

Sustainable Ocean Initiative National Capacity Building Workshop for the Republic of the Maldives

17-19 June 2019
Dhiffushi, Maldives



Convention on
Biological Diversity



G**BI**
Global Ocean Biodiversity Initiative

Foreword

This report provides a summary of the Sustainable Ocean Initiative (SOI) National Capacity Development Workshop for the Republic of The Maldives, which took place in Dhiffushi, Maldives on 17-19 June 2019. This workshop was convened by the Secretariat of the Convention on Biological Diversity (CBD) and the Secretariat of the Global Ocean Biodiversity Initiative (GOBI), together with the Ministry of Environment, Maldives. Financial support for the workshop was kindly provided by the Government of the Republic of Korea (through the Ministry of Oceans and Fisheries) and the Government of Sweden.

DISCLAIMER

The workshop was intended as a capacity building exercise and, as such, does not represent the official views of the offices, ministries or organizations involved. The various sessions of the workshop were intended as illustrative training exercises for the workshop participants and, therefore, the outputs of the sessions, including any maps, are not official designations. The information used in the workshop was based entirely on the information available and the knowledge of the workshop participants.

Contents

Foreword	2
Contents.....	3
1 Background on the Conservation and sustainable use of marine and coastal biodiversity in The Republic of the Maldives	4
2 Background on the Sustainable Ocean Initiative.....	4
3 Purpose of the workshop.....	5
4 Workshop approach and structure	5
5 Workshop proceedings.....	6
5.1 Opening of the workshop	6
5.2 Workshop objectives and expected outputs.....	10
5.3 Global, regional and national context for marine and coastal biodiversity in the Maldives ...	12
5.4 Planning for national EBSA exercise in the Maldives	13
5.5 New information and developments since the NE Indian Ocean EBSA workshop.....	13
5.6 National EBSA exercise	16
5.7 Developing a suite of national EBSAs	17
5.8 Marine spatial planning	20
5.9 Conclusions and next steps.....	21
5.10 Closing remarks	21
Annex A: List of workshop participants	22
Annex B: Workshop programme	24
Annex C: Workshop output maps and tables.....	28

1. Background on the conservation and sustainable use of marine and coastal biodiversity in The Republic of the Maldives

The Republic of the Maldives is a small island nation consisting of 1200 islands grouped into 26 natural atolls having globally significant and exceptionally diverse marine and coastal biological diversity. The marine and coastal ecosystems, including mangroves, wetlands, beaches, seagrass beds, lagoons, coral reefs and the vast ocean, support a diverse range of species and charismatic megafauna. These ecosystems are also fundamental for natural island dynamics and local livelihoods.

With a resident population of 531,941 people in 187 inhabited islands, the people and the economy of the Maldives are predominantly dependent on marine and coastal biodiversity. This crucial utilitarian value is evident in peoples' livelihoods and the dependency of the country's economy on marine and coastal ecosystems. As such, conservation and sustainable use of marine biological diversity has gained prominence over the years. The Constitution of Maldives has stipulated articles on biodiversity conservation and sustainable use with a focus on the rights of citizens to enjoy the beauty of Maldives' biodiversity. In addition to this, umbrella acts on environmental protection, fisheries management and tourism management encompass the legislative framework for marine and coastal biodiversity conservation.

The main policy document for biodiversity conservation is the National Biodiversity Strategy and Action Plan 2016-2025. To date, 61 marine and coastal areas have been designated as protected. Similarly, 103 bird species and all species of migratory birds, sharks, rays, turtles, cetaceans and corals have legally protection, along with other significant coral reef species. The current government has also formulated the Strategic Action Plan 2019-2023 as a national development agenda, which has many components on marine and coastal biodiversity conservation and sustainable use. Biodiversity conservation has also been mainstreamed into other sectoral policies including climate change, fisheries and tourism.

The Maldives' marine and coastal biodiversity, with its important intrinsic value, forms a quintessential part of the country's natural capital, bringing about economic benefits that ensure the development of the country as well as its citizens. In this regard, conservation efforts in the Maldives are abundant, ranging from legal protection and management, ecotourism ventures, community-based management, other effective area-based management tools, and international designations such as Ecologically and Biologically Significant Marine Areas, IUCN categories and UNESCO Biosphere Reserves.

2. Background on the Sustainable Ocean Initiative

The Conference of the Parties to the Convention on Biological Diversity at its tenth meeting adopted the Strategic Plan for Biodiversity 2011-2020, with its Aichi Biodiversity Targets.¹ The mission of the Strategic Plan is to take effective and urgent action to halt the loss of biodiversity in order to ensure that, by 2020, ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human wellbeing and poverty eradication.

At the same meeting of the adoption of the Strategic Plan and the Aichi Biodiversity Targets, the Conference of the Parties also emphasized the need for training and capacity-building for developing

¹ See [decision X/2](#).

country Parties through regional workshops that contribute to sharing experiences and knowledge related to the conservation and sustainable use of marine and coastal biodiversity.

In recognition of this urgent need, the Sustainable Ocean Initiative (SOI) came into existence in the margins of the tenth meeting of the Conference of the Parties, with the support of the Government of Japan and in collaboration with various partners who provided expertise as well as technical and financial resources. SOI is coordinated by the Secretariat of the Convention on Biological Diversity (CBD). SOI focuses on achieving a balance between conservation and sustainable use of marine and coastal biodiversity by applying an action-oriented, holistic and integrated capacity-building framework. SOI is committed to building bridges between biodiversity conservation and resource management sectors.

The Executive Secretary of the CBD convened the Sustainable Ocean Initiative National Capacity-Building Workshop for the Republic of the Maldives, with financial support from the Government of the Republic of Korea (through the Ministry of Oceans and Fisheries) and the Government of Sweden, and in collaboration with the Ministry of Environment of The Maldives and the Global Ocean Biodiversity Initiative.

3. Purpose of the workshop

The workshop aimed to provide an opportunity for (a) dialogue and discussion among different stakeholders and sectors in the Maldives, (b) discussion of various national-level priorities and objectives for the Maldives regarding marine and coastal resources and how these relate to each other, (c) describing and mapping out areas in Maldivian waters that may meet the criteria for ecologically or biologically significant marine areas (EBSAs), (d) identification of how EBSA information can be used to support planning and management in the Maldives, including marine spatial planning, and (e) identification of how the use of EBSA information to inform planning and management contributes to the national priorities and objectives of the Maldives.

4. Workshop approach and structure

The workshop was organised in plenary and breakout groups and included presentations with question-and-answer sessions, interactive group exercises and discussions in breakout groups.

The workshop was chaired by Ms. Ilham Atho Mohamed, Assistant Director of the Ministry of Environment, Maldives and CBD National Focal Point for the Maldives. Participants included representatives from the other governmental ministries, offices and agencies, in addition to members of the scientific community and civil society. A full list of participants is provided in Annex A.

Each day of the workshop had a general thematic focus (as shown below), with day 1 focusing on identifying the national context and key national priorities, day 2 focusing on describing and mapping out potential ecologically or biologically significant marine areas (EBSAs) in the Maldives and day 3 focusing on using EBSA information to support planning and management.

Day 1	<p>National Context and Priorities</p> <ol style="list-style-type: none"> 1. Global and regional priorities for ocean and coasts 2. National context and priorities for marine resources of the Maldives 3. Different values and uses of marine areas in the Maldives
Day 2	<p>Ecologically or Biologically Significant Marine Areas (EBSAs)</p> <ol style="list-style-type: none"> 4. Describing and mapping out potential ecologically or biologically significant marine areas (EBSAs) in the Maldives
Day 3	<p>Using EBSA Information</p> <ol style="list-style-type: none"> 5. Using EBSA information to support planning and management

5. Workshop proceedings

The workshop programme is provided in Annex B.

5.1 Opening of the workshop

The workshop was opened by Ms Ilham Atho Mohamed, Assistant Director, Ministry of Environment of the Maldives. She welcomed participants to the workshop, in particular the State Minister for Environment, Dr Abdulla Naseer, and the President of the Dhiffishi Council Mr Ibrahim Azeem. She also extended a warm welcome to colleagues from the Global Ocean Environment Initiative, Professor David Johnson, Dr Piers Dunstan and Dr Vikki Gunn, and wished all workshop participants a productive workshop.

Dr Joseph Appiott (CBD Secretariat), joining the opening ceremony by live weblink, delivered a statement on behalf of Dr Cristiana Paşca Palmer, the Executive Secretary of the CBD. Dr Palmer extended her appreciation to the Government of the Maldives for hosting the workshop, and to the Ministry of Environment and the Global Ocean Biodiversity Initiative for their collaboration and support. She also acknowledged the generous financial contribution of the Republic of Korea in support of the workshop.

Dr Palmer explained the importance of resilient ecosystems to sustainable development and the interlinkages between a healthy environment, sustainable economic growth and societal wellbeing, which are at the core of the CBD's Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. However, she acknowledged that there are challenges in achieving a sustainable balance between healthy, productive oceans and societal needs, and that these challenges highlight the urgent need to enhance human capacities and to support concerted cooperative action among diverse stakeholders, different sectors, governmental agencies and civil society groups.

The Sustainable Ocean Initiative (SOI) is coordinated by the CBD Secretariat and aims to respond to the urgent need for capacity development. Dr Palmer explained that SOI is a global partnership platform focused on facilitating information-sharing and learning from experience across sectors, improving the scientific basis for implementation and creating partnerships that can provide for

targeted capacity-building, training, technical assistance and learning exchange to support countries in achieving the Aichi Biodiversity Targets in marine and coastal areas. A central means of enabling the achievement of the Aichi Biodiversity Targets is through enhanced dialogue and coordination across different sectors and stakeholder groups to build a common understanding and vision for the conservation and sustainable use of marine biodiversity and ecosystems, and for how they can contribute to sustainable development.

Dr Palmer observed that this workshop will focus on cross-sectoral dialogue and marine spatial planning as a tool to support effective conservation and sustainable use of the Maldives' marine biodiversity, balancing different uses and priorities for the marine environment and contributing to healthy ecosystems, sustainable economic growth and societal well-being. She noted that the meeting presents a great opportunity for cross-sectoral dialogue on the priorities for the marine resources of the Maldives and how this information can be used to support integrated planning and management through marine spatial planning.

In conclusion, Dr Palmer wished participants a successful workshop and looked forward to working with the Maldives in the context of a shared vision for the marine environment to consider ways to enhance implementation to safeguard the sustainability of the Maldives's ocean resources.

Prof. David Johnson, Coordinator of the Global Ocean Biodiversity Initiative (GOBI), gave a short introduction to GOBI, its mission and partners. GOBI is an international partnership of institutions committed to advancing the scientific basis for conserving biological diversity in the marine environment, supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. In particular, GOBI provides scientific support to the Convention on Biological Diversity's efforts to describe and identify ecologically and biologically significant areas of the world's oceans, and to guide States, regional and global organisations on how the CBD's scientific criteria can be interpreted and applied towards management, including representative networks of marine protected areas. GOBI has been the single largest contributor of data and expertise to the EBSA process, making an input to all the Regional EBSA Workshops. In 2016, Germany's International Climate Initiative awarded GOBI a grant to support its EBSA-related efforts over five years, effected through a portfolio of scientific research spanning key marine ecosystems and species, as well as incorporating the development of new tools and methodologies that will progress our ability to effectively manage and conserve marine biodiversity. This includes developing a sub-regional biogeography for the Indian Ocean; collating and analyzing data on migratory species and migratory routes in ABNJ; promoting the use of seabird data; and identifying Important Marine Mammal Areas in the Indian Ocean.

An opening speech by the Minister of State for Environment, Dr Abdulla Naseer, gave the workshop participants an insight into the evolution of the Maldives, the threats its marine environment faces, and efforts to date to protect its natural heritage and resources:

This is indeed a rare opportunity to get away from the hustle and bustle of Male City this early in the morning and meet together at this beautiful setting in the island of Dhiffushi. This is a fast-developing fishing island (definitely used to be) where you can witness both fishing and tourism in a single island setting. Welcome to you all.

I would like to say a few words about the Maldives and the reefs we live on as we begin this important exercise on biodiversity and sustainable management of the oceans.

Humans have habited the atolls of the Maldives for thousands of years. They have lived off reefs and have adopted a simple way of life that is in harmony with coral reefs. The intricate nature of community relationships and their connections to coral reefs are well established. The ecosystem services provided by coral reefs and the surrounding oceans are often taken for granted. Coral reefs of atolls provide a living, livelihoods, comfort and security to atoll communities. Maldivians have lived as small communities on reef islands as a content group of people living sustainably off reefs and leading a simple life. All this changed with the advent of tourism in the seventies. The natural beauty of coral islands became the center of attention and attraction. Little did people know about the parent reefs which created and maintained the islands. Income and livelihoods improved from coral reef products and resource which did not have any significant value until the advent of tourism. Uninhabited islands only good for firewood and coconuts were converted to million-dollar products virtually overnight. Coral islands became the most sought-after product for many investors. Resort development on coral islands was relentless over the past 40 years. We have benefitted immensely from coral islands around us with often no particular regard to how they were formed and maintained naturally. Eighties and nineties brought about some management initiatives to coral reefs mainly as a response to global warming and sea-level rise. Donors took notice and funded much needed coral reef conservation projects in the Maldives. The most important and outstanding outcome of the conservation efforts of the nineties was the banning of coral mining which was the most destructive and widespread activity for many 100s of years. This afforded much needed protection for coral reefs and was instrumental in shaping the reefs today. Many other initiatives followed. Now we have protected many charismatic marine species such as sharks and rays and many more reef associated species. Reefs continue to be sacrificed to build resorts and other built coastal structures. We have developed legal instruments (EIAs) to address development impacts on reefs. But governments have constantly struggled to come to terms of with EIA procedures so that the process has weakened considerably over time. EIAs are sometimes regarded as impediments rather than a tool for sustainable development on reefs. Concerns are growing about the lack of meaningful and lasting and sustained management initiatives for coral reefs. The need to come up with practical and locally driven solutions for atoll type coral reef conservation and development is becoming increasingly apparent.

The Maldivian coral reef archipelago represents the true archetype of atolls in the world. There is nowhere more appropriate in the world to develop an atoll type conservation system for atoll type reefs. Our respect for true atolls is not just because the word “atoll” is an authentic Dhivehi word but we have a global responsibility to protect and conserve and sustainably use these atoll archetypes. The income generated from reefs is considerable need to be allocated to study and understand coral reefs. Healthy reefs are critical for the sustenance of all economic activities in the Maldives. We are connected to reefs for our very survival, protection and income.

We have tried to adopt integrated coral reef management models such as the establishment of MPAs, LMMAs, IRRM and other mechanisms with limited success. It may be argued that better definitions of natural atolls and reefs and zoning them

biological and ecologically in a better and locally appropriate context may hold the key for sustainable management of atolls and reefs in the Maldives.

There are more than 2000 individual coral reefs making up the 21 atolls in the Maldives. These individual reefs are strongly characterized by their geology, locations and physical processes affecting them. Reefs display well defined zones that are strongly correlated to wave forcing. Meaningful conservation and management of coral reefs of the Maldives can be best achieved by

development management plans for individual coral reefs in light of their physical, biological and ecological characteristics. Habitats within a reef are identified using spatial planning techniques. For effective conservation habitat complexity on individual reefs need to be mapped for every coral reef in the Maldives. The connectivity of habitats within a reef is of great importance in conservation planning for atolls type reefs.

Community usage of reefs have traditionally centered on resources that are linked to a particular reef or reefs characterized by particular favorable habitats. Generations of fishermen have developed complex mechanisms on individual reefs and open oceans to take fish in large quantities. Many reef associated species are known to occupy specific niches and habitats with an individual reef. Conservation plans for individual reefs can identify and address dominant commercial and other reef species by their habitat types.

With this backdrop I note that we have a great opportunity to make use of the Sustainable Ocean Initiative under the Convention on Biological Diversity to ensure conservation and sustainable use of marine and coastal biological diversity including coral reefs of the Maldives. It is a pleasure for us to work with Global Ocean Biodiversity Initiative (GOBI) and the Secretariat of the Convention on Biological Diversity in organizing this workshop.

Oceans around the Maldives host internationally threatened species and marine megafauna. The atolls of the Maldives are also home to globally significant populations of whale shark, manta rays, reef sharks and more than 20 species of whales and dolphins most of which are already protected but badly in need of better and effective management plans.

Coral reef ecosystems play a key role in enabling human settlements in the Maldives through climate regulation, storm buffering, and coastal protection. The reef functions as natural sea defenses for islands highly vulnerable to climate change.

Dangerous climate change impacts such as increase in Sea Surface Temperature, increasing ocean acidity, increased frequency of extreme weather events pose serious risk to marine biodiversity in the Maldives.

The current government affords much protection and conservation of marine areas and is a priority for the Government. Currently there are 50 protected areas in Maldives and the Government has pledged to designate at least 1 reef, 1 mangrove and 1 island from each atoll. The government's ambitious plan for conservation and sustainable use of coral reefs needs technical input for their establishment. We need to make informed decisions.

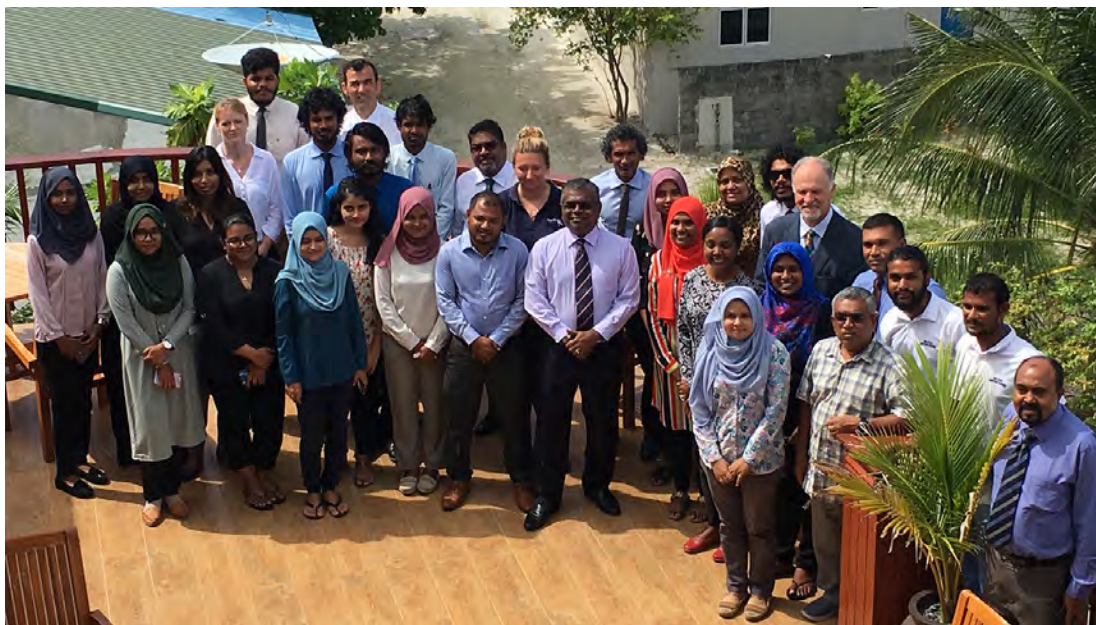
I hope that through this workshop will provide a platform to discuss and identify Ecologically and Biologically Significant Marine Areas (EBSAs) coral reefs and atolls of the Maldives. It is important that we understand the CBD definitions EBSAs and how we work with criteria to establish such sites. I also make note of the fact that we have already established 2 EBSAs in the Maldives. They are reefs of Baa Atoll and Rasdhoo Atoll. I trust you will have a chance to talk about that in detail.

It is also my hope that through this 3-day of discussions and dialogue between the different stakeholders we can pave the way for a national strategic plan for sustainable coral reef and ocean management for the Maldives. Marine Spatial Planning in a reef use context is very important for the Maldives. I note that you will address marine Spatial Planning in a coral reef context engaging with local expertise.

This workshop has come at a very opportune time. We are currently developing our National Development Plan and the marine and reef use planning outcomes of this workshop will positively contribute to the National Development Plan under development.

Let me conclude by thanking the Global Ocean Biodiversity Initiative for assisting the Maldives in the delivery of this timely workshop. I would also thank the Secretariat of the Convention on Biological Diversity for facilitating and arranging this workshop. I also commend the biodiversity team at the Ministry for their active engagement in organizing and this workshop. I wish you a good meeting.

Workshop participants then gathered for a group photograph before commencing the workshop programme.



5.2 Workshop objectives and expected outputs

Prof. David Johnson (GOBI) described the workshop background, approach and expected outputs. By way of background, he referenced the major international players in ocean conservation and management, including the Convention on Biological Diversity, UN Environment Programme, Food and Agriculture Organisation, International Union for the Conservation of Nature and the Global Environment Facility, alongside a range of NGOs and international programmes and initiatives. Against this international ocean agenda, the Sustainable Ocean Initiative (SOI) was established at CBD COP in 2010 to help support implementation of the CBD's Aichi Targets through promotion of shared experiences, exchange of new ideas and approaches, facilitation of new partnerships across the international community, and capacity building. The ethos is to be more open to new ideas, diverse approaches, different sectoral concerns, and different ecological and socio-cultural collaborations.

Prof. Johnson explained that an ecosystem approach is often advocated as 'best practice' in ocean management: this involves an understanding of the processes necessary for maintenance and function of ecosystems, as well as the interactions within food webs and relationships between ecosystem and environment. This approach can be hampered by low data quality and/or limited data availability, but careful application of biogeographic classification (at a variety of scales) and use marine habitat modeling can help.

However, understanding and protecting an area of the ocean in isolation is not sufficient; in order to properly conserve marine biodiversity, it is necessary to evaluate its ecological coherence, and understand the connectivity between populations and between different life stages. Selection of indicators by which to measure the 'health' of an ecosystem is challenging, and some degree of benchmarking or baselining is always necessary, whether to routinely monitor the health of an ecosystem or to measure its recovery. Climate change impacts are bringing an additional level of complexity to ocean management issues. Workshop objectives and expected outputs were therefore to:

- Provide a forum for dialogue and discussion among different stakeholders and sectors in the Maldives;
- Discuss various national-level priorities for the Maldives regarding marine and coastal areas and steps towards developing a national strategic plan for ocean management;
- Describe and map out areas in Maldivian waters that may meet the criteria for ecologically or biologically significant marine areas (EBSAs), to serve as a basis for a national EBSA process for the Maldives and/or as input to a future CBD Regional Workshop in this region;
- Identify how EBSA information can be used to support planning and management in the Maldives, including marine spatial planning; and
- Identify how the use of EBSA information to inform marine spatial planning and management contributes to the Maldives' national priorities and objectives, including the need for reef use plans.

A brief round-table of introductions indicated that there was a wide range of sectors and government departments represented in the room.

Participants were then asked to consider and write down their personal expectations for the workshop, which would be revisited and reflected on at the end of the workshop. The 40+ expectations submitted by participants were summarised into the following six major themes:

- 1) Learn how Maldives could engage in a national EBSA workshop, and what benefits it might bring for both communities and the environment;
- 2) Identify mechanisms by which to effectively and responsibly manage the Maldives' ocean space, resources and biodiversity, whilst taking account of other social or economic priorities;
- 3) Discuss how to bring marine issues into the national planning process;
- 4) Increase communication and engagement between government departments, local councils, different sectors and stakeholders within the Maldives to address marine issues;
- 5) Ensure involvement of local communities in discussions about marine issues and in any subsequent local/national planning processes;
- 6) Increase awareness of marine issues in the youth community, and improve education on marine topics.

5.3 Global, regional and national context for marine and coastal biodiversity in the Maldives

Dr Joseph Appiott (CBD) gave a presentation on the global context for the workshop, in particular with regards to the Aichi Biodiversity Targets and the Sustainable Development Goals (SDGs). He discussed the key aspect of the Aichi Targets with regards to marine and coastal biodiversity. Dr Appiott highlighted the importance of biodiversity to sustainable development and stressed the close interlinkages between the SDGs and the Aichi Targets. However, he also noted that we are very near the 2020 deadline of the Aichi Biodiversity Targets, and discussions are underway to develop the post-2020 global biodiversity framework. He also noted the various ongoing global intergovernmental processes relevant to ocean issues. He stressed that global-level commitments reflect the will of governments and that only on-ground implementation will facilitate their achievement. He also stressed that individual targets and global goals cannot be achieved in isolation and that actions to achieve the Aichi Targets will also help to achieve the SDGs, and vice versa.

Prof. Johnson presented an overview of the regional context for the Maldives, including regional goals, strategies and initiatives. CBD Secretariat have been clear throughout that EBSAs relate to the inherent value of marine biodiversity not management (i.e. human interventions by States and competent intergovernmental organisations). He recalled the CBD Regional EBSA workshops for the Southern and North-East Indian Ocean, at which a large amount of regional data was collated, some of which have some relevance for the Maldives. As a result of this process, there are two EBSAs in Maldivian waters: Baa Atoll and Rasdhoo Atoll Reefs. There is also one IBA, Haa Alifu Atoll, in the north of the Maldives. CBD has been exploring the potential need for future update and revision workshops perhaps based on supplemental thematic analysis. New data has become available and accessible, for example through the Ocean Biogeographic Information System (OBIS).

Bringing the focus of the workshop to a national scale, Ms Atho Mohamed explained the existing national priorities and goals for marine biodiversity, and the Maldivian institutions relevant to management of marine biodiversity. She highlighted a series of planning instruments including the National Development Plan, Strategic Action Plan, Fisheries Master Plan, Tourism Master Plan and the National Biodiversity Strategy Action Plan (2016-2025). She also set out an overview of governance mandates of individual Ministries and local Councils as well as key legislation such as the Environmental Protection and Preservation Act (Law 4/93), and the President's pledge to protect one island, one reef and one mangrove from each atoll. Ms Atho Mohamed then gave an introduction to the key bodies and authorities involved in planning processes within the Maldives, and their particular roles and responsibilities in national and local biodiversity issues. The bodies particularly involved in environmental issues are:

- Ministry of Environment
- Environmental Protection Agency
- Ministry of Fisheries Marine Resources and Agriculture
- Ministry of Tourism
- Ministry of National Planning and Infrastructure
- Local Councils

Plenary discussions following these presentations highlighted the importance of cross-ministry and cross-sectoral consultation marine policy development in the Maldives. For a country so intimately reliant on its marine environment, workshop participants considered it essential to ensure all perspectives are taken into account. In particular, the Economic Ministry should be integrated into

discussions on environmental policy issues, along with civil society and the private sector. It was also noted that the Ministry of Transport would also have an important role to play since the major mode of transport in the Maldives is via boat.

5.4 Planning for national EBSA exercise in the Maldives

Working in small groups, Dr Piers Dunstan led the participants in an exercise to consider which of the national priorities discussed in the previous session are compatible/ complementary and which are potentially conflicting. Each group was asked to determine three top priorities, detailed in the table below:

Table 1: Priorities proposed by workshop participants for further consideration			
Group A	Group B	Group C	Group D
Address marine pollution and land reclamation, and their socioeconomic and environmental impacts.	Increase control on tourism as a growing industry with awareness of resource limits, impacts etc.	Marine spatial plans/zones with strengthened enforcement measures.	Marine issues to be incorporated into planning at all levels.
Educational policy to promote ownership of the marine environment.	Implement a larger network of MPAs with better management plans that can be monitored.	Empower youth participation in environmental concerns at a national level.	Data availability is spread over different sectors so data management must be improved.
Evidence-based management of marine resources, with ecological and socioeconomic considerations.	Encourage local management of ecosystems around local islands.	Consideration of carrying capacities of ecosystems: tourist numbers vs limited resources and increasing impacts.	Integrated resource management policies - how do we resolve competition for resources?

5.5 New information and developments since the NE Indian Ocean EBSA workshop

Dr Piers Dunstan gave a series of presentations on regional datasets and resources supplementary to those used in the NE Indian Ocean EBSA workshop, which could be drawn upon to support marine planning activities in the Maldives. These include biogeographies and conceptual models, broad-scale environmental datasets and information on human uses of the marine environment. Dr Dunstan reflected upon opportunities for the Maldives to integrate national programmes into the broader regional context, and - conversely - how data derived from regional activities such as the EBSA process can be used to underpin national initiatives.

The plenary discussion that followed these presentations focused on data types and information availability. In the Maldives, local upwelling centres and seasonal variation (monsoon vs summer conditions) are important, particularly for species such as mantas. In situations where in-situ plankton sampling is not available, it is critical to be able to predict when and where upwelling will occur, and how it might be affected by factors such as climate change. This capability does not yet exist but is a leading research question and is being addressed through fine-scale ocean modelling.

Participants also noted that local tuna fisheries, through independent (non-government) means, use satellite and ocean colour maps as guidance. The Fisheries Ministry is seeking to acquire real-time chlorophyll-a data, but this has limited use during the monsoon season due to cloud cover over the Maldives, when modelled data is relied upon.

In preparation for the next group exercise, Dr Johnson introduced the EBSA criteria (Table 2) and explained how they can be used to map out the values of marine biodiversity in the Maldives. This includes recognising static habitats that aggregate biodiversity (such as coral reefs), areas defined by species observation (such as foraging grounds), and persistent hydrographic habitats and ephemeral habitat (such as coastal upwelling). Interpretation and assessment methods for the different EBSA criteria are set out in the CBD EBSA Training Manual and summarised in Table 2 below:

Table 2: EBSA criteria – interpretation and assessment			
Criteria	Explanation	Interpretation	Assessment
Uniqueness or rarity	Location contains either unique rare or endemic species, populations or communities; habitats or ecosystems; or geomorphological or oceanographic features	Highly scale dependent May require the use of physical proxies Deep sea ecosystems are difficult to assess because “rarity” is common	Quantification or estimation of abundance (e.g., population size or area of habitat) – uniqueness cannot be judged on a relative scale but rarity may be judged relative to other species or habitats
Special importance for life history of species	Specific area that supports an individual species All life stages	Scale dependent Reliability and exclusivity of use determine significance Likely to require modeling to remove biases in data collection Can vary with sex and life-history stage	Generally based on models derived from survey data or tagging data. Satellite tracking data offers more detailed information on a single animal; more consistent data are from multiple tracked animals
Importance for threatened endangered or declining species and/or habitats	Specific area containing habitat for the survival and recovery of endangered, threatened or declining species or area with significant assemblage of such species	Linkage between area of concern and endangered species is important Greater persistent use and numbers of threatened individuals the more significant the area Requirements of deep-sea species often poorly known	IUCN Red Lists are important
Vulnerability, fragility, sensitivity, slow recovery	Sensitive habitats, biotopes or species	Largely based on information about: <ul style="list-style-type: none"> • Maximum life span • Age-at-first reproduction • Fecundity Vulnerability can be evaluated relative to threats, but was not during the EBSA process Can also vary with sex and life-history stage	Quantification or estimation of the three traits Expert opinion & Traditional Ecological Knowledge can be significant
Biological productivity	Comparatively higher natural biological productivity	Usually assessed by considering primary or secondary productivity, though it can be evaluated by data such as fisheries catches. Commonly relies on remote sensing and models Need to recognize lags in where and when secondary blooms result from primary productivity Includes coastal upwelling, Equatorial upwelling, Fronts and eddies	Models of relative abundance of Chlorophyll-a or zooplankton
Biological diversity	Comparatively higher natural biological	Usually assessed by considering some combination of:	Typical metrics used: Shannon-Wiener Index (Shannon

	diversity	<ul style="list-style-type: none"> • Richness • Even-ness • Taxonomic distinctness <p>Highly scale dependent Frequently assessed in coastal waters using habitat heterogeneity, complexity & rugosity as proxies. However, empirical assessments based on survey data are much more accurate</p>	<p>1948) Simpson's Index (Simpson 1949) Pielou's Evenness Index (Pielou 1969) Hurlbert (ES50) Index (Hurlbert 1971) Berger-Parker Index (Berger & Parker 1970, May 1975) Rank Abundance Curves (Foster & Dunston 2009)</p>
Naturalness	Significantly more natural or undisturbed	<p>Relative measure (i.e., not binary) Based on mapping cumulative impacts of human maritime activities- either globally (e.g., Halpern et al. 2008) or regionally (e.g., Ban & Alder 2008; Tallis et al. 2008; Halpern et al. 2009)</p>	<p>Stressors are generally considered additive or incremental (e.g., 1 + 1 = 2), but can act synergistically (e.g., 1 + 1 = 9) or antagonistically (e.g., 1 + 1 = 0) Must assume additive effects without better knowledge, but likely underestimates impacts</p>

Prof. Johnson summarised the following key messages regarding the application of the EBSA criteria:

Scale: There is no single or correct scale for the application of any of the EBSA criteria. Modern GIS technology allows users to work at multiple scales. Similarly, modelling (such as predictive habitat or biogeographic classifications) does not need to be at a uniform scale, with some places reflecting better input data and certainty than others. Common scientific good practices for addressing scale and uncertainty are readily available and should be applied. When dealing with maps and data of varying scales and quality, the use of estimated confidence layers in GIS analyses is highly recommended

Relative importance / significance: All of the EBSA criteria (except for “uniqueness”) are *relative* measures (i.e., they comparatively order places that are more “significant” than surrounding areas based on the *ecological or biological* role played by the area within the larger region where an evaluation of EBSAs is occurring). In applying the criteria, it will be necessary to determine the relative importance of specific features or places in a given ecological region on each of the criteria.

Spatial and temporal variability: It is well understood that most aspects of the marine environment are highly dynamic. In evaluating the ecological or biological significance of an area based on a particular criterion, the spatial and temporal variability of that feature should be taken into account. For many criteria, some places will have substantial variation in how they would be evaluated from year to year, season to season, or on even shorter time periods. Understanding the magnitude and time scale of these variations and how variability is incorporated into EBSA evaluation can be achieved through use of specific scientific techniques.

Precision, accuracy and uncertainty: Precision, accuracy and uncertainty of data are inter-related, but not interchangeable, concerns. Some uncertainty is due to the inherent variability of the feature or area being studied and should be reflected in the choice of conservation and management measures. However, there is also uncertainty due to the nature of the measurements taken. Measurements at a very large scale may miss important information about the occurrence of a feature. Measurements at a very fine scale may be dominated by variation at scales far smaller than are relevant to conservation and management. In addition, for many marine features, limitations in sampling gears mean that it is not possible to take accurate measures, regardless of the precision of the scale of measurement. Developments in sampling theory and survey design can be applied to deal with challenges to both the accuracy and precision of ecological data, and reduce the uncertainty in the data.

Taxonomic accuracy and uncertainty: Application of several EBSA criteria can benefit from accurate identification of marine species. It should be noted, however, that taxonomy of organisms in the marine ecosystem is generally not fully developed. This is especially true for deep-sea fauna. Also, the status of taxonomic knowledge is very different from taxon to taxon. Generally speaking, small organisms such as meiobenthic taxa are less studied than megabenthos, such as fishes.

The workshop then collectively discussed how you can define a rare feature; what types of tropical species exhibit vulnerability, fragility, sensitivity or slow recovery; what physical features in the oceans are generally areas of high productivity; and why the naturalness criterion is difficult to apply.

5.6 National EBSA exercise

Participants split into groups and, using printed maps, worked to identify areas in the Maldives that may meet the EBSA criteria. Having highlighted potential areas on their maps, they were asked to justify their selection with reference to the EBSA criteria, and then to apply a confidence rating to the information they have based their selection. At the end of the exercise, groups presented their chosen areas to the wider workshop audience. The maps resulting from this exercise are given in Annex C.1.

Following the presentations, the workshop trainers made the following observations:

- There are a small number of sites that were selected by all groups.
- The areas chosen by all the groups are noticeably concentrated in nearshore areas - is this a reflection of participants' lack of familiarity with other areas, a paucity of data, or a judgement that other areas are less important?
- Transboundary issues are important: the Maldives is important for a number of migratory species that are threatened by activities outside Maldivian waters, such as specialised fisheries.
- None of the groups identified the naturalness criteria in their selection of sites - is it because the environment is too changed already?
- Is there any reason why we shouldn't have the whole of the Maldives as an EBSA?

Plenary discussion on the outcomes of the exercise touched upon the following issues:

- Scientific data for specific sites in the Maldives is quite scarce. However, identifying areas where we don't have full confidence or extensive data is still a positive step at this stage.
- Most selected areas highlighted are very small. At a local level they are important, perhaps less so at a regional or global level.
- Data availability is a key issue in this exercise. Some sort of data is always available from someone, but it's not often available as reports, particularly on the smaller islands, and rarely publicly available. Often, knowledge is held by individuals. However, it was noted that data does not have to be written down to be of value to this process - it can be exposed through workshop discussions. Some data is held by scientific projects and initiatives (e.g., the IUCN whale shark programme), but not much is available in country. The lack of a permit system for scientific research in the Maldives means that most scientific data collection by external organisations is not made available for local use.

- How can the Maldives collate this information in preparation for a national workshop? All the information highlighted in this workshop should be integrated onto one map, particularly the areas that have high data confidence.
- Coral reef ecosystems are like an oasis in the desert, and the link between the two is often unrecognised. People are familiar with the islands so it's to be expected that people would focus on them. The Maldives has one of the biggest reef systems in the world, and is the only geopolitical system in the world that is entirely dependent on a coral reef atoll ecosystem. Can it be considered a world heritage site? And on this basis, could the entire Maldives be considered as meeting the EBSA criteria?
- Inter-reef coral areas are important for the Maldives.
- Would designating the whole of the Maldives as an EBSA limit its impact? Could we still achieve conservation goals? Much depends on what you want to manage, at what scale and against what priorities.
- Would World Heritage Site designation bring too much attention to these areas? Without proper management, these areas could be overrun by tourist activity.
- Whales and dolphins have been sighted in the deeper waters of the Maldives, and they also have to be considered in this process. The IMMA process might be helpful in this respect, and the Maldives has already been put forward as a candidate IMMA, though it is purely recognition of the scientific importance of an area for marine mammal and does not confer any management measures. However, the information can feed through to the CBD, in same way that IBA data does.
- Scale is important and must be carefully considered: what might be locally very important may be less significant at regional or global scale.

5.7 Developing a suite of national EBSAs

Participants split into groups to identify uses and pressures on the areas they described previously, and how they affect the important biological or ecological features of the area. They were then asked to consider which potential management measures could be employed to support the ecological and biological values of the area, and indicate which national-level priorities these management measures would contribute. Feedback from the groups is summarised in the tables below, and the supporting maps are provided in Annex C.2.

Table 3: Summary of outputs from group exercise to identify uses, pressures and associated impacts on biodiversity in areas they described as potentially meeting EBSA criteria - Group A

Table key: Impacts are described as negative (-) or positive (+) and at low (L), medium (M) or high (H) levels.

Area	EBSA criteria/values	Community fishing	Commercial fishing	Tourism	Ports & harbours	Pipelines	Causeways	Seismic surveys	Mining	Channels	Pollution	Reclamation	Community recreation
HPA (Nature Park)	Life history	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	TEDS	-L	-L	+L?	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+L?
	Economic	+L/M	+L/M	+M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+M
	Vulnerable	-L	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-L
Keylakunu	Uniqueness	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-M	n/a	n/a

	Economic	+L	+L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Farukolhu	Life history	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-M	-L	-L
	Productivity	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-M	-L	-L
	Economic	+L	+L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	+L/M	+L/M
Aligaa Kanduolhi	Life history	-M	-M	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	TEDS	-M	-M	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Economic	+L	+M	+M	n/a	n/a	+L	n/a	n/a	n/a	n/a	n/a	n/a
Huraa mangrove	Uniqueness	n/a	n/a	+ -L?	-H	n/a	n/a	n/a	n/a	n/a	-H	-H	n/a
	Productivity	n/a	n/a	n/a	-H	n/a	n/a	n/a	n/a	n/a	-H	-H	n/a
	Biodiversity	n/a	n/a	-H	-H	n/a	n/a	n/a	n/a	n/a	-H	-H	n/a
	Economic	n/a	n/a	+M	+H	n/a	n/a	n/a	n/a	n/a	n/a	+M-H	n/a
Dhiffushi Kanduolhi	Life history	-M	-M	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	TEDS	-M	-M	-L	-L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Economic	+L	+M	+M	+M/H	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 4: Summary of outputs from group exercise to identify uses, pressures and associated impacts on biodiversity in areas they described as potentially meeting EBSA criteria - Group B

Table key: Impacts are described as negative (-) or positive (+) and at low (L), medium (M) or high (H) levels.

Area	EBSA criteria/values	Tourism	Community fishing	Shipping	Sand extraction	Reclamation	Causeways	Pollution
SAMPA	TEDS	H-	L-	n/a	n/a	n/a	n/a	H-
	Vulnerability	H-	L-	n/a	n/a	n/a	n/a	H-
	Income	H+	M+	n/a	n/a	n/a	n/a	H-
Lankan Bayru	TEDS	H-	M-	H-	H-	H-	L-	H-
	Vulnerability	H-	M-	H-	H-	H-	L-	H-
	Income	H+	L+	n/a	M+	M+	n/a	H-
Rasfari	Uniqueness, TEDS	H-	M-	n/a	n/a	L-	n/a	H-
Hurai Faru	Life history, TEDS	L-	M-	n/a	H-	n/a	n/a	L-
	Income	H+	H+	n/a	H+	n/a	n/a	H-
Maamanagau	Life history, vulnerability	H-	L-	n/a	n/a	L-	n/a	L-
Laamu Atoll	Uniqueness, life history, naturalness	L-	L-	L-	M-	L-	M-	M-
	Income	M+	M+	M+	L+	L+	H+	H-
North & South Male Atoll	All criteria	H-	H-	H-	H-	H-	M-	H-
	Income	H+	H+	H+	H+	H+	H+	H-
Fuvamula	All criteria except life history and productivity	M-	L-	L-	M-	n/a	n/a	M-
	Income	H+	H+	M+	L+	n/a	n/a	H-
Lhaviyani Atoll	TEDS, vulnerability	H-	H-	H-	H-	H-	n/a	H-
	Income	H+	H+	H+	M+	M+	n/a	H-

Table 5: Summary of outputs from group exercise to identify uses, pressures and associated impacts on biodiversity in areas they have described as potentially meeting EBSA criteria - Group C

Table key: Impacts are described as negative (-) or positive (+) and at low (L), medium (M) or high (H) levels.

Area	EBSA criteria/values	Tourism	Harbours	STP	Sand extraction	Recreation	Community fishing	Commercial fishing	Pollution	Farming	Surfing	Illegal trawling	Poaching
Filladhoo Atoll	Uniqueness	H-	n/a	n/a	n/a	n/a	n/a	n/a	M	n/a	n/a	n/a	n/a
	Vulnerable	H-	n/a	M-	n/a	n/a	L-	M-	n/a	n/a	n/a	n/a	n/a
	Income	H+	n/a	n/a	n/a	n/a	M+	H+	n/a	n/a	n/a	n/a	n/a
Goidhoo Atoll	Life history	n/a	n/a	n/a	n/a	n/a	n/a	H-	n/a	n/a	n/a	n/a	n/a
	Diversity	H-	H-	M-	M-	H-	M-	H-	L-	H-	n/a	n/a	n/a
	Income	H+	M+	n/a	M+	M+	M+	M+	n/a	M+	n/a	n/a	n/a
Huraa Faru	Uniqueness	L-	n/a	n/a	M-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Endangered	L-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Income	H+	n/a	n/a	M+	n/a	n/a	H+	n/a	n/a	n/a	n/a	n/a
L. Gaadhoo	Life history	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	H-
	Endangered	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	H-
	Income	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Satho Rahaa	Productivity	n/a	n/a	n/a	n/a	n/a	n/a	M-	L-	n/a	n/a	M-	n/a
	Income	n/a	n/a	n/a	n/a	n/a	n/a	H+	n/a	n/a	n/a	n/a	n/a
Fuamula	Uniqueness	n/a	M-	L-	n/a	H-	n/a	n/a	L-	H-	n/a	n/a	n/a
	Diversity	n/a	n/a	L-	n/a	L-	L-	n/a	L-	H-	n/a	n/a	n/a
	Income	H+	M+	n/a	n/a	n/a	M+	n/a	n/a	H+	M+	n/a	n/a
GDH. Gan	Life history	n/a	n/a	n/a	L-	n/a	n/a	n/a	n/a	n/a	n/a	n/a	H-
	Diversity	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	H-
	Income	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	H+	M+	n/a	n/a
DDU. Tila	Productivity	n/a	n/a	n/a	n/a	n/a	n/a	M-	L-	n/a	n/a	M-	n/a
	Income	n/a	n/a	n/a	n/a	n/a	n/a	H+	n/a	n/a	n/a	n/a	n/a

Following group feedback to the wider group, participants were invited to consider the following points as part of a plenary discussion:

- 1) Would it be useful to have a national EBSA workshop?
- 2) If yes, who should organise it?
- 3) Would it require a data gathering exercise? If so, by whom? Internal or externally facilitated?
- 4) How can it be linked to other agendas as well as biodiversity conservation? (e.g., economic development, waste management, climate change adaptation)

The workshop participants agreed that a national EBSA process was desirable. It was also agreed that a broad range of stakeholders need to be involved in that process: it will be important to include private parties such as consultancies working on EIAs who are familiar with the local environment. Whether the process is facilitated internally or externally is secondary to the process put in place to ensure all stakeholders are involved in the exercise. In preparation for a national exercise, it may be prudent to consider convening a series of smaller workshops for each atoll community to ensure all relevant local knowledge is included.

It was noted by participants that current protocol dictates that the government ministries are the focal point for CBD activities; there is no other route for other bodies to approach the CBD. However, workshops organised by ministries are often driven by a political agenda and mainly involve ministry staff, so are therefore not sufficiently representative of the wider stakeholder community. The volume of different protocols requiring government and community input is becoming unmanageable, so a national exercise must be done thoroughly to make it a worthwhile effort. Participants also considered it important to link climate change impacts to ecosystem health but noted that CBD is currently not responding on this issue.

It was agreed that a call for data should be issued prior to any national EBSA workshop, with a scope wide enough to include those external universities and research bodies that work in the Maldives but have not shared their data with the Maldives. It is important to collect metadata, even if the data itself is difficult to access - the data collection needs to be approached holistically so that the data gathering exercise is done only once.

In terms of baseline data, remote sensing data is available for the Maldives region, collected by a third party. It is mainly land-based but has sufficient coverage to be useful for reef areas. Further data collection or remote sensing information may be available through third parties.

5.8 Marine spatial planning

Prof Johnson explained that the CBD EBSA Repository (<http://www.cbd.int/ebsa>) is intended as one possible starting point for area-based planning and management considerations. Classifying EBSAs into different categories based on the features fixed or dynamic properties can be helpful, as well as determining transboundary issues. Systematic conservation planning is a structured stepwise approach involving developing goals, objectives and targets before identifying possible conservation sites and collections of sites or networks. EBSAs can contribute to national integrated ocean management processes including identifying requirements for environmental impact assessment, additional research needs and the need for monitoring control and surveillance. Marine spatial planning and strategic environmental assessment are the responsibility of the regulator, whereas undertaking environmental impact assessment and implementing environmental management systems falls to the operator, developer or contractor.

Marine spatial planning is defined as ‘a public process of analysing and allocating the spatial and temporal distribution of human activities that are usually specified through a political process’. Thus MSP is a practical method for rational organisation of marine space, balancing the demands of development activities with each other and with protection of marine ecosystems to achieve social and economic objectives. MSP is a future-oriented process and selects appropriate management strategies. Ehler and Douvère (2009)² established UNESCO’s step-by-step approach setting out a 10-step guide. Prof. Johnson talked through the different steps and highlighted examples of where EBSAs have been included as part of baseline environmental information (e.g. Operation Phakisa in South Africa; www.operationphakisa.gov.za).

² Ehler, C. & Douvère, F. (2009) Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides no. 53, ICAM Dossier no. 6. Paris: UNESCO (English).

5.9 Conclusions and next steps

Prof. Johnson summarised the conclusions of the workshop as a series of recommendations and next steps, as follows:

1. This workshop is a consideration on how to meet NBSAP2 targets and fulfilling The Maldives commitment to the Aichi Targets;
2. We should note Maldives ratification of instrument for CMS and recommend that the Government advocates priorities identified by the workshop;
3. The report of this SOI Workshop will be finalised and sent to participants inviting comment and to experts not present for information;
4. It is important to create opportunities to add further information and fill gaps;
5. Consider putting in place a 'sharing mechanism' to achieve better coordination of data between Ministries at a national level;
6. Consider input to CBD SBSTTA 24 or COP 15: Information paper and/or side event;
7. Seek funding to convene a National EBSA Workshop for the Maldives.

The workshop concluded by revisiting the long list of expectations put forward by the group participants on Day 1, and a brief discussion of whether those expectations had been met. Workshop participants agreed that the three days' training had addressed the majority of points raised, and that the workshop provided an excellent starting point for further action.

5.10 Closing remarks

The workshop chair, Ms Atho Mohamed congratulated the participants for their hard work over the past three days, and extended her thanks to the workshop trainers for providing a highly relevant and timely training event on marine biodiversity conservation issues, and practical steps that the Maldives can consider taking forward to better protect their natural resources.

Annex A: List of workshop participants

Name	Position	Affiliation
Mr. Mohamed Rasheed	Director General	Ministry of Gender, Family & Social Services
Mr. Abdulla Mohamed	Senior Executive Director	Ministry of Tourism
Mr. Mohamed Sinan	Environment Officer	Ministry of Tourism
Ms. Fathimath Saeedha	National Coordinator of GEF Small Grants Programme	UNDP
Mr. Mahid Abdul Rahman	Senior G.I.S Officer	EPA
Mr. Ali Nishan	Assistant Environment Officer	EPA
Mr. Ahmed Shafiu	President	Maldives Fishermen NGO
Mr. Ishaq Ahmed	Director General	Ministry of Communication, Science and Technology
Ms. Fathimath Shanna	Assistant Director	Maldives Land and Survey Authority
Ms. Hanan Shafeeg	Assistant Planner	Ministry of National Planning and Infrastructure
Ms. Nafha Aujaz	Environment Analyst	Ministry of National Planning and Infrastructure
Ms. Hawwa Raufath Nizar	Research officer	Ministry of Fisheries, Marine Resources and Agriculture
Mr. Mohamed Ahusan	Senior Research Officer	Marine Research Centre
Mr. Mohamed Shimal	Senior Research Officer	Marine Research Centre
Mr. Shafee Ali	Outreach officer	Baa Atoll Biosphere Reserve Office
Mr. Farih Ahmed Rasheed	Ranger	Baa Atoll Biosphere Reserve Office
Ms. Rasheedha Najeeb	Statistical officer	National Bureau of Statistics
Mr. Hassan Ahmed		Save the Beach Maldives NGO
Ms. Aminath Shazly	Head of Department of Environment and Natural Science	Maldives National University
Captian Ahmed Shiyam	Captian	Maldives National Defence Force
Ms. Hawwa Izwath	Planning Officer	Local Government Authority
Mr. Hussain Zahir	Director, LaMer Group Pvt Ltd	International Coral Reef Initiative
Mr. Hussain Rilwan Thoha	Youth Executive	Ministry of Youth, Sports and Community Empowerment
Mr Imad Mohamed	Monitoring and Evaluations Associate	IUCN Maldives
Ms. Umaira Ahmed	Environment Analyst	Ministry of Environment
Ms. Fazeela Ahmed Shaheem	Senior Legal Counsel	Ministry of Environment
Ms. Lisama Sabry	Environment Analyst	Ministry of Environment

Mr Saaif Mohamed Rasheed	Assistant Environment Officer	Ministry of Environment
Ms. Ilham Atho Mohamed	Assistant Director	Ministry of Environment
Ms. Muhusina Abdul Rahman	Assistant Director	Ministry of Environment
Ms Hafna Hassan	Ozone Officer	Ministry of Environment
Ms Jessica Haines	Project Manager	The Manta Trust
Mr Ahmed Shamilh	Independent expert	Independent expert
Prof. David Johnson	Trainer	GOBI Secretariat
Dr Piers Dunstan	Trainer	GOBI / CSIRO
Dr Vikki Gunn	Trainer	GOBI Secretariat

Annex B: Workshop programme

Workshop Chair: Ilham Atho Mohamed

Monday 17 June 2019	
09:00 - 09.30	<p>Agenda Item 1: Opening ceremony</p> <ul style="list-style-type: none"> • Recitation of Quran • Introduction and welcome by Ilham Atho Mohamed, Assistant Director, Ministry of Environment, Maldives • Statement by Joseph Appiott on behalf of the Executive Secretary of the Convention on Biological Diversity (CBD) • Statement by David Johnson, Global Ocean Biodiversity Initiative (GOBI) • Opening remarks by Abdulla Naseer, Minister of State for Environment, Maldives <p><i>Group photo and screening of CBD's film "Science in pursuit of special places in the ocean"</i></p>
	-- Break --
09:30 - 10:15	<p>Agenda Item 2: Workshop background, objectives, and expected outputs</p> <p>2.1 Presentation on workshop background, objectives, scope and approach (15 minutes) <i>(by David Johnson, Global Ocean Biodiversity Initiative)</i></p> <p>-- Question and answers --</p> <p>2.2 Roundtable introduction of participants (10 minutes)</p> <p>2.3 Plenary discussion on the needs and expectations of participants (20 minutes)</p> <ul style="list-style-type: none"> • What do participants expect to learn and accomplish at the workshop? • How can the workshop outputs help their work?
10:15 - 11.15	<p>Agenda Item 3: Global, regional and national context for marine and coastal biodiversity in the Maldives</p> <p>3.1 Presentation on the global context (remote presentation by Joseph Appiott, CBD Secretariat) (10 minutes)</p> <ul style="list-style-type: none"> • Convention on Biological Diversity and the Aichi Biodiversity Targets • Sustainable Development Goals <p>3.2 Presentation on the regional context for the Maldives <i>(by David</i></p>

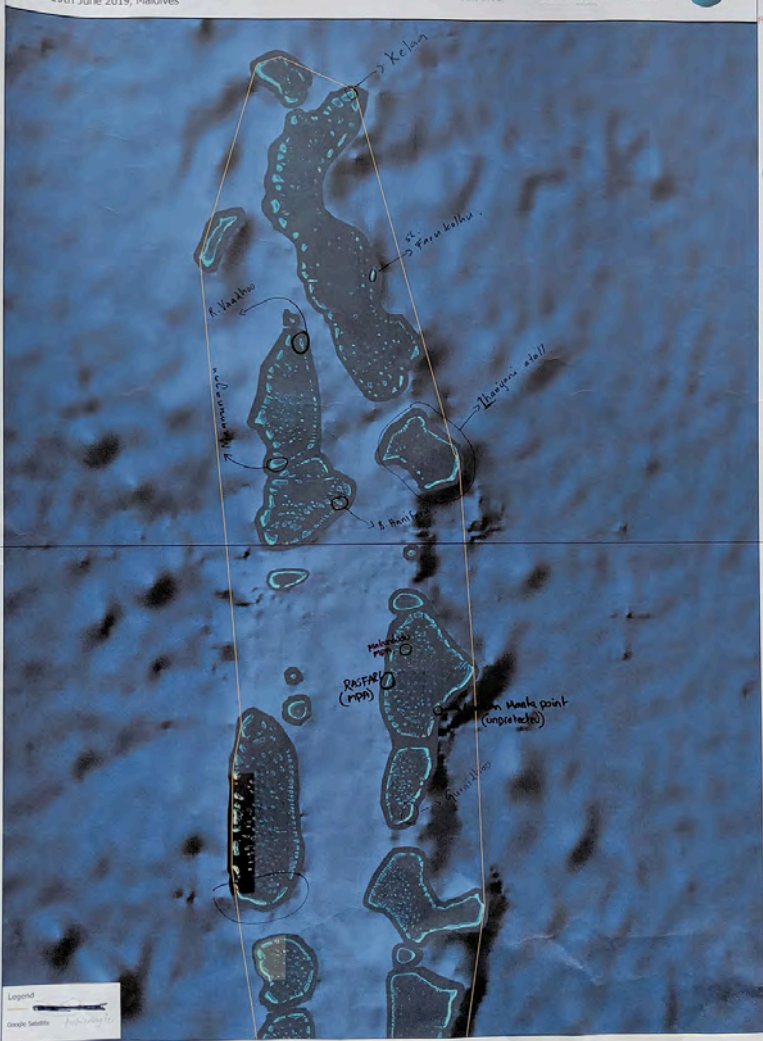
	<p><i>Johnson, GOBI Coordinator</i>) (20 minutes)</p> <ul style="list-style-type: none"> • Regional goals, strategies and initiatives • CBD Regional EBSA workshops for the southern and north-east Indian Ocean <p>3.3 Presentation on the national context (Ilham Atho Mohamed, Assistant Director, Ministry for Environment) (20 minutes)</p> <ul style="list-style-type: none"> • Existing national priorities and goals for marine biodiversity • Existing institutions relevant to management of marine biodiversity <p>-- Questions and answers --</p>
10:45 - 11:15	Coffee break
11:15 - 12:30	<p>Agenda item 4: Planning for a national EBSA exercise</p> <p>Group work on prioritisation for a national EBSA exercise (<i>led by Piers Dunstan, CSIRO</i>)</p> <p>Participants split into groups and, based on the national priorities discussed earlier in the day, identify which of these priorities are compatible/complementary and which are potentially conflicting.</p> <p>Groups report back on their top priorities at 12:10</p>
12:30 - 13:30	Lunch
13:30 - 15:00	<p>Agenda item 5: New information and developments since the NE Indian Ocean EBSA workshop</p> <p>5.1 Development of regional biogeographies and conceptual models of Maldives Bioregions (<i>by Piers Dunstan, CSIRO</i>) (15 mins)</p> <p>5.2 Datasets on key environmental and human use drivers in the Indian Ocean (<i>by Piers Dunstan, CSIRO</i>) (15 mins)</p> <p>5.3 Opportunities to integrate national programs into the broader regional context (<i>by Piers Dunstan, CSIRO</i>) (10 mins)</p> <p>5.4 How information and tools from GOBI's research programme can be applied to managing marine and coastal biodiversity – potential applications of EBSA data to address national priorities (<i>by Piers Dunstan, CSIRO</i>) (20 minutes)</p> <p>5.5 Understanding and mapping out the values of marine biodiversity using the criteria for ecologically or biologically significant marine areas (<i>by David Johnson</i>) (20 minutes)</p> <p>-- Questions and answers --</p>
15:00 - 15:30	Coffee break
15:30 - 17:00	Agenda item 6: National EBSA exercise

	<p>Group exercise on scoping potential areas meeting the EBSA criteria in the Maldives (<i>coordinated by David Johnson, with support of resource speakers</i>)</p> <p>Participants split into groups and, using printed maps, GIS software and projectors, begin to identify areas in the Maldives that may meet the EBSA criteria</p>
19.45	Reception and workshop dinner

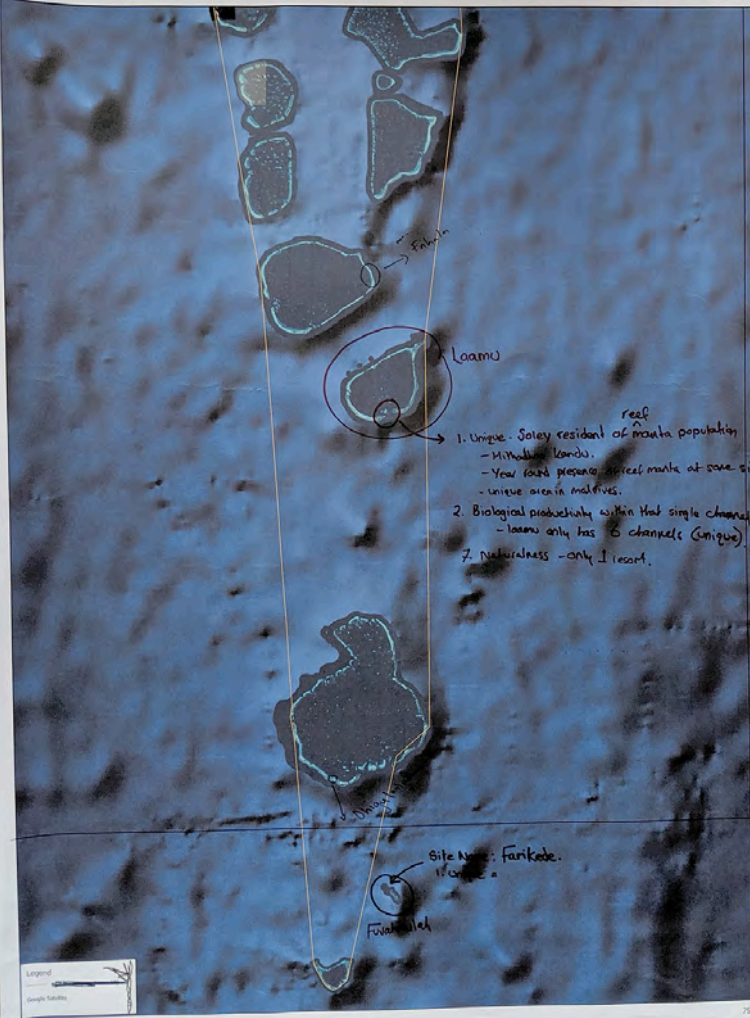
Tuesday 18 June 2019	
09:00 - 10:30	<p>Agenda item 6 (continued): National EBSA exercise</p> <p>Continue group exercise on scoping potential areas meeting the EBSA criteria in the Maldives</p>
10:30 - 11:00	Coffee/tea break
11:00 - 12:30	<p>Agenda item 6 (continued)</p> <ul style="list-style-type: none"> • Continue group exercise • Feedback from groups and discussion (30 mins)
12:30 - 13:30	Lunch
13:30 - 15:30	<p>Agenda item 7: Developing a suite of national EBSAs</p> <p>Group exercise on developing a suite of national EBSAs that could be submitted to the CBD, including an analysis of pressures and mitigation methods (<i>coordinated by David Johnson, with support of resource speakers</i>)</p>
15:30 - 16:00	Coffee break
16:00 - 17:00	<p>Agenda item 7 (continued)</p> <ul style="list-style-type: none"> • Feedback from groups, sharing of results, peer-group validation

Wednesday 19 June 2019

09:00 - 10:30	<p>Agenda item 8: Marine spatial planning</p> <p>8.1 Presentation on marine spatial planning, links to the EBSA process, and potential to take into account climate change mitigation and adaptation (<i>by David Johnson, GOBI Coordinator</i>) (20 minutes)</p> <p>8.2 Current spatial planning activities in the Maldives (by Nafha Aujaz, Environment Analyst, Ministry of National Planning and Infrastructure) (20 minutes)</p> <p>8.3 Presentation on technical aspects of marine spatial planning (<i>by Ahmed Shaig, GIS Consultant, Ministry of Environment</i>) (20 minutes)</p> <p>8.4 Examples of application of MSP in the context of SIDS (<i>by Piers Dunstan, CSIRO</i>) (20 minutes)</p> <p>8.5 Introduction to group exercise (10 minutes)</p>
10:30 - 11:00	Working coffee break
11:00 - 12:30	<p>Agenda item 8 (continued)</p> <p>Group exercise to consider current and future marine spatial requirements in the Maldives, and potential conflicts.</p> <p>Groups report back to plenary at 12.00 (30 minutes).</p>
12:30 - 13:30	Lunch
13:30 - 14:30	<p>Agenda item 9: Practicalities and challenges of applying the results of this workshop</p> <p>Plenary discussion of issues, for example:</p> <ul style="list-style-type: none"> • Funding • Approval of / cooperation with other government departments • Economic / commercial factors • Timing
14:30 - 15:15	<p>Agenda item 10: Next steps for the Maldives</p> <ul style="list-style-type: none"> • Recommendations from the workshop • Next steps
15:15 - 15:30	<p>Agenda item 11: Workshop closing remarks</p> <ul style="list-style-type: none"> • Closing remarks by Ministry of Environment



- Vaikaradhoo
1. Seagrass
 2. Seagrass
- Kelaa
1. mangroves, Sids, mangrove,
 2. beach, reef + lagoon
- R. Vandhoo
1. bioluminescence plankton (only observed on this island)
- Sh. Farukalhu
1. nursing ground for big sharks
 2. reef
- R. Mammunagaa
1. juvenile reef mantas
 2. reef
 3. reef
 4. mantas reach maturity after 15 years
- Leaban Manta point
1. Key courtship + mating ground for mantas
- R. Rasthi
1. oceanic whitetip shark
 2. very cleaning station (20-30m deep) (mantas)
 3. shallow
- Makunudu
1. hawksbill turtles
- Hanigama atoll
1. green sea turtles are more abundant in this atoll because of the presence of seagrass beds.
- Guraidhoo
1. juvenile feeding ground for reef mantas
- Sprota region
1. whale sharks
 2. whale sharks

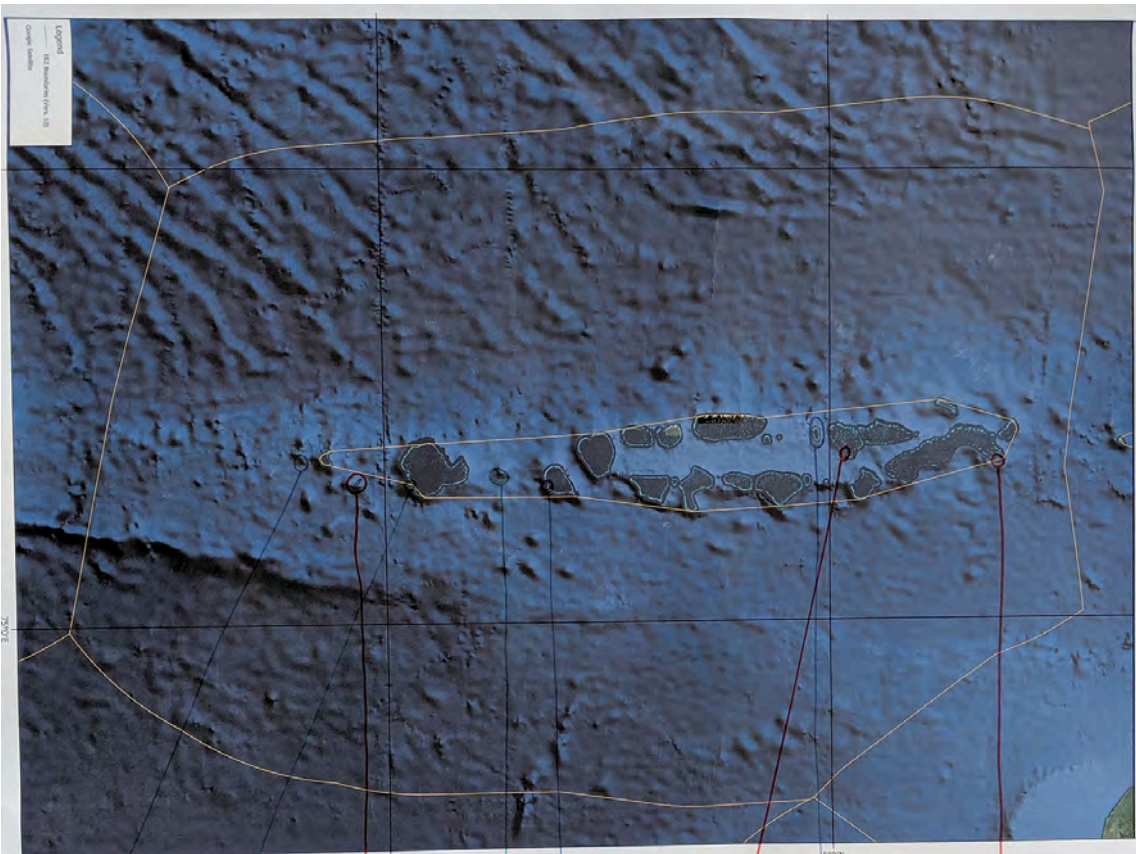


Th. Faha la
394 whale sharks

- reef
1. Unique. Solely resident of Maala population
 - 14 months records.
 - Year class presence of reef marks at some sites
 - unique area in Maldives.
 2. Biological productivity within that single channel
 - Loamu only has 6 channels (unique)
 7. Naturalness - only 1 resort.

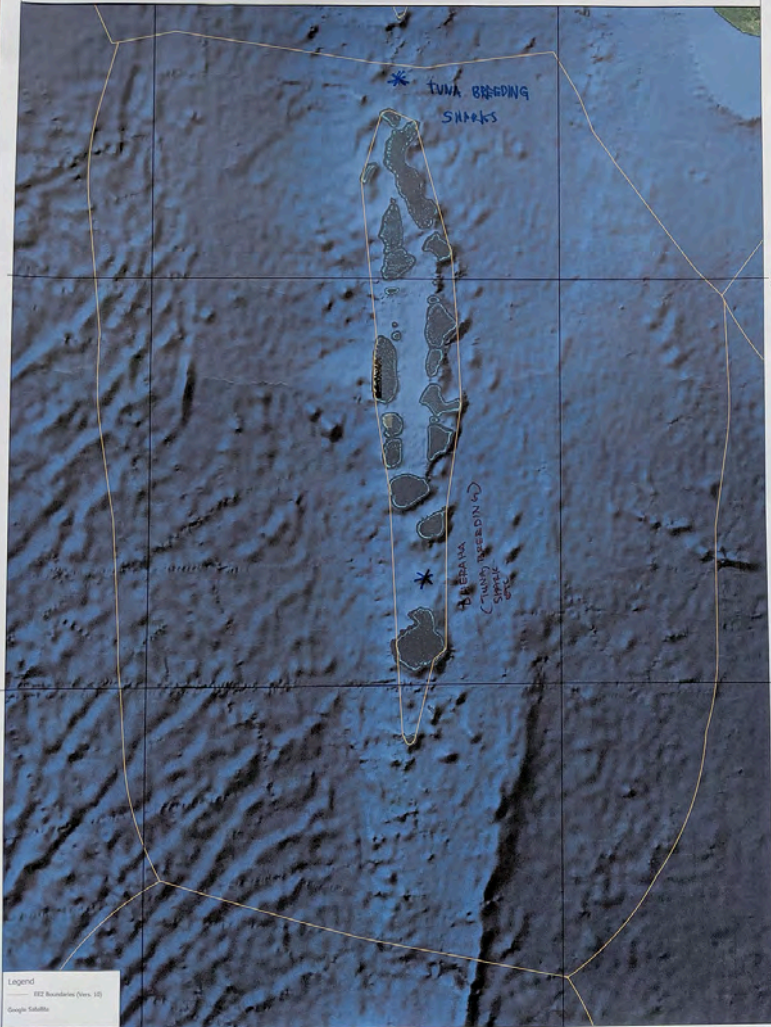
9th. Ohigalaabandoo
1.
7.

1. unique = *pristigaster promethus* (Kattalhi)
2. common: hammerheads, tiger sharks, bonfish, whale sharks
3. silvery sharks, bonnet sharks
4. oceanic mantas - attracted to fishing outside industry Sri Lanka (close proximity)
 - life history a good way - C-13 genus
5. no results.
6. refer to species in 6.

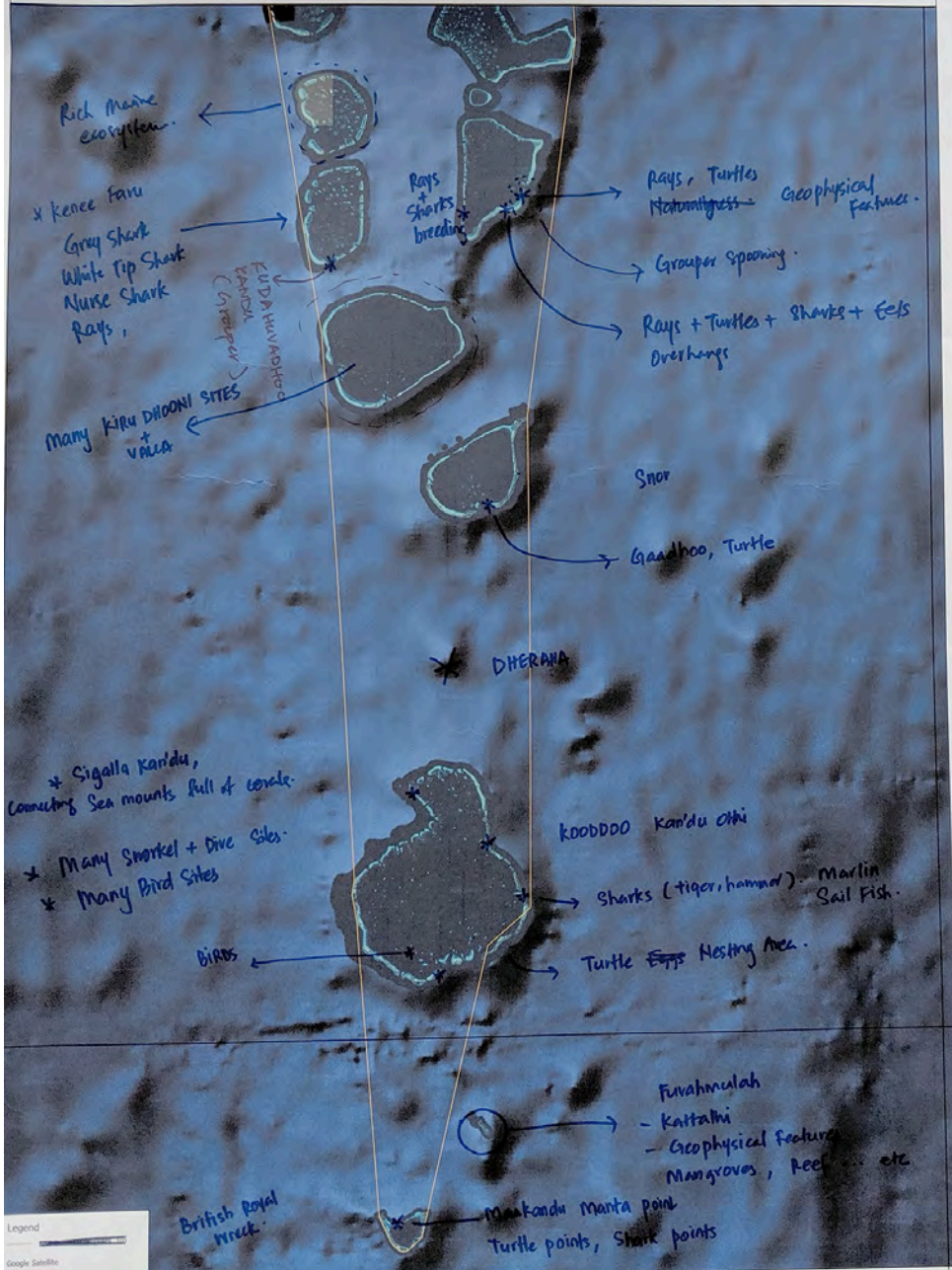


- ADDU THILA (5)
 - * Skipjack throughout the year.
 - * Potential breeding point of skipjack tuna.
- FVA MULA CITY (1,6)
 - * Rich in marine life
 - * Rare species life
 - * Treasuries
 - * Sun fish
 - * Whale shark
 - * Oceanic Manta
 - * Tiger Shark
 - * Coral diversity
- SATHO RAHAA (5)
 - * Skipjack throughout the year.
 - * Potential breeding point for skipjack and whale shark.
- HURAA FARU
 - * Manta
 - * Whaleshark
- FILLADHOO/DHAPPARU (1,4)
 - * Sea birds (1)
 - * Mangroves (4)
- GDH. GAN (2,6)
 - * Turtle breeding
 - * Wave break (surf)
 - * Dive site
 - * Rich marine life
 - * Gmpon shark
- L. GAADHOO (3,2)
 - * Turtle nesting
 - * Gmpon shark
- GOIDHOO ATOLL
 - * Groupers breeding
 - * Whale shark
 - * Tiger shark
 - * Mangrove
 - * Triton shell
 - * Cabin (wreck)

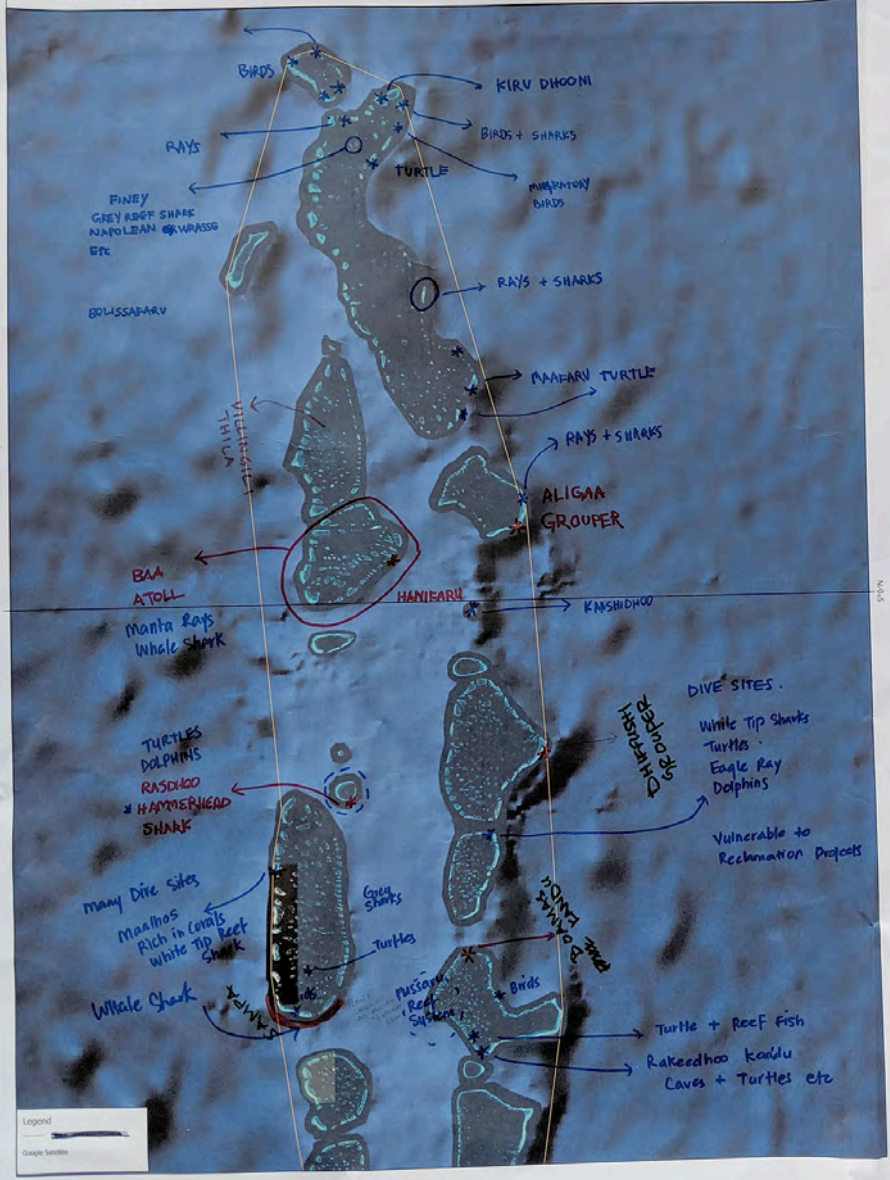
(C)



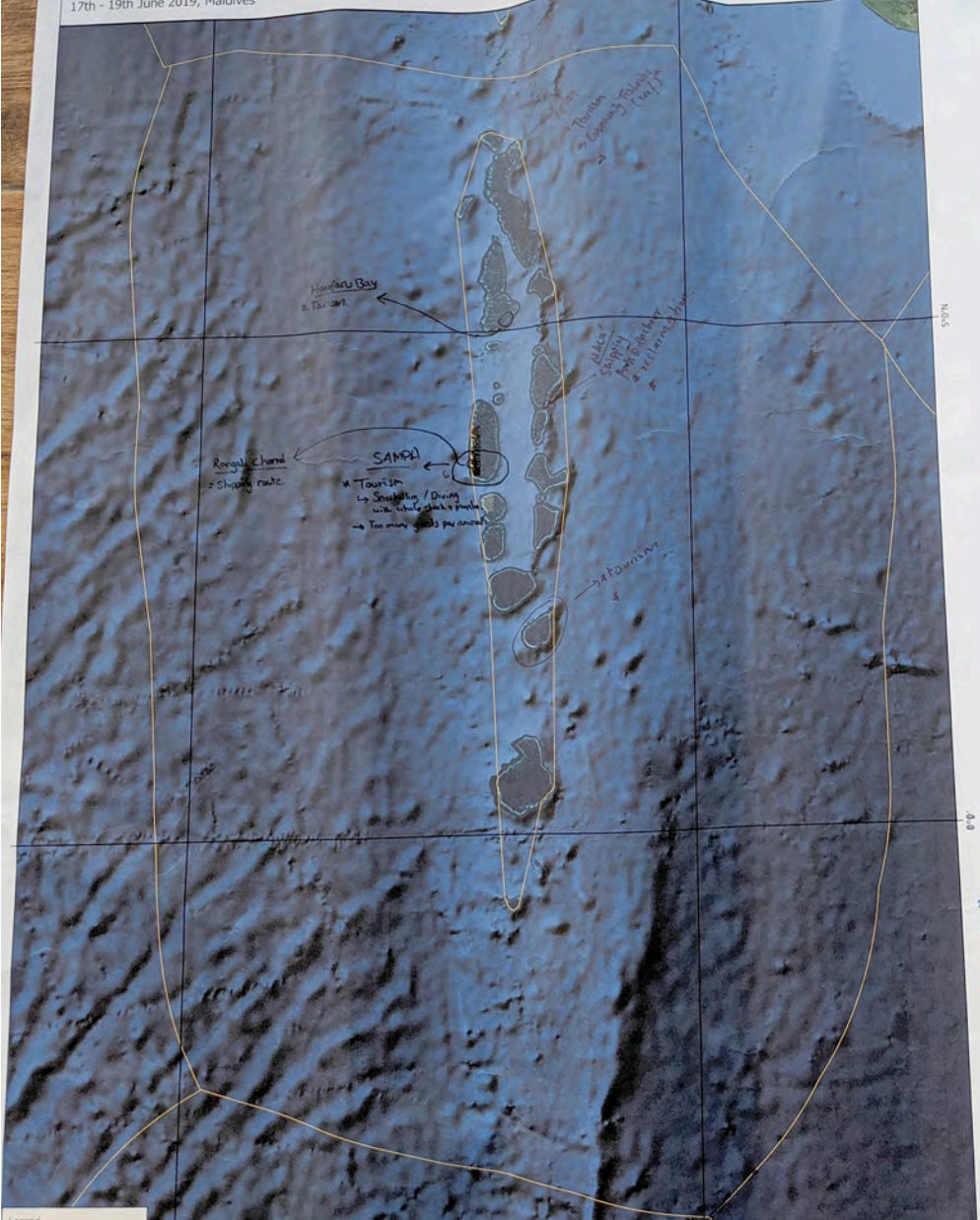
D



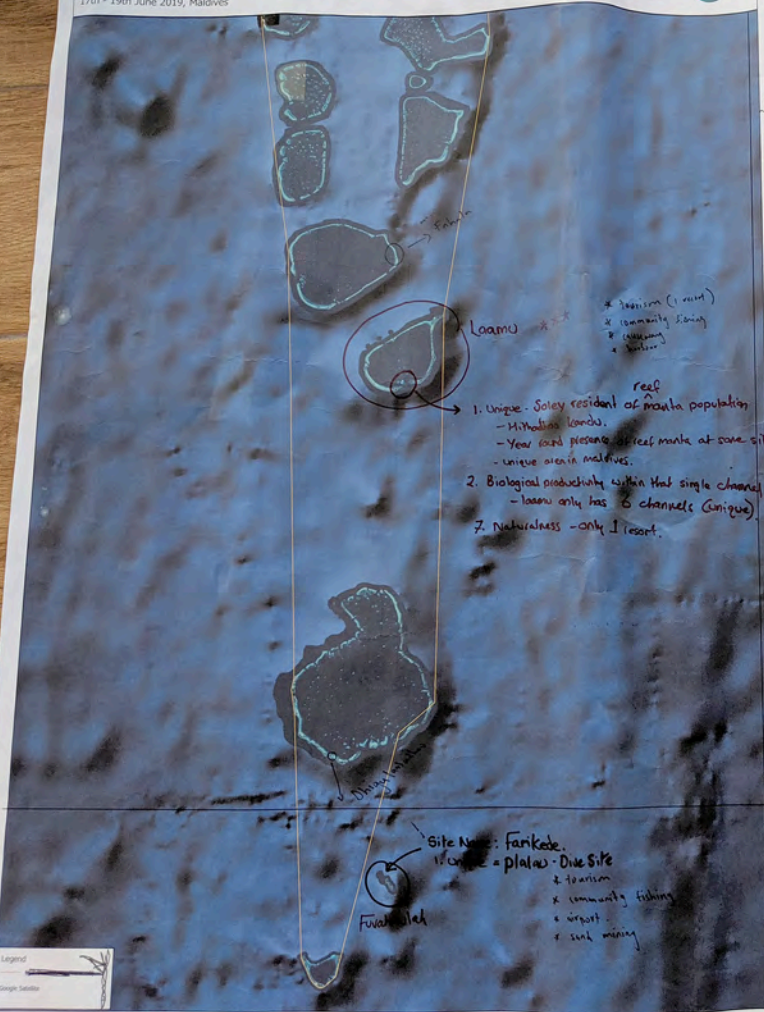
(D)



(B)



- Furamulah
- * community activities
 - * ~~business~~
 - * tourism
 - *



Th. Fuhela ***
3pt whale sharks

Sih. Dhigulaadho *
1.
7.

Fuvah mulah

- 1. unique = *prionothictys prionothicus* (Kuttelhi) ***
- 6. mantas, hammerhead, tiger sharks, snappers, whale sharks, silvertip sharks, dusky sharks
- 4. oceanic mantas → reference to fishing manta industry in Lanka (class) → life history & need every ~ 5-6 years
- 7. no results.
- 5. refer to species in 6.



ADDU THILA (5) *
 + Skipjack throughout the year.
 + Potential breeding point of skipjack tuna.

FUA MULA CITY (1,6) ***
 + Rich in marine life
 + Rare species life
 + Treasures
 + Sun fish
 + Whale shark
 + Oceanic Manta.
 + Tiger Shark
 + Coral diversity

SATHO RAHAA (5) *
 + Skipjack throughout the year.
 + Potential breeding point for skipjack and whale shark.

HURAA FAKU (3,1) *
 + Manta.
 + Whale shark.

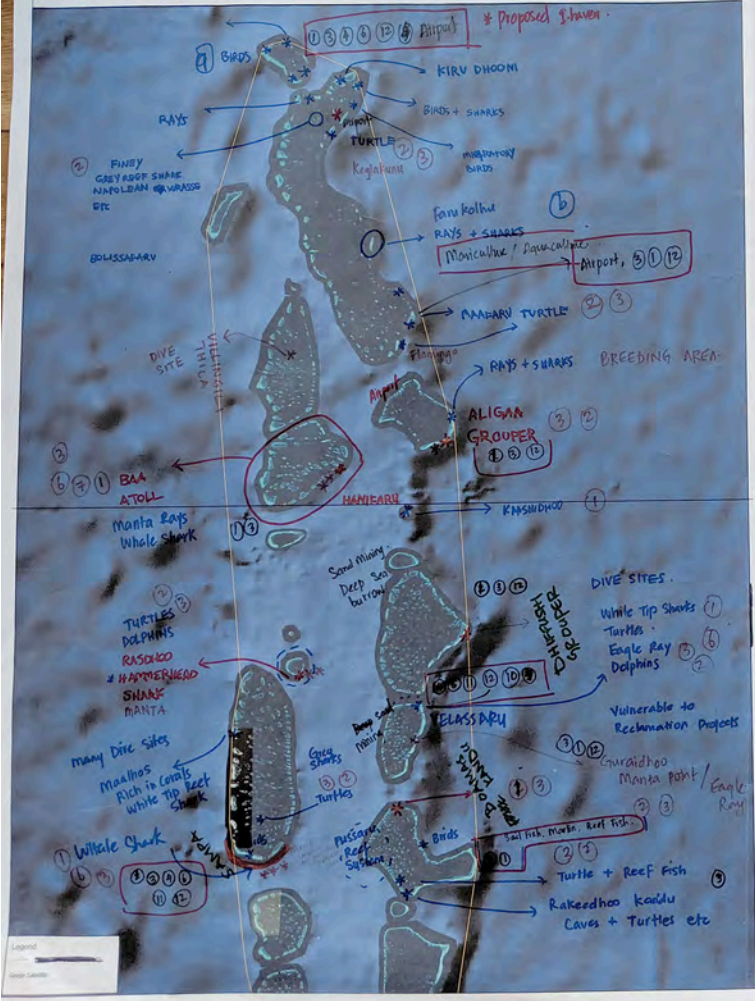
FILADHOO/DHAPPARU (1,4) *
 + Sea birds (1)
 + Mangroves (4)

GAADHOO ATOLL (6,2) *
 + Groupers breeding
 + Whale shark
 + Tiger shark
 + Mangrove
 + Triton shell
 + Cabin (wreck)

L. GAADHOO (3,2) ***
 + Turtle nesting
 + Gintpos shark

GDH. GAN (2,6) *
 + Turtle breeding
 + Wave break (surf)
 + Dive site
 + Rich marine life
 + Custom shark

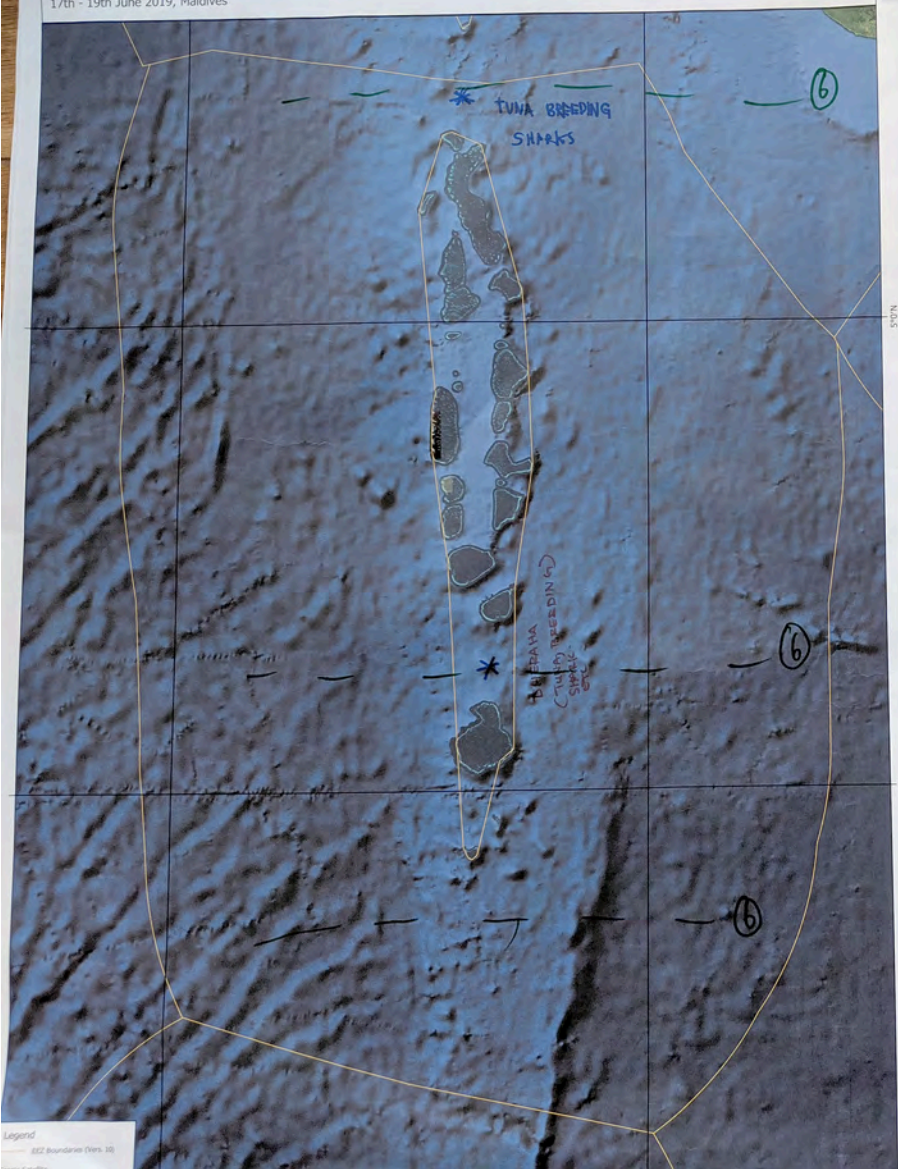
(C)



(D)

1. Uniqueness / Rarity
 2. Special importance of life history stages of species
 3. Importance for threatened, endangered/declining species / habitats
 4. Vulnerability, fragility, sensitivity / slow recovery
 5. Biological Productivity
 6. Biological Diversity
 7. Naturalness
10. Channels → Natural channels all around Atolls
4. Harbours → almost all inhabited islands
3. Almost all atolls - close to potential Tourism EBSA sites
- * Airport Dev. projects. Reclamation, reef destruction ... etc
Loss of biodiversity.
- * Sand Mining Areas
- | | | |
|----------|--|--------------|
| positive | | |
| H + | | H - Negative |
| M + | | M - |
| L - | | L + |
| NA | | |
- 1, 3, 4, 6, 7, 8, 10, 11, 12

(D)



--- Shipping