this survey.**

**If there is anything you would like to add please enter it in the below comments box:**

## Appendix 1.2 PAME Survey Questions asked to MPA Managers and Marine Enforcers

1. Do you wish to be kept updated with the progress of this project? If so, please provide your name and email address (this information will be used for no other purpose than to provide email updates, please see the [Privacy Policy](#) for more information).

Yes

No

Name and Email Address:

2. What group are you part of?

MPA Management

Marine Enforcement

3. Please indicate which MPA you are filling this survey out for (Select only one):

Hanifaru Bay MPA

Angsana Velavaru House reef

Khudahuvadhoo Kandulhi Grouper site

4a. What do you think are the top 5 threats to the site? Please fill in the below text boxes:

Threat 1

Threat 2

Threat 3

Threat 4

Threat 5

4b. Do you think these threats are being properly addressed?

- Yes
- No
- Unsure

If not, what do you think should be done?

5a. Do you know what the goals of the MPA are?

- Yes
- Mostly
- No

Comments:

5b. Do you think enough is being done to achieve the goals of the MPA?

- Yes
- More could be done
- Not enough is being done
- Nothing is being done

Comments:

6. Do you know if there are any rules that control access to the MPA or control activities within it?

- Yes
- No

Comments:

7. Are there enough people to manage the MPA?

- Yes
- No

8. As MPA management and enforcement staff, do you have the skills and knowledge you need to manage the MPA?

Yes

No

Can you provide suggestions of improvement?

9. Does the current budget restrict the success of the MPA?

Yes

No

Not Applicable

Please suggest how additional income would benefit the MPA:

10. Do you have the equipment/support needed to properly manage the MPA?

Yes

No

If no, what equipment/support would be helpful?

11. Can the management staff enforce the MPA legislation when needed?

- Yes
- No
- Don't know
- Not applicable

Comments:

12a. Is there a system in place to manage the activities in the MPA and it's resources?

- Yes
- No

12b. If yes, is this system effective?

- Very
- Mostly
- Somewhat
- Not at all
- Not applicable to me

Comments:

13. Are staff given working conditions that prioritise their safety?

Yes

No

If no, what could be improved?

14. To what extent do you agree with the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree	Doesn't Apply to Me
At the planning stages, members of the local community were consulted on the location and potential uses of the MPA before it was designated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Members of the local community have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel there is open communication and trust between the local community and the managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

15a. Do you think the abundance/quality of the below key features has changed over the past 5 years in Hanifaru Bay MPA?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

15b. Do you think the abundance/quality of the below key features has changed over the past 5 years in Angsana Velavaru House Reef?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

15c. Do you think the abundance/quality of the below key features has changed over the past 5 years in Kudahuvadhoo Kanduolhi Grouper Site?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

16. Thank you for completing this survey.

If there is anything you would like to add please enter it in the below comments box:

## Appendix 1.3 PAME Survey Questions asked to NGOs and Researchers

Do you wish to be kept updated with the progress of this project? If so, please provide your name and email address (this information will be used for no other purpose than to provide email updates, please see the privacy policy for more information).

Yes

No

Name and email address:

2. What group are you part of?

NGO

Research

Both

Please tell us the organisation that you represent/ are affiliated with. If you do not wish to share this information please leave this question blank.

3a. What do you think are the top 5 threats to each site?

	Threat 1	Threat 2	Threat 3	Threat 4	Threat 5
Hanifaru Bay	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

	Threat 1	Threat 2	Threat 3	Threat 4	Threat 5
Angsana Velavaru					
Kudahuvadhoo Kanduolhi					

3b. Do you think these threats are being properly addressed? If not, what do you think should be done?

	Yes	No	I do not know
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadhoo Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

4a. Do you know what the goals of the MPA are?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadhoo Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4b. Do you think enough is being done to achieve the goals of the MPA?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadho Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

5. Do you know of any rules to control access or activities in the MPA?

	Yes	No	Not Applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadho Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

6. Are there enough people to manage the MPA?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadho Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Do you think the marine enforcement officers have the skills and knowledge they need to manage the MPA?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadho Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Can you provide suggestions of improvement? (specify MPA)

8. Can the management staff enforce the MPA legislation when needed?

	Yes	No	I don't know	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadho Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

9a. Is there a system in place to manage the activities in the MPA and its resources?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not applicable to me
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadhoo Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

9b. If yes, is this system effective? Please add details in the comments box below.

	Very	Mostly	Somewhat	Not at all	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadhoo Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (specify MPA):

10. Do you feel the facilities available to tourists at the MPA are suitable?

	Yes	No	Not applicable to me
Hanifaru Bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angsana Velavaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kudahuvadhoo Kanduolhi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If not, what is needed? (specify MPA)

11a. To what extent do you agree with the following statements in regard to Hanifaru Bay MPA

	Strongly agree	Agree	Disagree	Strongly disagree	Doesn't apply to me
At the planning stage I was consulted on the location and potential uses of the MPA before it was designated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel there is open communication and trust between the community/stakeholders and managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I support the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

11b. To what extent do you agree with the following statements in regard to Angsana Velavaru House Reef

	Strongly agree	Agree	Disagree	Strongly disagree	Doesn't apply to me
At the planning stage I was consulted on the location and potential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Disagree	Strongly disagree	Doesn't apply to me
uses of the MPA before it was designated					
I have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel there is open communication and trust between the community/stakeholders and managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I support the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

11c. To what extent do you agree with the following statements in regard to Kudahuvadhoo Kanduolhi Grouper Site

	Strongly agree	Agree	Disagree	Strongly disagree	Doesn't apply to me
At the planning stage I was consulted on the location and potential uses of the MPA before it was designated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel there is open communication and trust between the local community/stakeholders and managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Disagree	Strongly disagree	Doesn't apply to me
I support the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

12a. Do you think the abundance/quality of the below key features has changed over the past 5 years in Hanifaru Bay MPA?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (e.g. information about research projects related to the MPA. Does this research inform management?):

12b. Do you think the abundance/quality of the below key features has changed over the past 5 years in Angsana Velavaru House Reef?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (e.g. information about research projects related to the MPA. Does this research inform management?):

12c. Do you think the abundance/quality of the below key features has changed over the past 5 years in Kudahuvadhoo Kandulhi Grouper Site?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments (e.g. information about research projects related to the MPA. Does this research inform management?):

13. Thank you for completing this survey.

If there is anything you would like to add please enter it in the below comments box:

## Appendix 1.4 PAME Survey Questions asked to Local Government

1. Do you wish to be kept updated with the progress of this project? If so, please provide your name and email address (this information will be used for no other purpose than to provide email updates, please see the [privacy policy](#) for more information).

Yes

No

Name and email address:

2. Please tell us the name of the Local Government Authority that you represent:

3. Please click which MPA you are filling this survey out for (you may only select one):

Hanifaru Bay MPA

Angsana Velavaru House reef

Kudahuvadhoo Kandulhi Grouper site

4a. What do you think are the top 5 threats to the site?

Threat 1

Threat 2

Threat 3

Threat 4

Threat 5

4b. Do you think these threats are being properly addressed?

- Yes
- No
- Unsure

If not, what do you think should be done?

5a. Do you know what the goals of the MPA are?

- Yes
- Mostly
- No

5b. Do you think enough is being done to achieve the goals of the MPA?

- Yes
- More could be done
- Not enough is being done
- Nothing is being done

Comments:

6. Do you know of any rules to control access or activities in the MPA?

Yes

No

Comments:

7. When planning terrestrial developments, are impacts to the MPA taken into consideration?

Yes

No

Comments:

8. Do you think there are enough people to manage the MPA?

Yes

No

9. Do you think the marine enforcement officers have the skills and knowledge they need to manage the MPA?

Yes

No

Can you provide suggestions of improvement?

10. Can the management staff enforce the MPA legislation when needed?

Yes

No

I don't know

Not applicable to me

Comments:

11a. Is there a system in place to manage the activities in the MPA and its resources?

Yes

No

I don't know

11b. If yes, is this system effective?

Very

- Mostly
- Somewhat
- Not at all
- Not applicable to me

Comments:

12. To what extent do you agree with the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree	Doesn't Apply to Me
At the planning stage I was consulted on the location and potential uses of the MPA before it was designated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As a member of the local community I have an input into the decisions of managing the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel there is open communication and trust between my community and the managers of the MPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

13. Has the MPA brought any benefits to your family/the local community?

- Yes
- No
- Not applicable to me

What can be done to bring more benefits to the local community?

14a. Do you think the abundance/quality of the below key features has changed over the past 5 years in Hanifaru Bay MPA?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

14b. Do you think the abundance/quality of the below key features has changed over the past 5 years in Angsana Velavaru House Reef?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

14c. Do you think the abundance/quality of the below key features has changed over the past 5 years in Kudahuvadho Kanduolhi Grouper Site?

	Greatly increased	Slightly increased	No change	Slightly decreased	Greatly decreased	Not applicable
Manta Rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whale Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sharks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coral reefs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reef fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turtles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seabirds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

15. Thank you for completing this survey.

If there is anything you would like to add please enter it in the below comments box: