Ocean Country Partnership Programme

Workshop on use of new technology to support MPA surveillance, compliance and enforcement – Workshop Report

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Workshop on use of new technology to support MPA surveillance, compliance and enforcement, January 2023

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Introduction

A workshop to discuss the use of new technology in MPA surveillance, compliance and enforcement was organised by the Government of Maldives in collaboration with the Ocean Country Partnership Programme (OCPP) on 26th January 2023. The workshop took place in Male and was attended by 20 stakeholders including stakeholders from Government of Maldives Departments, and representations from the 3 Biosphere Reserves of the Maldives.

The aims of the workshop were to secure information to understand**:**

- The risks and threats from human activity within the marine environment
- The current surveillance and compliance measures in place
- If there are any tools or technologies which could support the Maldives in ensuring compliance within their waters.

The workshop agenda covered the following elements:
1. Welcome and introduction
2. Background information
3. Breakout session on human activity in the marine environment
4. Technology to support surveillance, compliance and enforcement
5. Coordinating intelligence
6. Breakout session on technology opportunities for the Maldives
7. Next Steps

The OCPP team gave a series of presentations introducing workshop attendees to options around the use of new technology to support MPA compliance, enforcement, and surveillance. Attendees were then split into 3 groups and worked with OCPP facilitators to address a series of questions through breakout discussions. These are summarised below.

Breakout session 1: Human activity in the marine environment

The purpose of this session was to understand the key risks and threats from human activity within the marine environment of the Maldives. While attendees present represented specific sites and locations, they were also asked to consider human activity on a national scale. Groups were asked to look at the compliance and enforcement measures in place to tackle key risks.

Key Points:

Groups looked at both national compliance challenges and issues faced by specific sites. The impacts of tourism (especially diving) and sand extraction were highlighted by several groups, observing that changes within the tourism sector are influencing changing levels of environmental awareness. A range of other risks and threats from human activities were identified, which included elements such as impacts on coastal sites from encroachment of farmland and fire incidents, as well as impacts on marine sites such as fishing pressure, pollution and dredging.

Workshop attendees were then asked to identify the existing compliance measures that are in place/ available to support MPA protection. The outcome of these discussions is shown in figure 1. Existing compliance was discussed in detail, including the processes for non-compliance, the range of tools that are available to support compliance, and the importance of awareness raising and education to promote better understanding of the marine environment.

Figure 1: Diagram showing the existing compliance measures that were identified by stakeholders in the workshop

Challenges:

Several challenges were identified by the group in support of compliance and surveillance of existing MPAs. Limited resources and funding were a common theme across these discussions. The importance of training and ensuring a clear understanding of roles and responsibilities among all personnel with a role in compliance and enforcement was clear. The need for increased monitoring and surveillance was mentioned, and attendees discussed the challenges around this.

Break out session 2: Gathering intelligence

The purpose of this session was to understand how data and information collected on compliance issues are used to support decisions related to surveillance, compliance and enforcement.

Workshop attendees worked in 3 groups with facilitators to address the following questions:
1) What information do you gather and how is it used, for example, inspection reports, reports of non-compliance, records of permits and licences?
2) Are there any gaps in the information you gather? How could you address these gaps?
3) Is there a process to handle the data and create risk profiles and intelligence reports? How could this be achieved?

Workshop attendees shared that information is currently collected in the form of licenses, permits and ranger reports, and that a hotline is run by the EPA where complaints can be made. There is a process for bringing together related complaints (consolidating information to create useful intelligence). The EPA and legal department work together to consider enforcement outcomes.

Representatives from the Biosphere Reserves provided valuable information around the surveillance they undertake locally. Awareness raising is targeted at key times, for example, tourists are targeted during migratory bird seasons via media outlets and the council.

Break out session 3: Supporting technology

A short presentation was given to provide an overview of some of the different technologies available, including:
- Satellite surveillance
- Passive Acoustics
- Tethered platforms
- Drones
- Land based, long range cameras
- VMS (Vessel Monitoring Systems)/IVMS (Inshore Vessel Monitoring Systems)/CCTV

Workshop attendees worked in 3 groups with facilitators to address the following questions:
Can technology support any gaps in surveillance?
- Are there any locations where this technology may be useful?
- Pros and cons
- How would the data the technology provides be monitored and used?
- Are there any legislative restrictions?
- Are there any similar programmes running such as technology to support environmental monitoring?
- What are the options for financial support?

Key Points:

Land based cameras and drones were flagged by all groups as having possible use in the Maldives. Passive acoustic devices were also highlighted as areas of interest, although there was less detail about their possible benefits. The following section provides information on factors that would need to be considered with each technology type:

Land based cameras:
- The Maldives is a high salt environment. Long range cameras would be useful, but must be durable, salt water tolerant and have night vision.
- Cameras could help monitor vessel activity (including after dark) and may be suitable to monitor turtle nesting beaches.
- Cameras cost around USD$40,000 but maintenance costs are unknown. Cameras could still be a cost-effective solution in comparison with current ranger and patrol boat costs.
- Cameras would need a range up to 4km.
- Resource is required to watch the footage and a query was raised about whether this needs to be in real time.

- In many of the priority locations suggested, there are sites suitable to install and power the cameras.

Drone

- Drones would be useful to support surveillance in certain areas such as wetlands and turtle nesting beaches.
- Training on the safe use of drones would be required for personnel.
- There is a need to ensure that drones can cope with the high salt content of the environment and that the legislation to use drones is fully understood and complied with.

Summary

The workshop helped facilitate effective discussion around existing compliance and surveillance of MPAs and some of the challenges currently faced. Constructive discussions around options for the use of new technology took place, including consideration around key locations, challenges and possible solutions. The OCPP team will explore options and next steps for this work with the Ministry for Environment, Climate Change and Technology.

The OCPP team would like to thank the Ministry for Environment, Climate Change and Technology for their help with organising this workshop, and to all workshop attendees for their input and engagement into the discussions.

Appendix

Stakeholder attendance list for the workshop on use of new technology to support MPA surveillance, compliance and enforcement in the Maldives. Attendees have been listed by number of participants from each organisation.

Stakeholder Organisation Name	Number of participants
Ministry of Environment, Climate Change and Technology	3
IUCN	7
Addu Nature Park/Addu City Council	2
Baa Atoll Biosphere Reserve Office	2
Fuvahmulah City Council/ Fuvahmulah Nature Park	2