



USAID
FROM THE AMERICAN PEOPLE

Action and Management Plan

Fuvahmulah Biosphere Reserve

May 2023



This page is intentionally left blank

1. INTRODUCTION.....	Error! Bookmark not defined.
1.1 VISION.....	Error! Bookmark not defined.
1.2 MISSION.....	Error! Bookmark not defined.
2. BIOSPHERE RESERVE	Error! Bookmark not defined.
3. PEOPLE & HERITAGE	Error! Bookmark not defined.
4. SWOT ANALYSIS.....	Error! Bookmark not defined.
5. FUVAHMULAH BIOSPHERE RESERVE ACTION PLAN.....	Error! Bookmark not defined.
6. IMPLEMENTATION PLAN.....	Error! Bookmark not defined.
6.1 GOVERNANCE	Error! Bookmark not defined.
6.2 KEY STAKEHOLDERS AND RESPONSIBILITIES.....	Error! Bookmark not defined.
6.3 INSTITUTIONAL AND FINANCIAL FRAMEWORK	Error! Bookmark not defined.
6.4 COMMUNICATION AND OUTREACH.....	Error! Bookmark not defined.
6.5 BUSINESS AND MARKETING.....	Error! Bookmark not defined.
6.6 BUDGET ESTIMATES AND RESOURCE MOBILIZATION.....	Error! Bookmark not defined.
6.7 RESEARCH AND MONITORING.....	Error! Bookmark not defined.
6.8 TECHNOLOGY NEEDS	Error! Bookmark not defined.
6.9 HUMAN RESOURCE NEEDS.....	Error! Bookmark not defined.
7. MONITORING & EVALUATION	Error! Bookmark not defined.
8. INDICATORS	Error! Bookmark not defined.
ANNEXES	Error! Bookmark not defined.
ANNEX 1: FORECASTED BUDGET ESTIMATES FOR GOALS IMPLEMENTATION.....	Error!
Bookmark not defined.	
ANNEX 2: FORECASTED BUDGET ESTIMATES FOR ADMINISTRATIVE MANAGEMENT OF FUVAHMULAH BIOSPHERE RESERVE.....	Error! Bookmark not defined.
REFERENCES	103

List of figures

Figure 1: Zonation maps with core areas, buffer zones and transition areas sent to UNESCO

List of tables

Table 1: Core areas, buffer zones, and their significant features

Table 2: Significant Land Uses and Heritage in Fuvahmulah by Ward

Table 3: Heritage recorded in Fuvahmulah

Table 4: Key stakeholders for implementing the action plan

Table 5: Responsibilities of key stakeholders for implementing the action plan

Table 6: Strategic Communication Matrix

Table 7: Estimated annual programme budget

Table 8: Staff with functions for Fuvahmulah Biosphere Reserve management in January 2023

1. INTRODUCTION

Fuvahmulah was officially declared a UNESCO Biosphere Reserve on 28 October 2020 at the 32nd Session of the UNESCO International Coordinating Council of the Man and the Biosphere (MAB) Programme (IUCN 2021). The MAB programme aims to set a scientific basis for the improvement of the relationship between people and their environment at the global scale through three key functions:

- Conservation of biodiversity and cultural diversity
- Economic development that is socio-culturally and environmentally sustainable
- Logistic support, underpinning development through research, monitoring, education, and training

This document outlines the ten-year Action Plan for the Fuvahmulah Biosphere Reserve. The Action Plan was formulated through an extensive consultation process. Internal and external stakeholder consultations informed the goals and actions for the management of the Biosphere Reserve for the next 10 years. The Fuvahmulah dossier (MoE 2019) submitted to UNESCO MAB Programme, Technical Guidelines for Biosphere Reserves (UNESCO 2021), Periodic Review for Biosphere Reserves (UNESCO 2013), and the Ten-Year Periodic Review of UNESCO Baa Atoll Biosphere Reserve (MoE 2022) were key resources used in preparing this Action Plan. A SWOT analysis was undertaken for Fuvahmulah to inform the planning process.

The Action Plan outlines the goals and objectives of the Fuvahmulah Biosphere Reserve. The goals will contribute to achieve the three functions of the MAB programme. Each goal has a key objective and planned actions for implementation.

1.1 VISION

Fuvahmulah is sustained as a unique and spectacular natural, social, and cultural wonder that provides exceptional quality of life for residents and visitors.

1.2 MISSION

The mission is to:

Establish leadership, knowledge, community engagement, and finance to conserve the natural and cultural capital embodied in Fuvahmulah Biosphere Reserve, promote sustainable livelihoods, and demonstrate sustainable development.

2. BIOSPHERE RESERVE

Fuvahmulah was officially declared a UNESCO Biosphere Reserve on 28 October 2020. The designation of UNESCO Biosphere Reserve in Fuvahmulah will help:

1. Achieve sustainable development by ensuring coral reef conservation as the primary basis for the country's key economic sectors and improvement of livelihoods.
2. Facilitate a decentralised system for coral reef management by ensuring equitable benefits to local communities from sustainable use of coral reef resources
3. Increase of reef based environmental research and awareness by enhancing public support for marine conservation, thus securing a vibrant green economy (IUCN 2021).

Fuvahmulah encompasses a unique tropical small island coral reef ecological system of significance for biological diversity conservation. The Fuvahmulah Biosphere Reserve will contribute to substantial regional and national coral reef biodiversity conservation due to the presence of highly diverse complex marine, terrestrial and reef ecosystems covering 461.6 hectares of coral reef and 141.4 hectares of mangroves and wetlands (MEE 2015a). These reef ecosystems are home to important populations of nationally and internationally significant species such as sharks (mainly tiger shark, thresher shark and whale sharks), oceanic manta rays, migratory birds, and mangroves. At national level, Watercock (*Gallicrex cinerea*, locally known as Kulhee kukulhu), which has limited local distribution (noted in Addu, Huvadho, Laamu and Meemu Atolls), is common and has a higher population and breeding in Fuvahmulah. While most islands of the Maldives generally display common plant species, Fuvahmulah was found to harbour a richer diversity of plants than islands in the north (Sujanapal and Sankaran 2016). Many of the plants growing locally are used in the preparation of medicines, as Fuvahmulah has a rich tradition of local medicinal practices. Plant derivatives are also used as pest repellents to protect crops. Additionally, conservation of the coral reef-based ecosystems including the mangrove/wetland systems are important for climate change adaptation and mitigation as they act as carbon sinks and protect the island of Fuvahmulah from impacts of climate change (MoE 2019).

Fuvahmulah provides an opportunity to explore and demonstrate approaches to sustainable development on a national scale and in the south-Asian region. It encompasses a whole atoll ecosystem, and in line with the Convention on Biological Diversity (CBD) Ecosystem Approach, Fuvahmulah is of an appropriate size to maintain its world class status through sustainable development by local communities (MoE 2019).

Fuvahmulah has undertaken several initiatives for biodiversity conservation and climate adaptation. These initiatives include: Maldives Wetland Conservation and Coral Reef Monitoring for Adaptation to Climate Change Project 2011-2015 (funded by the World Bank); Climate Change Adaptation Project,

2015-2018 (funded by the World Bank, European Union (EU) and the Australian Agency for International Development - AusAID); Maldives Atoll Ecosystem Conservation Project (funded by UNDP/GEF/Government), and REGENERATE Project (funded by USAID) and implemented by IUCN with the Government of Maldives. These initiatives have provided a strong foundation for exploring and demonstrating approaches to sustainable development in a complete atoll ecosystem and have adopted the CBD Ecosystem Approach as their main framework for action. The designation of the Fuvahmulah Biosphere Reserve would continue to recognise and secure these achievements for the future and would roll out approaches to sustainable development in atoll ecosystems elsewhere (MoE 2019).

The Fuvahmulah community and stakeholders were fully engaged in the nomination process of Fuvahmulah Biosphere Reserve. Stakeholder engagement was carried out in four phases during the nomination process. Awareness was created among the community and NGOs of Fuvahmulah on how an island becomes a UNESCO Biosphere Reserve, how the citizens are involved in the process, and the implications on the environment and the biological diversity of the island. A door-to-door survey was conducted to observe the willingness and gather feedback, and to understand, and increase the level of awareness amongst the public. A total of 402 respondents were interviewed, of whom 96.8% agreed they would like Fuvahmulah to become a biosphere reserve. Meetings were held with government ministries to share information, seek technical and advisory support, and identify mechanisms for collective action to designate the Biosphere Reserve. Working sessions were also conducted with key stakeholders to discuss the development of Fuvahmulah as a Biosphere Reserve and prepare the dossier to be submitted to UNESCO (MoE 2019 b).

Customary and traditional protection regimes exist for the core areas and buffer zones of the Fuvahmulah Biosphere Reserve. The core areas and buffer zones are designated as protected areas under the Environmental Protection and Preservation Act (Law no. 4/93) of Maldives and the Fuvahmulah City Protected Area Regulation (2018/R-106). Management plans for the core areas have been in place since 2018. The Fuvahmulah City Protected Area Regulation (2018/R-106) provides the legislative framework for habitat specific management of the proposed core and buffer areas. Prior to these areas being legally protected, they were managed by locals who used it for various purposes such as gathering medicinal plants, taro farming, and reed harvesting for traditional mat weaving. These activities were carried out in traditionally owned plots inherited through generations (MoE 2019).

Core area: Defined as legally constituted areas devoted to long-term protection. Three core areas (MoE 2019) have been identified for Fuvahmulah Biosphere Reserve. Their total area comprises about 474.32 ha, of which 15.34 ha are terrestrial areas and 458.98 ha are marine areas. These include representative examples of high biodiversity value reefs, island, mangroves, wetlands, and specific species in Fuvahmulah, as selected through detailed surveys and consultations with local communities. The core areas in Fuvahmulah is governed by the Regulation on Management of Protected Areas of Fuvahmulah City (2018/R-106). The boundary for all core areas extends 100 meters from the reef edge

and includes all marine and terrestrial biological and non-biological resources enclosed within the boundary. Key management objectives are:

- preservation of habitats, ecosystems, and species in as undisturbed a state as possible
- maintain genetic resources in a dynamic and evolutionary state
- maintain established ecological processes and functions, and
- permit public access and manage visitor use for educational, scientific, cultural, and recreational purposes at a level which will maintain the area in a near natural state.

Buffer zone: Clearly identified zones surrounding core areas as a protective belt. Buffer zones serve to minimize adverse impacts on the core areas. The buffer zones are also legally gazetted but have a lower degree of legal protection than the core areas. Their total area comprises about 302.40 ha, of which 100.29 ha are terrestrial areas and 202.11 ha are marine areas (MoE 2019). The boundaries of the buffer zones were defined through a consultative process with stakeholders during the nomination process. Their extents were specially designed to accommodate supporting functions of the core areas. Therefore, the sizes of buffer zones vary and include all marine and terrestrial biological and non-biological resources enclosed within their boundaries. In the buffer zones, small scale and strictly managed extractive livelihood activities are permitted with low impacts on the environment. They will help to minimize adverse impacts on the protected core areas. All use of the buffer zones is in line with sustainability principles and based on ecosystem reliance and conservation. The detail of activities allowed in the core areas and buffer areas of Fuvahmulah is governed by the Regulation on management of Protected Areas of Fuvahmulah City (2018/R-106). Key management objectives for the buffer zones are:

- maintenance of habitats, ecosystems, species, and ecological processes to ensure long term protection of resources;
- permit public access and manage low impact tourist/visitor use for educational, cultural, and recreational purposes at sustainable levels; and
- permit small scale, strictly managed extractive livelihood activities that are of low impact, sustainable and are reliant on these ecosystems.

Transition area: An outer transition area where sustainable resource management practices are promoted and developed. The transition area boundary includes all areas and resources (biological and non-biological) that are outside buffer zones and core areas. The Fuvahmulah Biosphere Reserve transition area was developed through a consultative process with stakeholders and has been specially designed to provide supporting functions to the core areas and buffer zones whilst ensuring that sustainable livelihood activities can be undertaken. The total area of the transition zone is about 539.15 ha, of which 376.07 ha are terrestrial areas and 163.08 ha are marine areas (MoE 2019). Key management objectives for the transition area are:

- balanced maintenance of habitats, ecosystems, species, and ecological processes with community livelihood requirements to ensure long term sustainable use and
- protection of all biological and non-biological resources;

- permit through sustainable management plans the commercial, artisanal and subsistence extraction of biological and non-biological resources; and
- permit public access for educational, cultural, recreational, tourism and livelihood purposes.

Table 1: Core areas, buffer zones and their significant features (source extracted from MoE 2019)

No.	Name of Site	Core Area (Ha)	Buffer Zone (Ha)	Significant Features	Legal Protection Status
1	Dhadimagi Kilhi	5.49	36.69	Type of Ecosystem: Mangrove and Wetland	
2	Bandaara Kilhi	9.85	59.12	Type of Ecosystem: Mangrove and Wetland	
3	Farikede	458.79	177.96	Type of Ecosystem: Marine Area Endangered species using this area as cleaning stations and feeding: Thresher Shark, Tiger Shark, Whale Shark, Whitetip Reef Shark Oceanic Manta Ray	Protected Area ((IUL)438-ENV/438/2020/129) Level 6: Species / habitat management area Prohibited activities: Anchorage (except in case of emergency) Catching, taking, or killing of animals Sand, coral, and aggregate mining Waste disposal Aquaculture or mariculture Introducing new species Dredging and reclamation Using lights at night to attract fish Activities permitted after special permit: Tourist visits Feeding fish Marine research
4	Thoondu (not included within core area or buffer zone)	0	0	Type of Ecosystem: Pearly pebbles beach and adjacent reef Thoondu is protected for its unique features such as presence of pearly pebbles sand and neighbouring coral reefs. The beach is very dynamic and shifts its location with changes in monsoon resulting in unique aesthetic sceneries throughout the year.	Legally protected area under the Environmental Protection and Preservation Act (Law no. 4/93). The level protection is low in this area compared to the other four three protected areas. That is the reason it is included as a buffer rather than a core area as it supports the overall protection of the island. This area has been removed from Fuvahmulah zonation for UNESCO Biosphere Reserve. It is hoped to conduct more ecological surveys, social engagement, and awareness to include this area in future possible zonation.

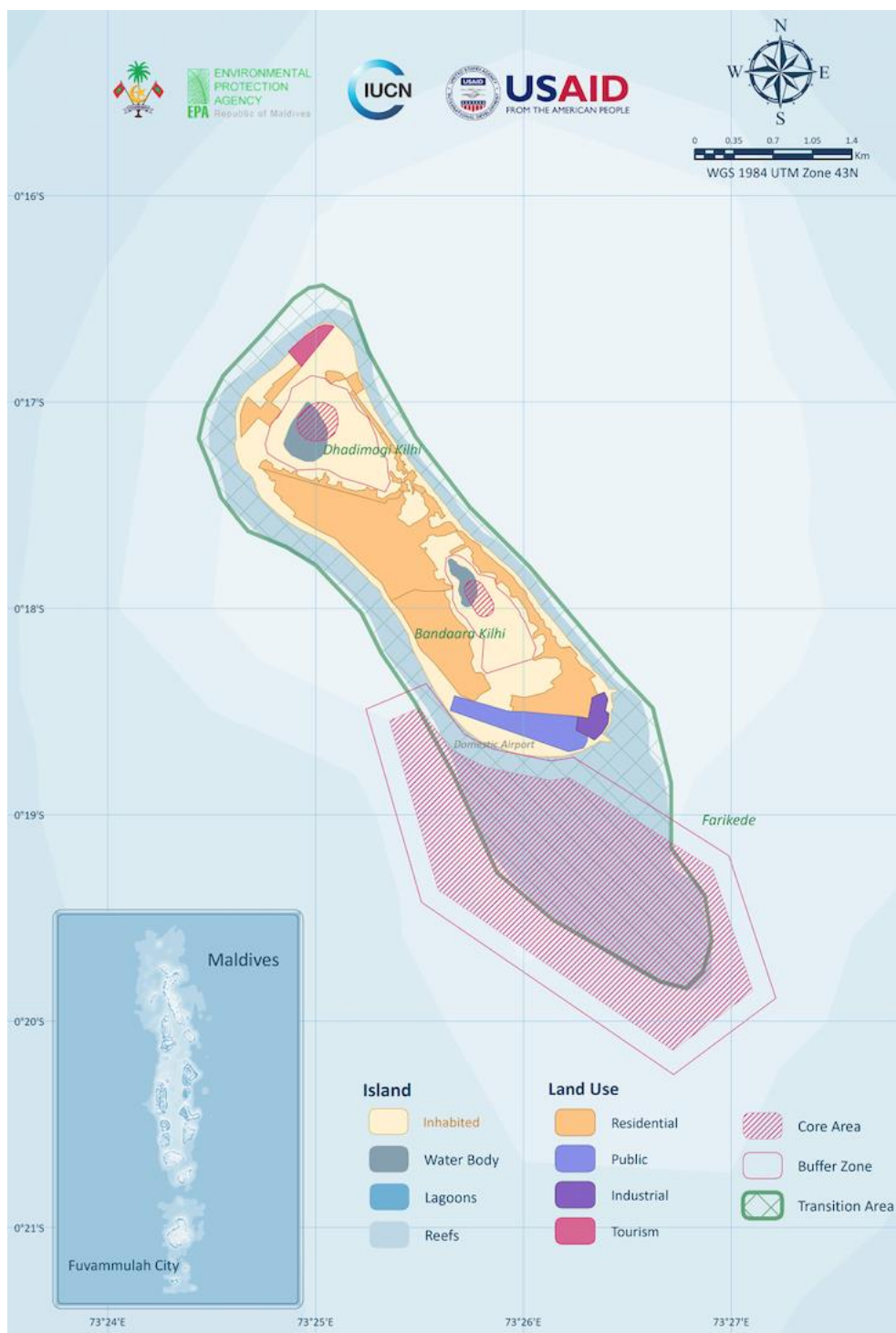


Figure 1: Zonation map with core areas, buffer zones and transition areas sent to UNESCO (source MoE 2019)

3. PEOPLE & HERITAGE

Population

Fuvahmulah is the third most populous island of the Maldives representing about 2.6 % of the total national population. According to Census 2014 the total resident population of Fuvahmulah is 8,510. This includes 7,984 Maldivians and 526 Foreigners. However, data from the 2020 Statistical Yearbook of Maldives show that more than 13,220 people are registered to Fuvahmulah (6,741 males and 6,479 females). There are 1,635 households in Fuvahmulah (NBS 2020).

Land use

Fuvahmulah is third largest island in the Maldives. Fuvahmulah currently has a land area of 497.9 ha of which 13.9 ha is beach. While in 1969, land was allocated for 607 houses, the number of houses had increased to 1,594 by 2015. Among the other major land uses are the airport, harbour area and agriculture. Only 23.2% is available for future land use (Fuvahmulah City Council 2019)..

Fuvahmulah land is divided into eight wards. They are Dhandimagu, Dhiguvaad, Funaad, Hoadhandu, Maadhandu, Miskiymagu, Malegan and Dhoondigan.

Table 2: Significant Land Uses and Heritage in Fuvahmulah by Ward

Ward	Significant Land Uses and Heritage
Hoadhandu	Havitta (cultural) Thoondu section (Protected Env) Ambule athiri (traditional fishing harbor) Hoadhadu miskiy (historical mosque) Kilhiemagi miskiy (historical mosque) Seedhi miskiy (historical mosque) Hoadhadige (historical house)
Dhadimagu	Dhadimagu Kilhi (wetland) Gen Miskiy (historical – oldest building) Thoondu section (protected Env) Nature Park section (wetland/ Protected Env) Dhadimago Fanno (a beach /historical neru)
Dhiguvaadu	Nature Park section (wetland/ protected env) Residential large section Arufanno (historical neru/harbor) Dhadimagi kilhi marshlands Cricket stadium
Maadhadu	Kedeyre Miskiy (Historical site – second oldest mosque)

	Main institutions Council, Gn. AEC, Police, MNDF, Dhiraagu, Ooredoo, Youth Centre, Social Centre, Bank, Post Office
Maalegan	Hukuru miskiy (historical site) Bandaara Kilhi section (wetland) Rasgefanno (historical neru/harbor)
Miskiymagu	Bandaara Kilhi section (wetland) Main heraha magu (major road) Maaneyre (historical neru/harbor) Local market Fire and Rescue
Funaadu	Domestic Airport section Kalho akiri gando (black pebble coastline)
Dhoondigan	Domestic Airport Section Fuvahmulah Harbor

Tangible heritage sites

A total of 35 culturally significant sites has been recorded in Fuvahmulah through the ongoing **Maldives Heritage Survey**. Artefacts that have been found in Fuvahmulah date back to pre-Islamic times. Some of these sites include an old Buddhist Stupa, Havihtha and Kuda Havihtha, as well as the mosque Gen Miskiy. Artefacts were also found in this area during excavation work done for laying the sewerage network on the island (R. Michael Feener 2022).

Table 3: Heritage recorded in Fuvahmulah

No.	Name	Description	Location
1	Havihtha 1	<ul style="list-style-type: none"> - Significant pre-Islamic site, a Buddhist stupa - Found to have a close and corresponding resemblance to "Lankarama" Dagaba at Anuradhapura, Sri Lanka - In 1946 this site was excavated by Mr Adam Naseeru Maniku. During his excavation works three coral stone caskets were found. A skeleton was also found inside the lower level of the mound. - It is in poor condition and completely overgrown. 	Identified in map
2	Gei Miskiy	<ul style="list-style-type: none"> - First mosque built in Fuvahmulah - Built by Aboobakr Naib Kaleygefaanu who travelled to the island to call for the then Buddhist people of the island to convert to Islam - Built on top of a previous Buddhist temple - Mosque grounds contain vevu (bath tank) and ziyaaraiy - Aboobakr Naib Kaleygefaanu was buried at this mosque 	Identified in map
3	Kedeyri Miskiy	<ul style="list-style-type: none"> - Built in 1555 when Fuvahmulah was inhabited for the second time - There is a square-shaped vevu (bathing tank) inside the mosque grounds - Grave site of Dhonsihtheebu, the first woman vaaruveriya (atoll chief) 	Identified in map
4	Vasho veyo	<ul style="list-style-type: none"> - Circular bathing tank 	Identified in map

		- Said to have been a part of an old mosque complex, but none of the mosque structures have been preserved	
5	Kuda havihtha	- Smaller remains of Buddhist stupa - Also in ruins and overgrown	Identified in map
6	Havitha 2	Detailed information not available	-
7	Havitha 3	Detailed information not available	-
8	Havitha 4	Detailed information not available	-
9	Dhaigandu Ganduvaru	Source: Mohamed Ali Didi (heritage person at council), and Hussain Shareef Mohamed (worked with old atoll chief)	-
10	Hukuru Miskiy	- Built between 1692 – 1701 by Dheevadhoo Rasgefaanu - Grave site of Samiya Faashinaakilege and Al Ameer Hassan Izzudheen	Identified in map
11	Dhadimagu Miskiy	Mosque similar to kedeyre miskiy Ceiling installed in mosque from when Mohamed Shamsuddin was banished to the island	Location tbc

Culture

The famous Maldivian cleric and poet Mohammad Jamaaluddeen, known as Naibu-Thutthu was from Fuvahmulah. He wrote several raivaru (poetry) books, an oral tradition of the Maldives (MoE 2019).

Traditional medicine of Fuvahmulah is well recognised in the Maldivian society. The treatments have similarities with Arab, Persian, Indian, Chinese, and even ancient Greek traditions, showing the importance of this indigenous medicine. Several plant species known to have medicinal values are recorded in Fuvahmulah.

'Kattelhi' fishing is unique to Fuvahmulah. Kattelhi is a large-toothed deep-sea fish. It is assumed that Fuvahmulah is the only habitat for the deep-sea fish, and it is not found elsewhere in the country. Fishers use weighted long lines to catch 'Kattelhi', from the deep sea around Fuvahmulah (MoE 2019). Kattelhi remains the deepest catch in the Maldives, fished from around 200 meters. Most of the Kattelhi caught in the Maldives grow up to 100cm, but fishermen have described the rather tiny creature as aggressive and quite strong. Kattelhi fishing has evolved into more of a sport in recent times, the catch being extremely rewarding especially if the tuna fishing is poor.

There are urban myths to Kattelhi that adds more fascination. Fuvahmulah residents say that if you sleep soon after enjoying a Kattelhi dish, one would fall into a deep and peaceful slumber. Others describe a direct link between whoever eats Kattelhi and one's destiny. They say if you eat this local delicacy, your return to Fuvahmulah sometime in the future would be preordained. (<https://taste.mv/kattelhi-native-to-only-one-island/>)

A dialect unique to Fuvahmulah is spoken in Fuvahmulah. In the Mulaku dialect, words can end in 'i' (laamu sukun ލ), which is absent from the other dialects of Maldivian. Another characteristic is the 'o'

sound at the end of words, instead of the final 'u' common in all other forms of Maldivian, e.g., fanno instead of fannu. One of the most unusual features of Mulaku dialect is that, unlike other dialects, it distinguishes gender. Also, there are many remarkable differences in the dialect in place of the sukun system as well as the vowel or diacritical system following a distinctive set of rules. (https://en.wikipedia.org/wiki/Maldivian_language). 'Uvemundhaa 100 Lafzu' written by Mr. Fathuhulla Salih gives reference to historical words in Fuvahmulah dialect.

The story of Ambola Keola, a fisherman who once sailed into the lagoon before encountering the loin-clothed and curious 'people of the Hawitta'. Further details of this tale are hard to come by today, though they left Thor Heyerdahl convinced after his visit 30 years ago (From two thousand isles: Thor Heyerdahl, The Maldivian Mystery). Local oral tradition suggests that the centre of the island has already been a lagoon, which was cut off from the ocean by huge boulders which blocked up the channel in the southern area today known as Diyarehi Fannu to leave today's freshwater lakes.

4. SWOT ANALYSIS

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Designated protected wetlands • Unique 'thooundu' beach of Fuvahmulah • Largest beach break in the Maldives • Tiger shark point contributing to wild life tourism. Six additional shark types are seen • Heritage sites such as Gei miskiy, Havitha • Own dialect contributing to culture • Mango trees and yam fields within households • Two freshwater bodies • Airport and harbour • Internet and mobile phone connectivity • Good quality schools • Community pride and acceptance of biodiversity and heritage conservation • Unique and popular activity 'mud bath' • 'Kattelhi' is a unique variety of fish consumed 	<ul style="list-style-type: none"> • The economic value of ecosystems is not well understood • No specific programmes for integrating local biodiversity conservation education in schools • Lack of data on biodiversity • Absence of information on historical sites • Lack of information on handmade stone carvings • Lack of trained technical personnel • Loss of identity - original terms in Fuvahmulah are not used when speaking of the island and its biodiversity • Lack of adequate health services • Lack of development plans emphasising on maintaining greenery of the island • Environmental degradation/erosion
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Growing international demand for biodiversity conservation • Brand 'Maldives' is a highly sought-after destination • Growing domestic tourism • Increase in air connectivity • Increase in bed capacity in Maldives • Tourists seeking local, cultural experiences • Growing demand for remote work • Technological revolution and growth 	<ul style="list-style-type: none"> • Climate change • Plastic and waste pollution • Increase in national debt • Worsening government budget and fiscal situation • Unpredictable policy changes • Mass tourism

5. FUVAHMULAH BIOSPHERE RESERVE ACTION PLAN

The Fuvahmulah Biosphere Reserve Action Plan is structured around seven goals formulated under the three key functions of the Biosphere Reserve:

- i. Conservation of Biodiversity and Cultural Diversity
- ii. Sustainable Economic Development
- iii. Logistics Support

The activities to be undertaken as part of the Action Plan are given under each strategic objective.

FUNCTION 1: CONSERVATION OF BIODIVERSITY AND CULTURAL DIVERSITY

GOAL 1: Conserve and sustainably use biodiversity and beauty of natural ecosystems

Strategic Objectives

- 1.1** Recognize and understand the ecological systems, processes, and their values
 - 1.2** Develop the principles, policies, guidelines and establish mechanisms for improved management effectiveness of the biosphere reserve
 - 1.3** Contribute to the development and adoption of tools and processes to protect species and habitats
 - 1.4** Implement programmes to restore species and habitats
 - 1.5** Strengthen financial sustainability of core areas and buffer zones of the biosphere reserve
-

GOAL 2: Safeguard culture and heritage and showcase them to gain economic benefits

Strategic Objectives

- 2.1** Promote greater awareness, knowledge and engagement with culture and heritage
- 2.2** Improve policy and process to enable shared protection of culture and heritage
- 2.3** Improve storytelling, visitor experience, and services to increase visitation and engagement

FUNCTION 2: SUSTAINABLE ECONOMIC DEVELOPMENT

GOAL 3: Achieve sustainable livelihoods by enhancing economic and social benefits to all from biodiversity and culture

Strategic Objectives

- 3.1 Strengthen agriculture and food services to achieve sustainable livelihoods
- 3.2 Promote inclusive nature-based sustainable tourism in Fuvahmulah
- 3.3 Promote responsible management of fisheries for biodiversity conservation
- 3.4 Diversify trade and manufacturing activities to reduce the overdependence on biological resources

GOAL 4: Achieve sustainable development

- 4.1 Promote zero waste, and prevent the impacts of waste on the Biosphere Reserve
- 4.2 Achieve integrated water and sewerage development

GOAL 5: Achieve climate change adaptation, mitigation & resilience building

Strategic Objectives

- 5.1 Promote Net Zero Emissions (NZE) in electricity
- 5.2 Pave the way for transition to Net Zero Emissions (NZE) in transport within the Biosphere Reserve
- 5.3 Build the resilience of natural systems and community to climate change

FUNCTION 3: LOGISTICS SUPPORT

GOAL 6: Undertake research and monitoring to generate knowledge

Strategic Objectives

- 6.1 Encourage and support collaborative scientific research
- 6.2 Establish data management capacity for research and monitoring

GOAL 7: Strengthen communication, outreach, and knowledge management

Strategic Objectives

- 7.1 Enable diverse, multi stakeholder participation and engagement
- 7.2 Enable young people to actively contribute and meaningfully engage with the Biosphere Reserve
- 7.3 Enable women's full participation and contribution to Biosphere Reserve activities
- 7.4 Deliver well planned communication outreach and education to change the attitude and behaviour towards conservation and sustainable utilization of biological and cultural resources
- 7.5 Build the capacity of the Fuvahmulah Biosphere Reserve staff to deliver core functions of the biosphere reserve

GOAL 1: Conserve and sustainably use biodiversity and beauty of natural ecosystems

Fuvahmulah encompasses a unique tropical small island coral reef ecological system of significance for biological diversity conservation. It is the third largest island in the Maldives covering 491 ha of land area and 462 ha of marine area. Of these, 116 ha (25.3%) of land area and 445 ha (96.4%) marine area are declared as protected areas. The ecological system of Fuvahmulah includes coral reefs, reef passes, seagrass beds and lagoons in the marine environment, and tropical vegetation, mangroves, wetlands (locally known as kilhi) and agricultural land on the island. The island has a coral reef cover of 10.18 km² and two mangroves covering 1.41 km²— the largest wetland area at national level (MoE 2019 c).

The reef ecosystems in Fuvahmulah are home to populations of nationally significant megafauna and fish. They include tiger sharks, thresher sharks, whale sharks, oceanic manta rays, dolphins, and turtles. The fish diversity comprises of over 1,200 species, of which Gobies are the most diverse group. Recorded endemic species include Maldivian Cardinalfish, Maldivian Grubfish, Maldives Triplefin and Little Combtooth Blenny (MoE 2019).

The mangroves in Fuvahmulah are an important habitat for migratory birds including globally and regionally important birds. Some 167 species of birds are known to be found in Maldives and five sub species of birds have been identified as endemic. Fuvahmulah is also home to Watercock (*Gallicrex cinerea*, locally known as Kulhee kukulhu), which has limited local distribution. Watercock is common and has a higher population and breeding in Fuvahmulah (MoE 2019).

Fuvahmulah harbours a richer diversity of plants than other islands of the Maldives. Most islands generally display common plant species (Sujanapal and Sankaran 2016). Fuvahmulah has a rich tradition of local medicinal practices and many of the plants growing locally are used in the preparation of traditional medicines. Plant derivatives are also used as pest repellents to protect crops. At present 111 species of plants with medicinal properties are recorded in the Catalogue of Plants (MoE 2019)

There is an urgent need to ensure the biodiversity of Fuvahmulah is healthy, resilient to climate change, and valued for its contribution to environment, people, and the economy. As outlined in SDG 15, Biosphere Reserve management will strive to protect, restore, and promote sustainable use of terrestrial ecosystems, and halt biodiversity loss. SDG Target 14.2 urges countries to “sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans”.

Strategic Objectives	Action(s)
1.1 Recognize and understand the ecological systems, processes, and their values	Undertake a comprehensive baseline assessment of the fauna and flora species found in the core areas (both marine and terrestrial protected areas) to map the species distribution
	Undertake an updated detailed baseline assessment of Farikede
	Map the wetlands using drone photography to capture the detailed habitat description of the sites
	Undertake an in-depth assessment of hydrology, biota, processes, nutrient cycling, climate regulation, and other ecological characters of the two wetlands
	Update the biota inventory for each core area annually
	Prepare a catalogue of all marine taxa (corals, fish, invertebrates, and megafauna)
	Prepare planktonic profiles around Fuvahmulah
	Assist in the production of educational and promotional videos with content creators that demonstrate the importance of biodiversity to the daily life of people
	Report on the global and national indices on the status and trends of biodiversity
	Adopt the national monitoring protocols and inclusion of citizen science (schools, university, community) for regular monitoring
	Integrate dashboards to report status and trends of Fuvahmulah biodiversity into the website
	Undertake annual monitoring of climate change impacts, coral bleaching, and anthropogenic disturbances on habitats
	Undertake regular monitoring of coral recruitment
	Undertake studies on visitor experience
1.2 Develop the principles, policies, and guidelines and establish mechanisms for improved management effectiveness of the biosphere reserve	Develop and update management plans with access rules for the core areas and buffer zones of the biosphere reserve
	Undertake METT analysis for all core areas
	Introduce and implement IUCN green list standard to improve management effectiveness of core areas and buffer zones
	Prepare technical guideline for the management of the biosphere reserve
	Establish the Fuvahmulah Biosphere Reserve Advisory Committee
1.3 Contribute to the development and adoption of tools and processes to protect species and habitats	Undertake an assessment of marine megafauna movement near Fuvahmulah, especially commercially important species
	Undertake a detailed assessment of ecological, social, cultural, and economic values derived from the two wetlands
	Contribute to the development of a regulation for good agricultural and gardening practices in the periphery of the two wetlands
	Develop guidelines for sustainable harvesting of reed for mat weaving

	Contribute and advocate for the development of guidelines for sustainable harvesting of 'Kattelhi'
	Contribute to Identify and map all types of agriculture and gardening in the proximity of the wetlands
	Undertake regular water testing to determine the impact of agriculture on the water quality of wetlands
	Contribute and advocate for the development of guidelines to prevent chemical fertilizers and pesticide run off to the wetlands and marine area
	Contribute and advocate for development of a guideline to prevent the spread of invasive and alien species in the biosphere reserve
	Contribute to the development of guidelines for citizen science (reef health, megafauna movement, wetland, birds, terrestrial invertebrates)
	Identify and establish potential KBAs within the biosphere reserve
1.4 Implement programmes to restore species and habitats	Develop and ensure implementation of code of conducts to regulate wildlife-human interactions, especially for sharks (feeding, touching, chumming, waste dumping)
	Contribute and advocate for the development and implementation of a control programme for Rhinoceros beetle (<i>Oryctes rhinoceros</i>) to prevent destruction of coconut palm trees
	Undertake an assessment of the species that have disappeared or are at the risk of extinction
	Contribute and advocate to undertake environmental and ecological impact assessments for re-introduction and restoration of threatened species
	Undertake an assessment of restoration actions to remove excessive materials to prevent water logging in wetlands
	Undertake an environmental impact assessment to eradicate the exotic and invasive species such as tilapia (footu-mas) and waterlilies population in the wetlands and enhance the native population of fish (eel) and flora
1.5 Strengthen financial sustainability of core areas and buffer zones of the biosphere reserve	Develop operational guideline for biosphere reserve conservation trust fund management
	Establish a fund to finance Fuvahmulah Biosphere Reserve management activities
	Strengthen the fund to incorporate innovative financing options
	Develop proposals to secure finance from bilateral and multilateral donor agencies for conservation and adaptation
	Organise fundraising events for the biosphere reserve
	Develop the business plan with revised user fee structure
	Develop the marketing strategy for the biosphere reserve
	Develop the brand strategy for Fuvahmulah Biosphere Reserve products and services

GOAL 2: Safeguard culture and heritage and showcase them to gain economic benefits

Fuvahmulah has a rich culture and heritage that provides a sense of place and unique identity to the island. The heritage includes places, stories, traditions, and experiences inherited from the past with both tangible and intangible values. The Biosphere Reserve designation recognizes and acknowledges the local values, cultural history, and built heritage of Fuvahmulah. The Biosphere Reserve management will help enrich people's lives through providing avenues to inspire and deepen the connection to community and heritage and derive benefits to the community from the past and lived experiences.

The Biosphere Reserve will encourage people to explore the rich culture and heritage by understanding, protecting, and celebrating the unique values. Traditional knowledge, community advice and scientific studies are needed to build better understandings of culture and heritage. Careful planning and informed advice are required to protect and manage current places and properties. Guidelines are needed that help identify the values that shall be conserved and actions to be avoided that may adversely affect them. Heritage listing provides motivation for visitors to experience and gain appreciation of what makes the place special.

A shared responsibility approach is needed for protection and management of the Biosphere Reserve. This approach will help recognize all the relevant stakeholders, including community members, community organizations, government agencies, and businesses that will contribute and actively participate in protecting and managing heritage. Clear policies and regulations are needed to align priorities, enable swift actions, improve cooperation, and simplify processes.

The Biosphere Reserve will help to authentically represent the stories, places, experiences, and language of the people, both of the past and the present. Fuvahmulah is a highly aspirational destination within Maldives, mainly for local visitors and international wildlife enthusiasts. The richness of the culture and heritage represent a key part of the appeal of Fuvahmulah. Unique opportunities remain to connect visitors with the local community, immerse them in local culture and help develop a rich knowledge and understanding of Fuvahmulah. Heritage tourism will be utilized as a strategy to promote the stories, places, and traditions embodied in Fuvahmulah.

Strategic Objectives	Action(s)
2.1 Promote greater awareness, knowledge and engagement with culture and heritage	Establish an inventory of the material and cultural heritage of Fuvahmulah
	Incorporate and promote Fuvahmulah history and culture into communication materials of the biosphere reserve
	Ensure effective participation and engagement of heritage experts in biosphere reserve planning and implementation
2.2 Improve policy and process to enable shared protection of culture and heritage	Contribute and advocate for the development of a regulation to protect and preserve heritage sites of Fuvahmulah
	Contribute to development of guidelines on film and photography at heritage sites within core areas and buffer zones of the biosphere reserve
	Integrate celebration of Ramadan, Eid and Islamic festivals and other Fuvahmulah festivals into annual plans
2.3 Improve storytelling, visitor experience, and services to increase visitation and engagement	Establish digital interactive storytelling to enhance visitor experience
	Facilitate poetry and literary competitions to promote and celebrate Fuvahmulah dialect
	Facilitate events for culinary festivals showcasing local food

GOAL 3: Achieve sustainable livelihoods by enhancing economic and social benefits to all from biodiversity and culture

The Biosphere Reserve needs to provide tangible and sustainable benefits to local people, or the initiative will not be accepted within the community. The poorest segments of the society tend to depend disproportionately on biodiversity for their subsistence needs, while the more affluent groups derive higher commercial value from the resources. Despite the good intentions of biodiversity conservation, they often do not lend themselves well to the eradication of poverty. Ending poverty in Fuvahmulah in all its forms is an important goal of the Fuvahmulah Biosphere Reserve designation. Hence, in the Biosphere Reserve management, clearly targeted integrated policy will be pursued to address dimensions of poverty including but not limited to income, food security, nutrition, health, and social equality.

Inclusive nature-based tourism offers several opportunities to eliminate income poverty in Fuvahmulah. Fuvahmulah is blessed with existence of certain key marine species with high likelihood of viewing that tourists will pay to see. Tourists are already visiting to view tiger sharks and high potential exists to attract more tourists to view dolphins, manta rays, stingrays, turtles, and whales. Terrestrially, the two wetlands and beach, particularly Thoondu have high attractiveness to design products and activities that will benefit local people directly. The tourism income-generating potential is closely related to the conservation level and the Biosphere Reserve designation will add value to nature-based tourism.

Agro-biodiversity conservation will benefit the local people through better nutrition, higher food security and health. Efforts are needed to conserve all the variety and variability of the local plants that are used directly or indirectly for food and to diversify the types of crops. Biodiversity is also an important source of traditional medicines such as herbal medicines and special attention is needed to identify the rare species present and to cultivate them.

Priority will be given to promotion of responsible fisheries. Responsible fisheries management for tuna fishery as well as reef fishery is a mechanism that will generate sustained income for fishers and help reduce poverty. Attention will be given to value added products that will increase the benefits for women from fishery.

Economic diversification will be pursued as a primary strategy to achieve inclusive and sustainable economic growth. Special attention will be given to create environment friendly jobs in Fuvahmulah. Identifying sustainable business models, social enterprises and green businesses that can establish links with the youth and community of Fuvahmulah will be given priority. Households with fewer assets and lower levels of social capital will be actively targeted to benefit from such initiatives.

Strategic Objectives	Action(s)
3.1 Strengthen agriculture and food services to achieve sustainable livelihoods	Facilitate and encourage revival of key native agricultural species and products of Fuvahmulah
	Conduct awareness and promote good agricultural practices within the biosphere reserve
	Encourage development of a strategy for local produce
	Contribute and advocate for development of guidelines for sustainable harvesting of reed for mat weaving
3.2 Promote inclusive nature-based sustainable tourism in Fuvahmulah	Develop the guidelines for anchoring and mooring in the core areas and buffer zones for tourism purposes
	Integrate digital application-based access permit system for yachts and liveaboards visiting the Fuvahmulah Biosphere Reserve into the online platforms
	Contribute and advocate to implement guidelines on responsible diving and snorkelling practices in the marine area
	Develop guidelines for tiger shark watching with special emphasis on visitor safety
	Develop interactive maps for visitors to nature parks
	Create an access ring road pathway on the outer boundary of the protected areas with banisters to provide easy access to visitors (walkways, bicycle pathway etc) and manage access to limit damaging activities
	Erect signs that identify 'dos and don'ts' in wetlands; interpretive boards to provide valuable information on resources; and indicate routes, intersections, distances, and depths
	Place safety signs and safety materials around the protected areas
3.3 Promote responsible management of fisheries for biodiversity conservation	Incorporate biosphere reserve principles by participating in atoll level fisheries development and management planning
	Contribute and advocate to undertake a detailed assessment on 'Kattelhi' fisheries
	Contribute and advocate to develop guidelines for sustainable harvesting of 'Kattelhi'
	Contribute and advocate to develop social media material and content for promotion of 'Kattelhi'
3.4 Diversify trade and manufacturing activities to reduce the overdependence on biological resources	Develop visitor centres at Bandaara Kilhi, Dhadimagi Kilhi and Farikede with information, souvenirs, and refreshments/café
	Develop guidelines on products that could be sold at the visitor centres and establish quality control standards

GOAL 4: Achieve sustainable development

Environmental Impact Assessment (EIA) is a tool mandated by Environment Protection and Preservation Act (4/93) to identify the environmental impacts of projects in the Maldives. EIA process involves decision-making on whether to approve the project or not, and under what conditions and includes monitoring, compliance, enforcement, and auditing. Fuvahmulah Biosphere Reserve office/unit will work closely with Fuvahmulah City Council to strengthen EIA process, particularly the strategic environmental assessment of development plans and proposals and sector master plans.

Waste debris, in particular plastics is emerging as a serious threat to the rich and unique biodiversity of Fuvahmulah. The volume of plastic debris and metal cans found in the coral reefs, beaches and wetlands have drastically increased over the last decade. Plastics are ingested by fish, threatening human health, while plastic incidence in marine megafauna and seabirds is a growing concern. Single use plastic items such as light weight shopping bags, water bottles, soft drink bottles, cups, and straws that end up in the reef, wetlands and beaches are growing in number every year.

Use of chemical pesticides and fertilizers have become common in recent years mostly in-home gardening and commercial agriculture. Hence there is an increase of ground water and wetland contamination which could have negative implications on the wetland ecosystem and ground water. However, commonly grown taro and mangos need no such intervention.

Strategic Objectives	Action(s)
4.1 Promote zero waste, and prevent the impacts of waste on the Biosphere Reserve	Design and introduce Fuvahmulah Biosphere Reserve green bags
	Develop social media material and content to create public awareness programmes on waste and litter
	Organize and participate in citywide waste clean-up programme
	Encourage the use of reusable water bottles as alternative for PET bottles within the nature park
4.2 Achieve integrated water and sewerage development	Undertake biennial water quality monitoring of core areas and buffer zones

GOAL 5: Achieve climate change adaptation, mitigation & resilience building

Climate change is the most significant threat to the Fuvahmulah Biosphere Reserve. The Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) published in 2021 showed that the greenhouse gas concentrations since around 1750 are unequivocally caused by human activities and have continued to increase in the atmosphere (IPCC 2021). AR6 showed that each of the last four decades has been successively warmer than any decade that preceded it since 1850. The window for action is closing rapidly and 'business as usual' approaches will not deliver the impact needed. Innovative intensified initiatives are critical to respond to the scale and severity of the challenges posed by climate change.

The Maldives has committed to mitigate climate change and set a target to achieve Net Zero Emissions (NZE) by 2030. The President announced this policy goal at the United Nations Climate Ambition Summit held in December 2020 (PO 2020). Subsequently, in May 2021, the President has ratified the Climate Emergency Act passed by the Parliament that paves the way for Maldives to achieve NZE by 2030. In this context, the Fuvahmulah Biosphere Reserve will demonstrate NZE in electricity generation, transport, and waste management.

There is an urgent need to take steps to adapt and build resilience to climate change. The Biosphere Reserve Management Office will build the tools, partnerships, and programmes to address the threat posed by climate change. Fuvahmulah Biosphere Reserve office will take initiative to develop a portfolio of projects aimed at addressing the impacts of climate change on Fuvahmulah. It will encourage use of Fuvahmulah as priority sites/observatories for climate change research, monitoring, mitigation, and adaptation. Extensive support will be offered for adaptation projects on to climate change and other aspects of global environmental change.

Strategic Objectives	Action(s)
5.1 Promote Net Zero Emissions (NZE) in electricity	Install solar PV, energy storage, and energy efficiency in the Biosphere Reserve management office to demonstrate smart office Advocate and contribute to national goals to reach net zero in electricity utilisation within the Biosphere Reserve
5.2 Pave the way for transition to net zero emissions (NZE) in transport within the Biosphere Reserve	Advocate and contribute to national goals to reach net zero in transport sector within the Biosphere Reserve Design and build the walking tracks and bicycle lanes around the wetlands Establish benches along the walking track to support pedestrians Establish water re-fill stations on the walking track Establish partnership for vehicles and vessels repair and maintenance Procure bicycles for rental use by visitors to the Bandaara kilhi and Dhadimagikilhi wetlands Establish bicycle parking stands in visitor centres Install bicycle fixing stands strategic locations with the required handy tools Establish solar PV electric vehicles charging stations in visitor centres Promote use of electric boats for use by rangers in water bodies
5.3 Build the resilience of natural systems and community to climate change and natural disasters	Advocate and contribute to national goals of achieving resiliency through climate change adaptation and mitigation in Fuvahmulah Biosphere Reserve.

GOAL 6: Undertake research and monitoring to generate knowledge

Fuvahmulah Biosphere Reserve office will facilitate biodiversity and sustainability research. During consultations with stakeholders, it was noted that there is a need to develop a research framework and strategy for the Biosphere Reserve, to improve the knowledge base on the ecosystems and their services within the Biosphere Reserve. Since the capacity to undertake rigorous scientific research is limited, there is a need for shared collaborative scientific research projects with well-established research centres and academic institutions.

The Farikede core area is a known all year around aggregation site for Reef Manta (*Mobula alfredi*). The Maldivian Manta Ray Project (MMRP), a research programme run by Manta Trust (<https://www.mantatrust.org/maldives>), has been conducting research on mantas, and has evolved to one of the largest research programmes on mantas in the world.

Biodiversity conservation will become mainstream when knowledge is shared, and its benefits are valued and recognized. Regular monitoring and research are undertaken by Fuvahmulah Biosphere Reserve management (FBR management) on the core areas especially birds and other flagship

species. Additionally, biannual monitoring of the water from wetlands are carried out to analyse the health of ecosystems and impacts from external pressures such as pollution. The coral reefs of the Fuvahmulah Biosphere Reserve are regularly monitored through the national coral reef monitoring framework and the data is fed into the National Coral Reef Monitoring Database (<https://coraldatabase.gov.mv>).

The need to incorporate citizen science as an innovative approach for research and monitoring in the Biosphere Reserve was also highlighted. Recognition and respect to the unique traditional biodiversity knowledge of our citizens is a priority. By helping to maintain and build this knowledge it can be used more effectively when developing biodiversity conservation management programmes. Special emphasis will be given to synthesize traditional and local knowledge and involve citizens in research and monitoring.

Strategic Objectives	Action(s)
6.1 Encourage and support collaborative scientific research	Establish a research hub in Fuvahmulah
	Identify research priorities for the short and long term
	Develop the Research Agenda and Strategy for Fuvahmulah Biosphere Reserve
	Establish collaborative research partnerships with national universities and institutes
	Establish research partnerships with international universities and organisations
	Establish a network of citizen science researchers and writers
	Establish a database of local knowledge and traditional management practices
6.2 Establish the data management capacity for research and monitoring	Develop a strategy for data management
	Develop GIS spatial data management system
	Conduct training on GIS data management
	Promote and implementation of national protocols for monitoring of species, habitats and other environmental parameters

GOAL 7: Strengthen communication, outreach, education and knowledge management

The Biosphere Reserve management will take place in a highly complex context within a constantly changing web of social, political, economic, cultural, and environmental constraints and opportunities. Stakeholder engagement is critical to gain perspectives that improve outcomes in such a dynamic and complex context. The success of the Biosphere Reserve will depend on navigation and adjustments made to adapt to the constantly changing nature of conditions in the design, implementation, and evaluation of management actions. Hence, understanding whom to engage, as well as when and how, are important considerations for Biosphere Reserve management.

A fundamental principle of the Fuvahmulah Biosphere Reserve will always be to work very closely with the local community and key stakeholders. Due attention will be given to understand and respond to the priorities and perspectives of key stakeholders, including the government ministries, community, civil society, private sector, and academia. Learning about the priorities and perspectives of the stakeholders as well as their knowledge will provide better understanding of the context in which the management decisions making will take place.

The formal engagements with the national level stakeholders will help prioritize conservation and sustainability in important development decisions and in mobilizing finance. Likewise, it will help strengthen the technical decisions on biodiversity and cultural heritage conservation, sustainability, education, research, livelihood activities, and economic diversification.

Comprehensive community engagement will help establish strong connection between the works of the Biosphere Reserve and the community and in transparent decision making for the management of the Biosphere Reserve. Community level stakeholders can be found at all levels of society and special focus will be on engagement of women, youth, private sector, NGOs, media, and local groups. By working with community groups, the Biosphere Reserve will ensure that socially, culturally, and economically responsible decisions that are accepted and welcomed by the community are made.

Stakeholder mapping will identify all key stakeholders, their roles, and responsibilities in relation to the management of the Biosphere Reserve. Stakeholders will be mapped to include policy institutions, regulatory authorities, financing agencies, donors, resource use groups, businesses, civil society organizations, community groups and media. Once stakeholders are identified, a stakeholder engagement plan can be designed according to the stakeholder category and their roles in relation to the functions and management of the Biosphere Reserve. A stakeholder engagement plan will identify the mediums, channels, and frequency of consultations to be undertaken. It is important to engage in meaningful exchanges in a timely manner.

Sharing useful information through effective and open communication and data and knowledge exchange is a necessity for the Biosphere Reserve. To enhance the research and monitoring of biodiversity of Maldives, the Government of the Maldives has launched the Maldives Conservation Portal (<https://maldivesconservationportal.org/>). The portal provides information about citizen science initiatives and projects, e-learning modules with video lectures by renowned experts, as well as reference material on climate change and nature conservation with some 400 publications that can be accessed through the portal. All the publications relevant to the Fuvahmulah Biosphere Reserve will be made available on this portal. Contemporary communication and information channels such as social media and digital video conferencing will be used extensively to share knowledge and connect with people. Such sharing of information is expected to increase the engagement with diverse external audiences as well.

The future of biodiversity, heritage and sustainability will depend on the collective action of a well-educated society. Hence, delivery of well-planned long-term education to change the attitude and behaviour towards conservation and sustainable utilization of biological and cultural resources is a key objective. The Fuvahmulah Nature Park (FNP) Office and Visitor Centre established in September 2018, will continue the efforts of education and awareness.

Strategic Objectives	Action(s)
7.1 Enable diverse, multi stakeholder participation and engagement	Formulate the stakeholder consultations and engagement strategy based on functions of biosphere reserve and key messages from goals and strategic objectives identified above
	Establish a grievance mechanism for Fuvahmulah biosphere reserve
	Establish the Fuvahmulah Biosphere Reserve Advisory Committee
	Prepare annual stakeholder engagement report and disclose it on the Fuvahmulah Biosphere Reserve website
	Aim to achieve internationally recognised biosphere reserve awards
7.2 Enable young people to actively contribute and meaningfully engage with the Biosphere Reserve	Encourage participation and effective engagement in MAB youth network
	Ensure youth representation in the planning and implementation of activities within biosphere reserve
	Develop an annual programme to provide opportunities for school students to volunteer their time towards conservation activities in biosphere reserve
	Develop an internship programme for young people
7.3 Enable women's full participation and contribution to Biosphere Reserve activities	Ensure women representation in the planning and implementation of activities within biosphere reserve
	Ensure gender mainstreaming in planning and implementation of biosphere reserve
	Facilitate events to showcase the skills and talent of women in biodiversity, heritage, and livelihoods
7.4 Deliver well planned communication and education to change the attitude and behaviour towards conservation and sustainable utilization of biological and cultural resources	Develop a social media strategy and channels for engagement for Fuvahmulah biosphere reserve
	Establish the website for Fuvahmulah biosphere reserve
	Develop guidelines for biosphere reserve logo use (in technical guideline)
	Develop digital and social media materials for public awareness on conservation, livelihoods, and research
	Organise an annual forum on biosphere reserve and the importance of its functions for relevant officials
	Develop a programme for school students from at least 2 different atolls to visit the Biosphere Reserve every year
	Develop a programme for at least 1 international school actively engaged in conservation activities to visit the Biosphere Reserve every year
	Integrate Biosphere Reserve related topics in environmental clubs and other school activities
	Identify and utilize existing games, videos, photos and stories on biodiversity, culture, heritage, and sustainable livelihoods
	Establish partnerships with international centers of excellence for biodiversity conservation and sustainability education

	Publish the baseline assessment of species and habitats in core areas of the biosphere reserve
	Publish and distribute a biannual newsletter
	Publish the Annual Biosphere Reserve Report
	Develop the training materials for capacity development for city council and community practitioners working on biosphere reserve activities and initiatives
	Celebrate environmentally significant days
	Facilitate sustainable training programme for farmers on good agricultural practices of in Fuvahmulah
	Facilitate training programmes for the fishers in Fuvahmulah
	Facilitate training programmes for tourism service providers in Fuvahmulah
	Facilitate and advocate for training for apprentices and strengthen their skills and knowledge of the traditional medicines
	Develop an annual calendar for awareness and information sessions to different stakeholder groups such as farmers, tourism service providers, fishers, women, youth, and make it publicly available
	Conduct training on disaster risk management for officials of Fuvahmulah biosphere reserve
	Conduct a training needs assessment for Fuvahmulah Biosphere Reserve staff
	Conduct training on modern techniques and tools for ecosystem management
7.5 Build the capacity of the Fuvahmulah Biosphere Reserve staff to deliver the core functions of the biosphere reserve	Conduct leadership training for management staff
	Conduct training on sustainability monitoring to the staff
	Organize training courses on innovative techniques and field gear for biodiversity surveys and monitoring
	Conduct training on methods of collection, preparation and maintenance of plant and animal specimens
	Conduct training on building and managing databases
	Organize training courses on geographical information systems (GIS)
	Conduct training on management of websites
	Organise national study tours for the Fuvahmulah Biosphere Reserve staff

Organise international study tours and exposure trips for Fuvahmulah Biosphere Reserve staff
Participate in the network of Maldives Biosphere Reserves to exchange information and lessons
Participate in the UNESCO World Network of Island and Coastal Biosphere Reserves
Participate in UNESCO World Network of Biosphere Reserves
Participate in the South and Central Asia MAB Network
Formulate a plan to contribute to the World Network of Biosphere Reserves

6. IMPLEMENTATION PLAN

6.1 GOVERNANCE

Good governance is essential for leading, coordinating, negotiating, and facilitating interaction with the stakeholders and the community for the management of the Biosphere Reserve. The term governance refers to the structures and processes that determine how decisions about a biosphere reserve are taken and how stakeholders are included. Good governance for the Fuvahmulah Biosphere Reserve includes stakeholder engagement, technical advice, core area management, and fund management. Quality of governance of the Biosphere Reserve will depend on the structure of decision making, management, coordination processes, and human resource capabilities established within the Biosphere Reserve.

Local government-driven governance model

The Fuvahmulah City Council is the lead authority for the governance of the Fuvahmulah Biosphere Reserve. The lead authority has the responsibility to ensure implementation of the key functions of a biosphere reserve in FBR. All critical issues and conflicts related to the biosphere will be discussed and solutions decided by the Fuvahmulah Biosphere Reserve Advisory Committee. The Fuvahmulah Biosphere Reserve Management Office/Unit will be managing and implementing the action and management plan.

Fuvahmulah Biosphere Reserve Management Office/Unit (FBRM Office/Unit)

The Fuvahmulah Biosphere Reserve Management Office/unit will be the leading management and coordination entity for Biosphere Reserve management in Fuvahmulah. The Fuvahmulah Biosphere Reserve Office/Unit will manage and coordinate all the functions of the Biosphere Reserve. The Fuvahmulah Biosphere Reserve Office/Unit will be based on the principles of conservation and sustainability and always demonstrate such practices. The Fuvahmulah Biosphere Reserve Office/Unit will consist of professional staff employed full time to work on activities with an associated budget made available.

Fuvahmulah Biosphere Reserve Advisory Committee (FBRAC)

The Fuvahmulah Biosphere Reserve Management Committee will be established. The Committee comprising of key stakeholders, has the advisory role for implementation and management of MAB Strategy in FBR. The Committee will be chaired by the mayor of Fuvahmulah City and will include representation from policy and implementation authorities, management unit of FBR, Fuvahmulah Women's Development Committee and a representative from all the major resource users of the atoll, as identified in the Terms of Reference for the Advisory Committee of UNESCO Fuvahmulah Biosphere Reserve. The Committee is responsible for providing advice and guidance on the development and

implementation of the action plan, and management plans for core areas and buffer zones and any other matter related to the functions of Biosphere Reserve.

Fuvahmulah Conservation Trust Fund

A Trust Fund will be established for the conservation of biodiversity and cultural diversity for sustainability in Fuvahmulah. The trust fund will be governed by a fund board, chaired by the mayor of Fuvahmulah City Council, with representation from environmental governance and policy making authority, environmental regulatory authority, local government management authority, women of Fuvahmulah City and FBRAC. The fees collected from visitors and any in-kind aid for FBR will be deposited to the trust fund and will be used for development and management of core areas and buffer zones, investment, introduction of sustainable alternatives and knowledge dissemination in the atoll.

Governance related activities

- Establish the Fuvahmulah Biosphere Reserve Advisory Committee
- Establish a grievance mechanism for Fuvahmulah Biosphere Reserve
- Develop the business plan with revised user fee structure for Fuvahmulah Nature Park
- Undertake visitor experience study

Legislative strengthening

Regulation on Management of Protected Areas of Fuvahmulah City (2018/R-106), provides the legislative framework to manage the human use and activities in the core area and buffer zones of three areas: Dhadimagi Kilhi, Bandaara Kilhi and Thoondu.

All core areas of the Biosphere Reserve require a management plan. Bandaara Kilhi, Dhadimagi Kilhi and Farikede require regulations on use and management. Fund management of the Biosphere Reserve require a regulation on collection and use of funds. A guideline on logo use for the Biosphere Reserve products and services will enable better opportunities for partnerships and increase the brand values of FBR

A management plan of Fuvahmulah Biosphere Reserve is being developed. This plan will be developed through a consultative process of stakeholders of the government, private sector, and local communities.

Laws, regulations, guidelines, and management plans that need to be developed

- Contribute and advocate for development of Regulation for sustainable agriculture and gardening in the periphery of the two wetlands
- Contribute and advocate for development of Guidelines for sustainable harvesting of reed for mat weaving
- Contribute and advocate for development of Guidelines for sustainable harvesting of 'Kattelhi'
- Contribute and advocate for development of Guidelines to prevent chemical fertilizers and pesticide run off to the wetlands and marine area
- Access rules for all core areas of Fuvahmulah biosphere reserve
- Contribute and advocate for development of Legal framework to regulate wildlife-human interactions especially for sharks (feeding, touching, chumming, waste dumping)
- Contribute and advocate for development of Regulation to protect and preserve heritage sites of Fuvahmulah
- Regulation and guidelines on film and photography at heritage sites
- Regulation and guidelines for sustainable agriculture and gardening in the periphery of the two wetlands
- Guidelines for sustainable harvesting of reed for mat weaving
- Guidelines for sustainable harvesting of medicinal plants
- Guidelines for anchoring and mooring in the Farikede area for eco-tourism purposes
- Guidelines on responsible diving and snorkelling practices in the marine area
- Guidelines for tiger shark watching with special emphasis on visitor safety
- Guidelines for water sports activities
- Contribute and advocate for development of Sustainable fisheries guidelines (sea cucumber, octopus, lobster, groupers, aquarium species when and if applicable) spear pole fisheries guidelines and taxa specific size class classification
- Guidelines for big game fishing, jigging etc
- Guidelines on products that could be sold at the visitor centres and establish quality control standards
- Develop and update management plans for the core areas of Biosphere Reserve
- Develop and update management plans for the buffer zones
- Develop a regulation for Biosphere Reserve trust fund management
- Develop guidelines for Biosphere Reserve logo use

6.2 KEY STAKEHOLDERS AND RESPONSIBILITIES

Stakeholders for the implementation of the Fuvahmulah Biosphere Reserve action and management plan are entities with the responsibility to achieve the action plan of the Biosphere Reserve, people who are affected directly or indirectly by projects or activities undertaken for the implementation of the action plan or those that have an interest in the projects or activities undertaken and could have influence over the results of the Fuvahmulah Biosphere Reserve action plan. Stakeholder engagement refers to a process of sharing information and knowledge, seeking to understand the concerns of stakeholders and building relationships based on collaboration. Engagement with stakeholders is an inclusive and culturally appropriate process that provides stakeholders with opportunities to express their views and participate in the implementation of the activities. These will be considered, responded to, and incorporated into the decision making of the Fuvahmulah Biosphere Reserve. Stakeholder engagement for the implementation of the activities in the Fuvahmulah Biosphere Reserve action plan will be designed to facilitate ongoing exchange of information that allows to identify, understand, and address stakeholder priorities and concerns and improve decision-making and transparency

The stakeholder engagement activities of the Fuvahmulah Biosphere Reserve shall be designed to be consistent, comprehensive, and a coordinated long-term approach that encourages open and transparent dialogue with as broad a range of stakeholder groups as is appropriate. The approach to stakeholder engagement has the following main objectives:

- To facilitate an open and inclusive approach to consultation that provides meaningful, timely and transparent information concerning the governance, funding, and sustainable development of the Biosphere Reserve.
- To increase the opportunity to provide feedback on the projects and activities of the Biosphere Reserve and to voice opinions.
- To provide the mechanism for managing stakeholder and community expectations and possible misconceptions about the projects and activities of the Biosphere Reserve.
- To gather the stakeholder's view on past, present, and predicted environmental and socio-economic impacts of the projects and activities undertaken by the Biosphere Reserve and ways to mitigate negative impacts.
- To ensure stakeholders understand the potentially significant environmental and social impacts of the projects and activities of the Biosphere Reserve.
- To optimize any local benefits that can be delivered and livelihood activities that can be enhanced throughout the life of the projects and activities undertaken by the Biosphere Reserve.
- To establish research and knowledge on the values of the Biosphere Reserve.
- To establish a feedback mechanism for ensuring that affected stakeholders have the opportunity to voice their opinions, suggestions and grievances within a transparent process.

Key stakeholders and their responsibility in implementing the action plan of the activities of the Fuvahmulah Biosphere Reserve are classified as internal and external stakeholders. The following are the key stakeholders of the. This list of a stakeholders will be updated on a continuous basis.

Table 4: Key stakeholders for implementing the action plan

Group	Stakeholder
Responsible entity	Fuvahmulah City Council
Responsible entity	Fuvahmulah Biosphere Reserve Advisory Committee
Responsible entity	Fuvahmulah Conservation Trust Fund
Responsible entity	Fuvahmulah Biosphere Reserve Management Office/Unit (FBRM Office/Unit)
Policy maker	Ministry of Environment, Climate Change and Technology
Regulator	Environmental Protection Authority
Responsible entity	Nature Park
Policy makers	Ministry of National Planning, Housing and Infrastructure
Policy makers	Ministry of Arts, Culture and Heritage (MACH)
Policy makers	Ministry of Tourism
Policy makers	Ministry of Fisheries, Marine Resources and Agriculture
Policy makers	Ministry of Economic Development
Policy makers	Ministry of Transport
Policy makers	Ministry of Education
Policy makers	Ministry of Finance
Regulator	Local Government Authority
Local authorities	Fuvahmulah City Council
Local authorities	Fuvahmulah Women's Development Committee
Regulators	Utility Regulatory Authority
Private Sector	Guesthouses
Private Sector	Liveaboards
Private Sector	Dive centres
Private Sector	Farmers
Private Sector	Fishers
Private Sector	Traders
Private Sector	Artists
Civil Society	Social and environmental NGOs
Scientific Community	Maldives National University (MNU)
Scientific Community	Islamic University of Maldives (IUM)
Scientific Community	Villa College
Scientific Community	Maldives Marine Research Institute

Table 5: Responsibilities of key stakeholders for implementing the action plan

Stakeholder	Responsibilities
Fuvahmulah City Council	Governance, finance, outreach, communication
FBRAC	Advice, governance, coordination, stakeholder engagement
Fuvahmulah Conservation Trust Fund	Governance, policy, and technical advice
Fuvahmulah Biosphere Reserve Management Office/Unit (FBRM Office/Unit)	Governance, implementation
Ministry of Environment, Climate Change and Technology (MoECCT)	Policy advice, finance, outreach, communication, Technical advice
Environmental Protection Authority	Technical guidance, regulatory advice, research
Fuvahmulah Nature Park	Management, implementation
Ministry of National Planning, Housing, and Infrastructure	Planning advice, sustainable development advice
Ministry of Arts, Culture and Heritage (MACH)	Heritage conservation
Ministry of Tourism	Visitors and tourism guidelines
Ministry of Fisheries, Marine Resources and Agriculture	Fisheries and agriculture guidelines
Ministry of Economic Development	Sustainable livelihood, SMEs
Ministry of Transport	Net Zero Emissions guidelines
Ministry of Education	Outreach, school education programmes, curriculum development
Ministry of Finance	Budget, Funds set up advice
Local Government Authority	Governance
Maldives Marine Research Institute	Research partnerships, communication
Fuvahmulah City Council	Governance
Women's Development Committee	Governance, women's engagement, partnership
Utility	
Guesthouses	Visitor experiences, sustainable tourism
Liveaboards	Visitor experiences, responsible wildlife interactions
Dive centres	Visitor experiences, responsible wildlife interactions
Farmers	Organic farming, visitor experiences
Fishers	Responsible fisheries
Traders	Souvenirs, local products, minimize waste
Artists	Artistic expressions, performances, cultural interactions
Social and environmental NGOs	Partnerships, advocacy
Maldives National University (MNU)	Research, communication
Islamic University of Maldives (IUM)	Research, communication
Villa College	Research, communication
Maldives Marine Research Institute	Research, communication

6.3 INSTITUTIONAL AND FINANCIAL FRAMEWORK

The key institutions responsible for implementation of the action plan are:

- Fuvahmulah City Council
- Ministry of Environment, Climate Change and Technology
- Environment Protection Authority

Different models of funding will be utilised for the Fuvahmulah Biosphere Reserve. National government funding will be the preferable, and reliable long-term funding source for the Biosphere Reserve. The Fuvahmulah City Council will work closely with Ministry of Environment, Climate Change and Technology to develop a medium-term programme budget framework for the Biosphere Reserve. Fuvahmulah City Council will take responsibility for submitting the annual budget of the Biosphere Reserve to the Ministry of Finance.

The administrative budget of the Biosphere Reserve Management Office will be included in the Fuvahmulah City Council budget. The Fuvahmulah City Council will work with the Local Government Authority and the Ministry of Finance to include the administrative budget in the annual national block grant provided to the City Council. Where challenges remain to increase the annual national block grant, Fuvahmulah City Council will seek the support of the Ministry of Environment, Climate Change and Technology to secure funds for the administrative budget.

Project funds will be an important component of the financial framework for the Fuvahmulah Biosphere Reserve. The Fuvahmulah City Council will work with Ministry of Environment, Climate Change and Technology and the Ministry of Finance to seek project finance from relevant national funds, multilateral banks, and international donors. In addition to that, to ensure sustainability, innovative financing options will be explored to integrate into the conservation fund. Project concept notes and detailed project proposals will be prepared in advance by the Biosphere Reserve Management Office/Unit.

6.4 COMMUNICATION AND OUTREACH

The Communication strategy is designed to give attention to:

- biodiversity conservation, heritage conservation and enhancement of sustainable livelihoods in the context of social dynamics in Fuvahmulah
- change the perceptions, beliefs, behaviours, and motivations through communication goals
- strengthen the institutions and organizational capacity for communication

The communication strategy has been developed through consultations with key internal and external stakeholders including the Fuvahmulah City Council and Nature Park staff.

Table 6: Strategic Communication Matrix

Challenges	Objectives	Expected Results
Inadequate budget for Biosphere Reserve management	Conduct advocacy for inclusion of biodiversity conservation, heritage conservation and sustainable livelihoods as priorities for policy design and implementation	Greater allocation of national budget for Fuvahmulah Biosphere Reserve
	Develop the tools and communication materials to mobilize the international finance for biosphere reserve	Greater success with international project finance
Poor involvement of national level institutional stakeholders	Reach out to ministers and Members of Parliament to increase coordination and collaboration	Improved coordination and increased participation for Biosphere Reserve management
Poor understanding and awareness of the concept of Biosphere Reserve at the local level	Develop messages, materials, and methods of communication to mobilize the community	Increased community participation and sustainable practices
Contradictory development policies	Establish ongoing dialogue and communication among policy makers and community decision makers	Improved planning and policy design for sustainability at city level

Target audiences

The following are the critical target audiences for communication.

- Policy makers (government ministers and Members of the Parliament)
- Ministry of Finance
- Councilors
- International donor agencies
- Community leaders, youth, and women
- Private sector

Messages and content design

Policy makers (government ministers and Members of the Parliament)

- economical values of tiger sharks, rare shark species, Thoondu, and wetlands
- economic and social value of the uniqueness and flora of Fuvahmulah
- concise data and illustrative examples to mobilize budget support
- values and concepts such as efficiency, democracy, transparency, results, visibility, and progress at the national level
- technical content that is relevant and of high impact
- experts and their views
- status of the law and regulations related to Biosphere Reserve management

Councilors:

- ecological significance of Fuvahmulah biodiversity
- importance of biodiversity to make Fuvahmulah the 'Happiest Place on Earth'
- economical values of tiger sharks, rare shark species, Thoondu, and wetlands
- social value of the uniqueness and friendliness of Fuvahmulah
- importance of culture and heritage for Fuvahmulah
- importance of data driven budgeting
- efficiency, democracy, transparency, results, visibility, and progress for sustainability

International donor agencies:

- Significance of Fuvahmulah biodiversity at the global level
- Opportunity for globally significant results from Biosphere Reserve management
- Value and success to be derived from capacity building
- Scope for synergy through partnerships

Community leaders, youth, and women

- ecological significance of Fuvahmulah biodiversity
- importance of biodiversity to make Fuvahmulah the 'Happiest Place on Earth'
- economical values of tiger sharks, rare shark species, Thoondu, and wetlands
- social value of the uniqueness and friendliness of Fuvahmulah
- importance of culture and heritage for Fuvahmulah
- role of civic engagement and volunteering
- use of Biosphere Reserve brand and logo for economic gain
- employment, income, and livelihood opportunities through Biosphere Reserve

Private sector

- sustainable business development opportunities
- renewable energy and e-transport opportunities
- use of Biosphere Reserve brand and logo for branding and marketing
- sustainable tourism development based on wildlife
- importance of organic agriculture for health, wellbeing, and sustainable economic development

6.5 BUSINESS AND MARKETING

Fuvahmulah Biosphere Reserve will play an important role in conservation of biodiversity, culture and heritage, new knowledge generation and creation of new experiences that can be linked to the socio-economic development of the community in Fuvahmulah. The annual business and marketing plan for the Biosphere Reserve will outline the resources necessary to fulfil the goals and objectives of the Biosphere Reserve, the main funding sources and the amount of finance estimated to be generated from each source. The business plan will match with the goals and objectives of the Biosphere Reserve and the time frame for activities. The business plan also will include the total revenue and expenditure estimated for the year and identify the budget gap between available funding and the resources necessary to achieve the goals. Effective partnership building activities with potential funders will be organized every year by the Biosphere Reserve.

Some of the potential income sources:

- Central government funding
- Local government funding
- Industry sponsorships
- Donations
- Ecotourism tariff
- Natural resource use levy
- Sales of merchandise
- Sales of labelled local produce
- Partnerships in funded projects
- Subsidized loans
- Grants

Main expenses of the Biosphere Reserve entity can be:

- Full time and part-time staff
- Consultant fees
- Office facilities
- Equipment
- Travel
- Community consultations
- Awareness materials
- IT and communications

Marketing strategy

The Fuvahmulah Biosphere Reserve status places Fuvahmulah in a unique position to market and promote the island. UNESCO has one of the most famous and best recognized global brands. A marketing strategy for the Fuvahmulah Biosphere Reserve is designed to identify the products, services, distribution, prices, and promotion of the Biosphere Reserve.

Key objectives

The key objectives of the Fuvahmulah Biosphere Reserve marketing strategy are

- improving awareness, and understanding of the Fuvahmulah Biosphere Reserve
- improving collective action towards the objectives of the action plan
- optimizing engagement with the key stakeholders of the Fuvahmulah Biosphere Reserve

Unique Selling Point (USP)

The most important nature based economic sector in Fuvahmulah is wildlife tourism. Fuvahmulah is unique in that it offers divers to see different types of rare sharks. Tiger sharks, Thresher Sharks, Scalloped Hammerheads, Oceanic Mantas and Mobulas can be seen throughout the year. Rare types of shark encounters include Longimanus, Maco, and Small Tooth Sand Tiger Sharks. Sun/Moon fish or Mola-Mola that appear from time to time while Humpback, Pilot and Melon headed whales, Spinner dolphins also pass by Fuvahmulah.

Tiger shark dives is the most famous activity in Fuvahmulah and attracts visitors from different countries. There is a need to establish an annual calendar event to bring local and international attention to the importance of protection of Tiger sharks.

Thoindu, located on the north end of Fuvahmulah is unique to the Maldives with its 'Bissaaveli', natural swimming pools formed during sand movement.

Fuvahmulah Biosphere Reserve logo

Guidelines will be developed to ensure appropriate use of the name and logo of Fuvahmulah Biosphere Reserve by all authorized entities, and to prevent misuse both by any unauthorized entity as well as by authorized entities. The guidelines will ensure avoidance of any misunderstanding, connected to Fuvahmulah Biosphere Reserve, and prevent the impression that Biosphere Reserve certifies the quality of all products or services. Authorization of the use of the name and logo of the Biosphere Reserve will be a privilege and will be a responsibility of the Fuvahmulah Biosphere Reserve Management Office to answer queries related to logo use. The guideline will also cover the sale of

goods or services with the name and logo of Fuvahmulah Biosphere Reserve and must be authorized by the Fuvahmulah Biosphere Reserve Management Office.

Business and marketing activities

- Develop an information management and communication strategy for Fuvahmulah Biosphere Reserve
- Develop the website for Biosphere Reserve
- Develop a social media strategy and channels for engagement for Biosphere Reserve
- Develop a publicly searchable online knowledge base of the Biosphere Reserve and link to the Maldives Conservation Portal
- Publish the baseline assessment of species and habitats in the core areas and buffer zones of the Biosphere Reserve
- Publish and distribute a biannual electronic newsletter
- Publish the 'State of Biosphere Reserve Report'
- Develop an annual calendar for awareness and information sessions to different stakeholder groups such as farmers, tourism service providers, fishers, women, youth, and make it publicly available
- Celebrate environmentally significant days
- Participate in the network of Maldives Atoll Biosphere Reserves to exchange information and lessons
- Participate in the UNESCO World Network of Island and Coastal Biosphere Reserves
- Participate in the South and Central Asia MAB Network
- Participate in UNESCO World Network of Biosphere Reserves
- Establish an online forum for exchange of information and knowledge between Biosphere Reserves
- Formulate a plan to contribute to the World Network of Biosphere Reserves
- Conduct an annual business planning, review, and evaluation workshop for the Biosphere Reserve
- Develop the marketing strategy for the Biosphere Reserve
- Develop the brand strategy and the rules for Fuvahmulah Biosphere Reserve products and services
- Identify the product range and pricing strategy for permanent collections, organic collections, seasonal collections, and special orders
- Develop the quality assurance procedures
- Develop a website for online marketplace

6.6 BUDGET ESTIMATES AND RESOURCE MOBILIZATION

The stakeholders identified that guaranteed finance is essential for the full functioning of the Biosphere Reserve and for implementation of this Action Plan. Currently, the guaranteed funding available for functioning of the Biosphere Reserve entity is the budget allocated to Fuvahmulah City Council from the annual national block grant. Ministry of Finance provides the block grant to the Council through the annual national budget. The Biosphere Reserve entity was transferred to the Fuvahmulah City Council in 2021. From 2022 onwards, the Fuvahmulah City Council has the responsibility for securing the administrative budget of the Biosphere Reserve Management Office. Fuvahmulah City Council is already challenged with recruiting new technical staff due to budgetary challenges; hence alternative funding mechanisms will be important for the Biosphere Reserve entity to function.

The Fuvahmulah Biosphere Reserve office will need funds for the administration of office and for implementation of this Action Plan: The administrative functions include the setting up of the Fuvahmulah Biosphere Reserve Office with staff and equipment; setting up the cloud storage system; development of Fuvahmulah Biosphere Reserve website and communication channels. The programme functions under this Action Plan include the research, communication, and education programme; stakeholder engagement programme; biodiversity conservation programme; culture and heritage conservation programme; sustainable livelihood programme; and the Net Zero Emissions and Zero waste programme.

The following table summarizes the annual estimated programme budget for the implementation of the activities in the Action Plan.

Table 7: Estimated annual programme budget

Year	Recurrent Administrative Budget in '000 MVR	Activity Budget in '000 MVR
2022	0	150
2023	3,950	16,250
2024	3,035	38,430
2025	3,035	36,430
2026	3,035	29,030
2027	3,035	16,380
2028	3,035	10,930
2029	3,035	13,880
2030	3,035	15,030
2031	3,035	10,880

The Biosphere Reserve has mechanisms for collecting visitor fees and partnership fees. The fees will go into a trust fund. The guidelines for use of the fund can help establish where budget needs for the Biosphere Reserve can be managed through different sources of funding. In addition, there are diverse range of funding sources that Biosphere Reserve can tap into both nationally and internationally. Establishing a social enterprise model for Biosphere Reserve products sales, funding from individual projects, from international scientific institutions, international NGOs and Green Funds are mechanisms that need to be tapped into and secured.

Resource mobilization plan

Resources can be mobilized for the action plan through the following sources:

- The national budget
- Local council budget
- Fuvahmulah Biosphere Reserve trust fund for eco-tourism activity tariff
- Permanent revolving fund
- Private conservation fund for voluntary and incentive-based contributions and industry sponsorships
- Donations
- Fund raising activities, sales of merchandise, sales of labelled local produce
- Partnerships in funded projects
- Subsidized loans
- National and international green funds
- Grant assistance through bilateral and multilateral agencies
-

It is anticipated that the national budget will be the main source of finance for the implementation of the activities. The Ministry of Environment, Climate Change and Technology will be responsible to mobilize budgetary support through the Ministry's annual budget planning.

6.7 RESEARCH AND MONITORING

Fuvahmulah Biosphere Reserve Management Office will facilitate biodiversity and sustainability research. During consultations with stakeholders, it was noted that there is a need to develop a research framework and strategy for the Biosphere Reserve, to improve the knowledge base on the ecosystems and their services within the Biosphere Reserve. Since the capacity to undertake rigorous scientific research is limited, there is a need for shared collaborative scientific research projects with well-established research centres and academic institutions.

Fuvahmulah is gaining growing popularity for wildlife tourism, particularly tiger shark dives. It is important to understand the shark species and marine ecosystem characteristics to inform and guide wildlife interactions for sustainable tourism. Similarly understanding the economic and social value generated from wildlife tourism backed by research and data is important for the socioeconomic value of nature-based tourism in Fuvahmulah.

The Farikede core area is a known all year around aggregation site for Reef Manta (*Mobula alfredi*). The Maldivian Manta Ray Project (MMRP), a research programme run by Manta Trust (<https://www.mantatrust.org/maldives>), has been conducting research on mantas, and has evolved to one of the largest research programmes on mantas in the world.

Biodiversity conservation will become mainstream when knowledge is shared, and its benefits are valued and recognized. Regular monitoring and research are undertaken by Fuvahmulah Nature Park on the core areas especially birds and other flagship species. Additionally, biannual monitoring of the water from wetlands are carried out to analyse the health of ecosystems and impacts from external pressures such as pollution. The coral reefs of the Fuvahmulah Biosphere Reserve are regularly monitored through the national coral reef monitoring framework and the data is fed into the National Coral Reef Monitoring Database (<https://coraldatabase.gov.mv>).

The need to incorporate citizen science as an innovative approach for research and monitoring in the Biosphere Reserve was also highlighted. Recognition and respect to the unique traditional biodiversity knowledge of our citizens is a priority. By helping to maintain and build this knowledge it can be used more effectively when developing biodiversity conservation management programmes. Special emphasis will be given to synthesize traditional and local knowledge and involve citizens in research and monitoring.

Sharing useful information through effective and open communication and data and knowledge exchange is a necessity for the Biosphere Reserve. To enhance the research and monitoring of biodiversity of Maldives, the Government of the Maldives has launched the Maldives Conservation Portal (<https://maldivesconservationportal.org/>). The portal provides information about citizen science

initiatives and projects, e-learning modules with video lectures by renowned experts, as well as reference material on climate change and nature conservation with some 400 publications that can be accessed through the portal. All the publications relevant to the Fuvahmulah Biosphere Reserve will be made available on this portal. Contemporary communication and information channels such as social media and digital video conferencing will be used extensively to share knowledge and connect with people. Such sharing of information is expected to increase the engagement with diverse external audiences as well.

The future of biodiversity, heritage and sustainability will depend on the collective action of a well-educated society. Hence, delivery of well-planned long-term education to change the attitude and behaviour towards conservation and sustainable utilization of biological and cultural resources is a key objective. The Fuvahmulah Nature Park and Visitor Centre established in September 2018, will continue the efforts of education and awareness.

Research objectives

- educate and raise awareness among biodiversity conservation and management to stakeholder groups
- inform the work of Fuvahmulah City Council in areas including tiger shark interactions, marine wildlife management, wetland management, Thoondu beach management, pest control, threatened species protection and conservation, licensing, fisheries management, and urban development
- advise emergency responses including flood control, fires, to protect conservation
- develop and implement frameworks for adaptive management

Research priorities

- understanding shark species and marine ecosystem characteristics to inform and guide wildlife interactions for sustainable tourism
- understanding economic value of marine biodiversity
- understanding wetland species and ecosystem characteristics to inform conservation
- understanding threats to biodiversity such as climate change, urban development, weeds, pests, and fertilizer use
- detecting critical changes such as coral bleaching, beach erosion, anthropogenic disturbances on habitats
- understanding traditional medicinal properties and values
- knowledge of history and heritage
- understanding of the ecological, economic and health, benefits of mangoes
- understanding of the pest, diseases, and threats to yam and other food crops

6.8 TECHNOLOGY NEEDS

The key technology needs identified for the Fuvahmulah Biosphere Reserve to monitor, protect, and conserve biodiversity are:

- mobile ecological surveys
- applications for individual-level monitoring
- fixed survey
- remote sensing and satellite imagery
- automated processing of data streams
- automated image processing
- blockchain
- data analysis, and enabling technologies
- data sharing

As a first step Biosphere Reserve Management Office needs to establish the capabilities for computing hardware and software, communications, and data and image capturing.

Equipment and software needed for the Fuvahmulah Biosphere Reserve Management Office include:

- 10 laptops
- 4 personal computers
- 10 tablets (Microsoft or Apple)
- 8 drones suitable for environmental research and monitoring
- 2 underwater cameras
- 2 DSLR cameras
- 2 wireless projectors
- 2 mobile sound systems
- Human Resources (HR) management system software
- cloud storage facilities for data, information, photos, and videos (eg: Google Drive, Microsoft OneDrive, Adobe Creative Cloud, Dropbox)
- graphics software license for environmental research and monitoring
- data processing software license for data analysis
- payment collection system (Bank of Maldives Payment Gateway)
- Geographic Information Systems (GIS) software (eg: ArcGIS)

6.9 HUMAN RESOURCE NEEDS

When fully operational, fourteen staff will form the Biosphere Reserve Management Office to fulfil all the functions of the Biosphere Reserve. They will be working in four key areas: (i) conservation; (ii) livelihood and funds management; (iii) sustainable development; and (iv) education, research, and marketing.

Fuvahmulah Nature Park and Fuvahmulah City Council currently have staff who have functions relevant to biosphere reserve management. They are a manager, one conservation officer, one administrative staff, one ranger and three maintenance and cleaning staff as listed below

Table 8: Staff with functions for Fuvahmulah Biosphere Reserve management in January 2023

Name	Designation
Staff 1	Assistant Director (Manager)
Staff 2	Conservation Officer
Staff 3	Ranger
Staff 4	Assistant Council Officer (Admin)
Staff 5	Council Assistant
Staff 6	Council Assistant (Contract)
Staff 7	Council Assistant (Contract)

Minimum of ten staff will be required for the effective and efficient management of the Fuvahmulah Biosphere Reserve. To fulfil the mandate of the Biosphere Reserve, the Fuvahmulah Biosphere Reserve shall have a manager, a human resource officer, a finance officer, and a livelihood and funds management officer at the administration level. These staff should have minimum bachelor's degree qualification in business management or related fields. The minimal technical officials shall consist of a conservation and sustainability officer; a livelihood officer; and an education, research, and knowledge generation officer. These staff should have minimum bachelor's degree qualification in environmental science, environmental management, development studies, economics, or related fields. In addition, a speed boat captain and four rangers with boat crew skills will be needed for the Fuvahmulah Biosphere Reserve.

Human resource recruitment activities

- Recruit the managers for the Fuvahmulah Biosphere Reserve
- Recruit the professional and technical officials for the Fuvahmulah Biosphere Reserve
- Recruit the administrative staff for the Fuvahmulah Biosphere Reserve
- Recruit support staff for the Fuvahmulah Biosphere Reserve

Capacity building activities

- Establish the Human Resource Management System for the Fuvahmulah Biosphere Reserve
- Conduct training on modern techniques and tools for ecosystem management
- Conduct leadership training for management staff
- Conduct training on sustainability monitoring to the staff
- Organize training courses on modern techniques and field gear for biodiversity surveys and monitoring
- Conduct training on methods of collection, preparation and maintenance of plant and animal specimens
- Conduct training on building and managing databases
- Organize training courses on geographical information systems (GIS)
- Conduct training on development and management of websites
- Organise national study tours for the Fuvahmulah Biosphere Reserve
- Organise international study tours and exposure trips for Fuvahmulah Biosphere Reserve
- Develop the training materials for capacity development
- Organise an annual training on Biosphere Reserve and the importance of its functions for relevant officials
- Conduct training on disaster risk management for officials of Fuvahmulah Biosphere Reserve
- Develop sustainable training programme for farmers of Fuvahmulah
- Develop training programmes for the fishers in Fuvahmulah
- Develop training programmes for tourism service providers in Fuvahmulah
- Conduct training for apprentices and strengthen their skills and knowledge of the traditional medicines
- Sign MoUs with international centres of excellence for biodiversity conservation and sustainability education

7. MONITORING & EVALUATION

The Fuvahmulah Biosphere Reserve office shall monitor and evaluate the Fuvahmulah Biosphere Reserve Action Plan. Monitoring and evaluation of the Action Plan is necessary to continuously improve the conservation of biodiversity and cultural heritage efforts and demonstrate sustainable development.

This Monitoring and Evaluation Plan sets out the approach to measure the performance, demonstrate the accountability and evaluate the results of the Action Plan.

Performance monitoring and periodic evaluation are synergistic. Monitoring is defined as systematic collection of data on specific indicators to provide key stakeholders with evidence of the extent of progress and achievement of objectives. Monitoring will regularly track the inputs, activities, outputs, outcomes, and impacts of the Action Plan. Performance monitoring enables identification of risks, management of risks, and better allocation of resources.

Evaluation is defined as the systematic assessment of the relevance, efficiency, effectiveness, and sustainability of the Biosphere Reserve. Evaluation will indicate to the community and the stakeholders the accountability of Fuvahmulah Biosphere Reserve office and the City Council in achieving the purpose and results of the Biosphere Reserve. While monitoring information is a necessary input for evaluation, it is by itself not sufficient for the deeper analysis required for evaluation.

Performance Monitoring

Fuvahmulah Biosphere Reserve office will implement activities under the Action Plan and make publicly available an Annual Performance Report (APR).

The Ministry of Environment, Climate Change and Technology will inform the Fuvahmulah Biosphere Reserve office on the indicators and data requirements for the respective APR.

The Fuvahmulah Biosphere Reserve office manager will be responsible to gather the data, undertake analysis, and prepare the report. Each office or agency that is required to implement activities under the Action Plan shall mobilize and contribute resources as appropriate to establish an information management system, and manage the information by keeping them updated, easily accessible, and consistent.

The Fuvahmulah Biosphere Reserve office manager will make the APR publicly available. The APR shall include a concise description of the actions taken by the Fuvahmulah Biosphere Reserve office in the previous calendar year to implement the functions of the Biosphere Reserve. The APR shall also include analysed summary descriptions of written comments by persons or organizations regarding the relevant activity in the Action Plan, risks for biodiversity conservation, and risks for sustainable development. The APR shall also include the response by the Fuvahmulah Biosphere Reserve office to the comments.

The APR shall be prepared before the end of the month of February in every calendar year. The APR shall be made publicly available in digital format. A digital copy of the APR shall be submitted to the Ministry of Environment and the Environment Protection Agency before 01 March every calendar year.

Results Evaluation

A joint Biosphere Reserve Evaluation Team (BRET) with staff from Fuvahmulah City Council and Fuvahmulah Biosphere Reserve office will be established to undertake periodic evaluation of the Biosphere Reserve management. The BRET will maintain an e-library of all evaluation documents on a shared cloud platform. The evaluation team will communicate findings by delivering presentations internally and externally.

The Biosphere Reserve management will be evaluated three times during the next ten years. The first and formative evaluation will be undertaken in January 2023. This evaluation will assess the implementation planning of Action Plan.

A mid-cycle evaluation will be undertaken by December 2027.

A cumulative and summative evaluation will be undertaken by December 2031 to assess the continuing need for the activities in the Action Plan and to inform the future Action Plan.

The findings of periodic evaluation will be communicated widely. The results from periodic evaluations of the significant policies in the Action Plan will be reported to the Ministry of Environment, Environment Protection Agency, and the Fuvahmulah City Council. All external reports shall be digital in nature and link directly to original data sources. All external evaluation reports will be made accessible to the public and media through the websites of the Fuvahmulah Biosphere Reserve office.

8. INDICATORS

Success indicators for biodiversity conservation

- Increasing understanding of economic value of biodiversity
- Economic valuation studies of biodiversity published
- Fuvahmulah biodiversity index developed
- Ecosystem services of Fuvahmulah quantified
- Assessment reports on key species completed
- Assessment reports on key habitats completed
- Capacity building for ecosystem restoration conducted
- Assessment and prioritization of restoration opportunities completed
- Legal framework for species restoration established
- Number and population of key species protected
- Database on species records maintained
- Regulations and guidelines on pesticide use
- Reduced reports on cases of invasive species

Success indicators for heritage conservation

- Increase in understanding on the value of Fuvahmulah history and culture among population below 30 years of age
- Positive attitude and behaviour change towards culture and heritage protection
- Number of heritage management plans implemented
- Increase in level of priority by policy makers for culture and heritage protection
- Increase in number of culture and heritage-based products and experiences
- Increase in visitation for culture and heritage experiences
- Increase in number of media mentions about Fuvahmulah culture and heritage

Success indicators for sustainable livelihood

- Yearly reduction in import of chemical fertilisers
- Yearly reduction in import of pesticides
- Increasing trend in organic mangoes produced
- Total value of yam traded commercially
- Number of people and businesses trained in organic farming
- Number of people and businesses trained in food processing and packaging
- Consolidated database for various fisheries
- Number of fishery management plans implemented
- Number of fishers trained in conservation friendly fishery
- Number of international visitors to Fuvahmulah
- Number of domestic visitors to Fuvahmulah
- Average annual occupancy rate of tourism establishments in Fuvahmulah
- Increasing in visitor expenditure on local products
- Establishment of online trader's market

- Ratio of people whose income is generated from biodiversity and ecosystem services

Success indicators for sustainable development

- Reduction in volume of plastic water bottles imported to Fuvahmulah
- Reduction in volume of waste sent to landfills from Fuvahmulah annually
- Volume of waste sent for recycling annually
- Number of annual training hours on environmental and social assessment impact assessment and sustainable development
- Improvement in water quality parameters in nature park
- Quality of treated affluent water
- kWh of renewable energy used for water production

Success indicators for climate change adaptation, mitigation, and resilience building

- Decrease in carbon footprint
- Reduction in GHG emissions from electricity production in Fuvahmulah
- Proportion of e-vehicles in land storage
- Increase in number of bicycles use among school students
- Proportion of properties covered by flood insurance
- Reduction in annual flood damage and disaster relief costs
- Area of beach protected from erosion
- Proportion of beach with management plans

Success indicators for research and monitoring

- Research agenda published
- Increase in funds mobilised for research
- Increase in number of collaborative research partnerships
- Increase in number of research articles on Fuvahmulah biodiversity
- Increase in number of research articles on Fuvahmulah culture and history
- Functional GIS database established

Success indicators for strengthening communication, outreach, and public relations

- Fuvahmulah biosphere relevant materials and content to be used in schools
- Number of people reached through different awareness programmes
- Increase in positive perception of people towards biosphere reserve
- Increase in women's engagement in biosphere reserve activities
- Increase in youth engagement in biosphere reserve activities
- Numbers of schools and environmental clubs actively engaged in conservation
- Number of NGOs actively engaged in conservation

Success indicators of governance

- Clear mandates established for biodiversity mandates at city level
- Increase in level of stakeholder engagement in biodiversity conservation
- Number of new regulations to address the gaps
- Number of regulations revised
- Number of biodiversity management plans developed and implemented
- Number of management plans developed for heritage and implemented
- Number of training programmes conducted annually for city councilors and council staff
- Number of training programmes conducted for law enforcement officials

Success indicators for stakeholder engagement

- Increase in stakeholder participation and engagement
- Stakeholder satisfaction with biosphere reserve communication
- Stakeholder satisfaction with biosphere reserve activity participation

Success indicators for institutional coordination

- Number of collaborative engagements undertaken
- Number of coordination meetings and events
- Increase in satisfaction levels among institutional leaders on coordination mechanism

Success indicators for communication and outreach

- Proportion of city council elected officials, parliamentarians, judiciary, and decision makers who participated in the awareness activities
- Number of awareness programmes by different target groups
- Increase in engagement with audience by type
- Increase in type and diversity percentage of messaging delivered
- Increase in number of media mentions on biosphere reserve
- Increase in different target audiences quoting of biosphere reserve

Success indicators for business and marketing

- Social media follower base in Fuvahmulah
- Social media follower base nationally
- Social media follower base internationally
- Increase in awareness of biosphere reserve logo
- Increase in positive sentiment of local businesses on biosphere reserve logo use
- Increase in traffic on biosphere reserve website
- Increase in average time spent on biosphere reserve website
- Increase in number of visitors who will recommend Fuvahmulah Biosphere Reserve

Success indicators for funding to biosphere reserve

- Year on year increase in government expenditure for Fuvahmulah biodiversity conservation
- Year on year increase in government budget allocation for species conservation
- Increase in government budget allocation for professional staff for biosphere reserve
- Increase in government budget allocation for trainings for biosphere reserve personnel
- Increase in government expenditure to harness innovative technology for biosphere reserve management
- Year on year donor growth
- Growth in donation
- Pledge fulfilment percentage
- Fundraising return on investment (ROI)

Success indicators for research and monitoring

- Increase in number of people engaging in citizen science programmes
- Increase in number of successful monitoring programmes implemented with existing collaborators
- Increase in number of data sharing arrangements
- Increase in understanding of research priorities amongst peer research organizations

Success indicators for technology needs

- Increase in staff satisfaction with technology adoption
- Increase in staff competency in technology utilization

Success indicators for human resource needs

- Number of professional staff in biosphere reserve management technical needs
- Number of staff trained by their respective areas
- Training alignment with core functions of the biosphere reserve
- Increase in staff satisfaction
- Gender balance in professional position in biosphere reserve management
- Stakeholder satisfaction with performance of biosphere reserve staff

ANNEXES

ANNEX 1: FORECASTED BUDGET ESTIMATES FOR GOALS IMPLEMENTATION

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
1	Conserve and sustainably use biodiversity and beauty of natural ecosystem	1.1 Recognize and understand the ecological systems, processes, and their values	Undertake a comprehensive baseline assessment of the fauna and flora species found in the core areas (both marine and terrestrial protected areas) to map the species distribution	3 sites	Baseline of Core areas - boundaries mapping, vegetation, reef health (existing baseline for Farikede and Thoondu), megafauna (manta rays, whale sharks - by MWSRP, Manta Trust). Management Plan done for both wetlands.	MoECCT	EPA, FCC, (FBRM Office/Unit)	3	Every 5 years	3,000
			Undertake an updated detailed baseline assessment of Farikede	Assessment report	Management plan work ongoing by Ministry, a rapid assessment report is available	MoECCT	EPA, FCC	1	2025	500

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Map the wetlands using drone photography to capture the detailed habitat description of the sites	Digital map	Mapping of all core areas have been completed. Detailed habitat mapping to be undertaken	MoECCT	EPA, FCC, FBRM Office/Unit	1	2024	1,000
			Undertake an in-depth assessment of hydrology, biota, processes, nutrient cycling, climate regulation, and other ecological characters of the two wetlands	Assessment report	Biota done	MoECCT	EPA, FCC, FBRM Office/Unit	1	2025	3,000
			Update the biota inventory for each core area annually	Digital database	Biota done	MoECCT	EPA, FCC, FBRM Office/Unit	1	Annual	250
			Prepare a catalogue of all marine taxa (corals, fish, invertebrates, and megafauna)	Digital database	Reptiles' booklet done, other taxa ongoing by nature park staff,	MoECCT	EPA, FCC, FBRM Office/Unit	1	2024	300

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Prepare planktonic profiles around Fuvahmulah	Report of assessment	Incomplete	MoFMRA	FCC, EPA	1	2024	250
			Assist in the production of educational and promotional videos with content creators that demonstrate the importance of biodiversity to the daily life of people	Digital media content	TikTok competition done (bad reputation for doing this in the past due to exploitation of artists)	FCC	MoECCT, EPA, FBRM Office/Unit		2024	250
			Report on the global and national indices on the status and trends of biodiversity	Report	Global indices exist, needs to localised	MoECCT	EPA, FCC, FBRM Office/Unit		2025	500
			Integrate dashboards to report status and trends of Fuvahmulah biodiversity into the website	Digital dashboard	Instagram, Facebook, TikTok done. No website	FCC	MoECCT, EPA, FBRM Office/Unit		2025	200

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Adopt the national monitoring protocols and inclusion of citizen science (schools, university, community) for regular monitoring	Methodology framework	National coral reef monitoring framework is in place	MoECCT	Addu City Council, MNU	1	2024	200
			Undertake annual monitoring of climate change impacts, coral bleaching, and anthropogenic disturbances on habitats	Monitoring report	Baseline exists	FCC	FBRM Office/Unit	1	Annual	1,000
			Undertake regular monitoring of coral recruitment	Monitoring report	EPA work in progress long term monitoring baseline (data base), enforcement areas, (All core areas) by end of 2022	FCC	FBRM Office/Unit	1	Annual	250
			Undertake a study on visitor experience	Report	No survey conducted	FCC	FBRM Office/Unit, MoECCT, MACH	1	2023	250

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Undertake monitoring of anthropogenic disturbances on habitats	Monitoring report	No regular monitoring undertaken	FCC	FBRM Office/Unit	1	Annual	500
		1.2 Develop the principles, policies, and guidelines and establish mechanisms for improved management effectiveness of the biosphere reserve	Develop and update management plans for the core areas and buffer zones of the biosphere reserve	Management plans	1 management plan developed	MoECCT	FBRM Office/Unit, EPA	2	2030	2,500
			Undertake METT analysis for all core areas	Report	No METT analysis	MoECCT	FBRM Office/Unit, EPA	3	2030	
			Introduce and implement IUCN green list standard to improve management effectiveness of core areas and buffer zones	Sites green list certified	Incomplete	MoECCT	FBRM Office/Unit, EPA, FCC	1	2030	1,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Prepare technical guideline for the biosphere reserve	Guidelines	Global guide needs to be localised	MoECCT	FBRM Office/Unit, FCC	1	2025	250
			Establish the Fuvahmulah Biosphere Reserve Advisory Committee	Committee meetings	Completed	MoECCT	FCC, EPA, LGA	2	Annual	30
		1.3 Contribute to the development and adoption of tools and processes to protect species and habitats	Undertake an assessment of marine megafauna movement near Fuvahmulah, especially commercially important species	Assessment report	Some understanding of manta ray and whale shark movement	FCC	EPA, MoFMRA, MoECCT, MMRI, NGOs	1	2025	1,500
			Undertake a detailed assessment of ecological, social, cultural, and economic values derived from the two wetlands and	Assessment report	Baseline exist for social and ecological values and requires updating. Cultural and economic values need to be studied	FCC	MoECCT, EPA, MACH, MMRI		2024	2,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Contribute to the development of good agricultural and gardening practices in the periphery of the two wetlands	Legal framework	Already in the management plan as a Council responsibility. The Council is developing a guideline for agriculture within wetland	FCC	MoECCT, EPA	1	2023	
			Develop guidelines for sustainable harvesting of reed for mat weaving	Legal framework	Completed	FCC	FBRM Office/Unit	1	2022	
			Contribute and advocate for the development of guidelines for sustainable harvesting of 'Kattelhi'	Legal framework	Incomplete	FCC	MoFMRA	1	2023	300
			Contribute to identify and map all types of agriculture and gardening in the proximity of the wetlands	Digital map	Incomplete	FCC	MoFMRA	1	2023	300

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Undertake regular water testing to determine the impact of agriculture on the water quality of wetlands	Monthly results	Water testing (weekly) in wetlands done - pH temperature, TDS, salinity, conductivity, BOD nitrates/nitrites can also be done	FCC	FBRM Office/Unit	12	Annual	300
			Contribute and advocate for the development of guidelines to prevent chemical fertilizers and pesticide run off to the wetlands and marine area	Legal framework	Incomplete	FCC	MoFMRA, MoECCT	1	2023	
			Contribute and advocate for development of a guideline to prevent the spread of invasive and alien species in the biosphere reserve	Legal framework	Insufficient	MoFMRA	EPA, MoECCT, MNDF, FCC Council	1	2023	

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Contribute and advocate for adoption of guidelines for citizen science (reef health, megafauna movement, wetland, birds, terrestrial invertebrates)	Standards and guidelines	MMRI Guidelines, Manta trust, MWSRP, ORP (turtles) exist	FCC	MoECCT, FBRM Office/Unit	6	2023	150
			Identify and establish potential KBAs within the biosphere reserve	KBAS	No KBAs	MoECCT	EPA, FBRM Office/Unit	1	2025	500
		1.4 Implement programmes to restore species and habitats	Develop and ensure implementation of code of conducts to regulate wildlife-human interactions, especially for sharks (feeding, touching, chumming, waste dumping)	Code conduct of	Some species-specific code of Conduct is available. Need to address shark feeding and touching	FCC	MoECCT, EPA, MoFMRA, MMRI, NGOs	1	2025	300

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Undertake an assessment of the species that have disappeared or are at the risk of extinction	Assessment report	No baseline done	FCC	MoECCT, EPA, MoFMRA, FBRM Office/Unit	1	2025	5,000
			Contribute to the development and implementation of a control programme for Rhinoceros beetle (Oryctes rhinoceros) to prevent destruction of coconut palm trees	Management programme	No programme in place	FCC	EPA	1	2026	100
			Contribute and advocate to undertake environmental and ecological impact assessments for re-introduction and restoration of threatened species	Assessment report	Incomplete	FCC	MoECCT, EPA	1	2025	500

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Undertake an assessment of restoration actions to remove excessive materials to prevent water logging in wetlands	Assessment report	Incomplete	FCC	EPA	1	2024	500
			Undertake an environmental impact assessment to eradicate the exotic and invasive species such as tilapia (footu-mas) and waterlilies population in the wetlands and enhance the native population of fish (eel) and flora	Assessment report	Incomplete	FCC	EPA	1	2024	500
		1.5 Strengthen financial sustainability of core areas and buffer zones of the biosphere reserve	Develop operational guideline for biosphere reserve conservation trust fund management	Legal framework	1 completed	MoECCT	Ministry of Finance, MMA, CMDA	1	2022	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Establish a conservation trust fund to finance Fuvahmulah Biosphere Reserve management activities	trust fund	1 established	MoECCT	FCC, MOF	1	2023	
			Strengthen the existing conservation trust fund to incorporate innovative financing options	Innovative financing mechanism	No existing innovative financing mechanisms	MoECCT	FCC, MOF	1	2027	5,000
			Develop proposals to secure finance from bilateral and multilateral donor agencies for conservation and adaptation	Amount of funding secured	One proposal developed	MoECCT	FCC, FBRM Office/Unit	1	Annual	75
			Organise fundraising events for the biosphere reserve	Events	No fundraising events	FCC	FBRM Office/Unit	1	Annual	250
			Develop the business plan with revised user fee structure	Business plan	Incomplete	MoECCT	FCC, FBRM Office/Unit	1	2023	750

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Develop the marketing strategy for the biosphere reserve	Strategy document	Incomplete	FCC	MoECCT, EPA, Nature Pak	1	2023	1,500
			Develop the brand strategy for Fuvahmulah Biosphere Reserve products and services	Strategy document	Incomplete	FCC	MoECCT, EPA, Nature Pak		2023	
2	Safeguard culture and heritage and showcase them to gain economic benefits	2.1 Promote greater awareness, knowledge and engagement with culture and heritage	Establish an inventory of the material and cultural heritage of Fuvahmulah	Digital database	Completed	FCC	FBRM Office/Unit	1	2023	150
			Incorporate and promote Fuvahmulah history and culture into communication materials of the biosphere reserve	Communication materials	Incomplete	FCC		1	2025	300

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Ensure effective participation and engagement of heritage experts in biosphere reserve planning and implementation	Heritage expert participation	Heritage expert included in FBRAC	FCC	FBRM Office/Unit	1	Annual	
		2.2 Improve policy and process to enable shared protection of culture and heritage	Contribute and advocate for the development of a regulation to protect and preserve heritage sites of Fuvahmulah	Legal framework	Insufficient	FCC	MACH, FBRM Office/Unit	1	2024	300
			Contribute to development of guidelines on film and photography at heritage sites within core areas and buffer zones of the biosphere reserve	Guideline	Insufficient	MoECCT	FBRM Office/Unit	1	2023	100
			Integrate celebration of Ramadan, Eid and Islamic festivals and other Fuvahmulah festivals into annual plans	Events	Fuvahmulah Nature Park does participate in annual events	FCC	MACH, MOT, MMPRC, Ministry of Islamic Affairs	2	Annual	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
		2.3 Improve storytelling, visitor experience, and services to increase visitation and engagement	Establish digital interactive storytelling to enhance visitor experience	Information guides	Incomplete	FCC	NGOs	1	2024	2,500
			Facilitate poetry and literary competitions to promote and celebrate Fuvahmulah dialect	Literary competitions	Insufficient	FCC	NGOs, Schools	1	Annual	200
			Facilitate events for culinary festivals showcasing local food	Awareness events on cultural food practices	Insufficient	FCC	Resorts, Schools	1	Annual	500
3	Achieve sustainable livelihoods by enhancing economic and social benefits to all from biodiversity and culture	3.1 Strengthen agriculture and food services to achieve sustainable livelihoods	Contribute to undertake a technical and financial feasibility study for sustainable agriculture	Revival of native agricultural species	Insufficient	FCC	MoFMRA	2	2023	300

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Conduct awareness and promote good agricultural practices within the biosphere reserve	Awareness sessions	Incomplete	FCC	MoFMRA, MED	1	2024	750
			Encourage development of a biosphere reserve strategy for local produce	Strategy Document	Produce sells well during growing season. But leads to overproduction when all farmers produce the same products	FCC	MoFMRA, MED, Farmers	1	2023	500
			Contribute and advocate for development of guidelines for sustainable harvesting of reed for mat weaving	Standards and guidelines	A guideline is needed. Not a very common activity	FCC	EPA	1	2023	200
		3.2 Promote inclusive nature-based sustainable tourism in Fuvahmulah	Develop the guidelines for anchoring and mooring in core areas and buffer zones for eco-tourism purposes	Standards and guidelines	Insufficient	FCC	FBRM Office/Unit, MoECCT	1	2024	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Integrate access and permit system for biosphere reserve core areas into the online platforms	Digital application	Physical ticketing system to visit in FBRM Office/Unit. No access permit system in place for yachts and liveaboards visiting Fuvahmulah biosphere reserve	FCC, MoECCT	FBRM Office/Unit	1	2024	150
			Contribute and advocate to implement guidelines on responsible diving and snorkeling practices in the marine area	Standards and guidelines	Best practice for snorkeling and diving exist globally and at a national level. Needs to mainstreamed at an island level	FCC	FBRM Office/Unit	1	2024	150
			Develop guidelines for tiger shark watching with special emphasis on visitor safety	Standards and guidelines	No guideline in place	FCC	FBRM Office/Unit	1	2024	250

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Develop interactive maps for visitors to nature parks	Digital map	Incomplete	FCC	FBRM Office/Unit, Visitor Centres	1	2023	1,750
			Create an access ring road pathway on the outer boundary of the protected areas with banisters to provide easy access to visitors (walkways, bicycle pathway etc.) and manage access to limit damaging activities	Infrastructure	Incomplete	FCC	FCC/EPA	1	2026	8,000
			Erect signs that identify 'dos and don'ts' in wetlands; interpretive boards to provide valuable information on resources; and indicate routes, intersections, distances, and depths	Sign boards	Insufficient, some boards are in place within the nature park	FCC	FBRM Office/Unit, MoECCT	2	2024	700

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Place safety signs and safety materials around the protected areas	Sign boards	Incomplete	FCC	MoECCT, FBRM Office/Unit	2	2024	750
		3.3 Promote responsible management of fisheries for biodiversity conservation	Incorporate biosphere reserve principles by participating in atoll level fisheries development and management planning	Planning sessions	Ministry of FishAgri has a grouper management plan, and additional guidelines for sea cucumber and aquarium species	MoFMRA	FCC, MoECCT, EPA, NGOs	2	2023	100
			Contribute and advocate to undertake a detailed assessment on 'Kattelhi' fisheries	Assessment report	No baseline assessment	FCC	MoFMRA	1	2023	200
			Contribute and advocate to develop guidelines for sustainable harvesting of 'Kattelhi'	Standards and guidelines	An unwritten agreement is already in place for Kattelhi fishing: it is done on certain days to prevent overfishing/loss of value	FCC	FBRM Office/Unit	1	2023	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Contribute and advocate to develop social media material and content for promotion of 'Kattelhi'	Media content	Incomplete	FCC	MoFMRA	2	2023	100
		3.4 Diversify trade and manufacturing activities to reduce the overdependence on biological resources	Develop visitor centres at Bandaara Kilhi, Dhadimagi Kilhi and Farikede with information, souvenirs, and refreshments/café	Infrastructure	Souvenirs need to come from local artists, not mass produced from overseas. There are local artists who are involved in painting, making products from eco-friendly materials (phone cases etc), crocheting, locally sourced skincare products and much more. No organised souvenir shop in place as of now	FCC	FBRM Office/Unit	1	2025	8,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Develop guidelines on products that could be sold at the visitor centers and establish quality control standards	Standards and guidelines	Prevent the sale of mass-produced souvenirs that have been imported	FCC	FBRM Office/Unit	1	2023	200
4	Achieve sustainable development	4.1 Promote zero waste, and prevent the impacts of waste on the biosphere reserve	Design and introduce Fuvahmulah Biosphere Reserve green bags	Green bags	Incomplete	FCC	FBRM Office/Unit, Visitor Centres, Schools	100,000,00	2024	350
			Encourage the use of reusable water bottles as alternative for PET bottles within the Biosphere Reserve	Reusable water bottles	Incomplete	FCC	FBRM Office/Unit, Visitor Centres	100,000,00	2024	500
			Develop social media material and content to create public awareness programmes on waste and litter	Awareness programme	Some materials are developed nationally	FCC	FBRM Office/Unit	2	2024	150
			Organise and participate in waste clean-up campaigns	Event	No dedicated waste clean-campaign in place	FCC	FBRM Office/Unit, Visitor Centres, Schools	1	Annual	50

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
		4.2 Achieve integrated water and sewerage development	Undertake biennial water quality monitoring of Fuvahmulah biosphere reserve core areas and buffer zones	Digital database of monitoring data	Insufficient	FCC	FBRM Office/Unit	1	Biennial	50
5	Achieve climate change adaptation, mitigation & resilience building	5.1 Reach Net Zero Emissions (NZE) in electricity	Install solar PV, energy storage, and energy efficiency in the biosphere reserve management office to demonstrate smart office	Renewable energy system	Incomplete	FCC	MoECCT, FENAKA, URA	1	2025	1,000
			Development material and content for energy efficiency awareness based on government energy rating system	Awareness programme	No awareness material developed	FCC	MoECCT, FENAKA, URA	2	2024	50
		5.2 Pave the way for transition to net zero emissions (NZE) in transport within the biosphere reserve	Advocate and contribute to national goals to reach net zero in transport sector within the Biosphere Reserve.	Meetings	Incomplete	FCC	MNPPI, EPA	2	2023	50

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Design and build the walking tracks and bicycle lanes around the wetlands	Infrastructure	Incomplete	FCC	MNPHI, EPA	1	2024	6,000
			Establish benches along the walking track to support pedestrians	FBRM Office/Unit infrastructure	Few benches installed in around one of the core areas	FCC	MoECCT, FBRM Office/Unit	5	2024	5,000
			Establish water re-fill stations on the walking track	FBRM Office/Unit infrastructure	No refill stations	FCC	MoECCT, FBRM Office/Unit	5	2023	1,000
			Establish partnership for vehicles and vessels repair and maintenance	Partnerships	Incomplete	FCC		1	Annual	250
			Develop a strategy to launch a mayor's bicycle scheme in Fuvahmulah	Strategy document	Incomplete	FCC	FBRM Office/Unit	1	2023	50
			Procure bicycles for rental use by visitors to the Bandaara kilhi and Dhandimagu kilhi wetlands	FBRM Office/Unit infrastructure	Few bicycles available	FCC		40	2024	1,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Establish bicycle parking stands in visitor centres	FBRM Office/Unit infrastructure	No stands	FCC		1	2024	300
			Install bicycle fixing stands in strategic locations with the required handy tools	FBRM Office/Unit infrastructure	Incomplete	FCC		1	2024	300
			Establish solar PV electric vehicle charging stations in visitor centres	FBRM Office/Unit infrastructure	Incomplete	FCC		2	2025	1,500
			Promote use of electric boats for use by rangers in water bodies	FBRM Office/Unit infrastructure	Incomplete	FCC		2	2023	2,000
		5.3 Build the resilience of natural systems and community to climate change and natural disasters	Advocate and contribute to national goals of achieving resiliency through climate change adaptation and mitigation in Fuvahmulah Biosphere Reserve.	Meetings	Incomplete	FCC	FBRM Office/Unit, Visitor Centres, Schools	2	2023	50

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
6	Undertake research and monitoring to generate knowledge	6.1 Encourage and support collaborative scientific research	Establish a research hub in Fuvahmulah	Infrastructure	No research hub in Fuvahmulah	FCC	MoECCT, MMRI	1	2026	10,000
			Identify research priorities for the short and long term	Research priorities list	Incomplete	MoECCT	FCC, MACH, MFMRA, MMRI, EPA, MNU, FBRM Office/Unit	1	2023	800
			Develop the Research Agenda and Strategy for Fuvahmulah biosphere reserve	Research agenda	Incomplete	MoECCT	FCC, MACH, MFMRA, MMRI, EPA, MNU, FBRM Office/Unit	1	2023	
			Establish collaborative research partnerships with national universities and institutes	Partnerships	No formal partnerships in place	MoECCT	MHE, MNU, IUM	1	Annual	100
			Establish research partnerships with international universities and organisations	Partnerships	No formal partnerships in place	MoECCT	MHE, EPA, MMRI, MACH	1	Annual	100
			Establish a network of citizen science researchers and writers	Network forum	Incomplete	FCC	MoECCT, MACH, MFMRA	1	2025	500

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Establish a database of local knowledge and traditional management practices	Digital database	Incomplete	FCC	MNU, Schools	1	2025	500
		6.2 Establish the data management capacity for research and monitoring	Develop a strategy for data management	Strategy document	Incomplete	MoECCT	FCC, MACH, EPA	1	2023	200
			Develop GIS spatial data management system	GIS	Incomplete	MoECCT	FCC	1	2023	2,000
			Conduct training on GIS data management	Training sessions	No targeted regular GIS training conducted	FCC	NGOs	1	Every 3 years	500
			Promote and implementation of national protocols for monitoring of species, habitats and other environmental parameters	Monitoring using national protocols	National protocols in place, not implemented widely	MoECCT	FBRM Office/Unit, EPA	1	Annual	200

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
7	Strengthen communication, outreach, education and knowledge management	7.1 Enable diverse, multi stakeholder participation and engagement	Formulate the stakeholder consultations and engagement strategy based on functions of biosphere reserve and key messages from goals and strategic objectives identified above	Strategy document	Incomplete	FCC	FBRM Office/Unit, Visitor Centres	1	2023	150
			Establish a grievance mechanism for Fuvahmulah biosphere reserve	Grievance mechanism	No formal grievance mechanism in place	FCC	FBRM Office/Unit,	1	2023	150
			Establish the Fuvahmulah Biosphere Reserve Advisory Committee	Meetings	Fuvahmulah Biosphere Reserve Advisory Committee established	FCC	MoECCT, FBRM Office/Unit	2	Annual	30
			Prepare annual stakeholder engagement report and disclose it on the Fuvahmulah Biosphere Reserve website	Annual report published	Insufficient	FCC	FBRM Office/Unit, Visitor Centres	1	Annual	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Aim to achieve internationally recognised biosphere reserve awards	Awards	Incomplete	FCC	WDC, Schools, NGOs, FBRM Office/Unit	2	2030	100
		7.2 Enable young people to actively contribute and meaningfully engage with the biosphere reserve	Encourage participation and effective engagement in MAB youth network	Meetings attended	Insufficient	FCC	FBRM Office/Unit, Visitor Centres	1	Annual	750
			Ensure youth representation in the planning and implementation of activities within biosphere reserve	Youth representation	Insufficient	FCC	FBRM Office/Unit, Visitor Centres, MYSCE	1	Annual	70
			Develop an annual programme to provide opportunities for secondary school students to volunteer their time towards conservation activities in biosphere reserve	Strategy document	Incomplete	FCC	Education Ministry, schools in Fuvahmulah	1	Annual	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Develop an internship programme for young people	Interns	No internships [rovided	FCC	Education Ministry, schools in Fuvahmulah	1	Annual	75
		7.3 Enable women's full participation and contribution to Biosphere Reserve activities	Ensure women representation in the planning and implementation of activities within biosphere reserve	Women representation in committee	Consultation with women are conducted regarding biosphere reserve activities	FCC	WDC, FBRM Office/Unit	1	Annual	100
			Ensure gender mainstreaming in planning and implementation of biosphere reserve activities	Women participation	Women participation in activities are ensured	FCC	MoECCT, WDC, FBRM Office/Unit		Annual	100
			Facilitate events to showcase the skills and talent of women in biodiversity, heritage, and livelihoods	Annual event	Incomplete	FCC	WDC, Ministry of Gender, FBRM Office/Unit	1	Annual	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
		7.4 Deliver well planned communication and education to change the attitude and behaviour towards conservation and sustainable utilization of biological and cultural resources	Develop a social media strategy and channels for engagement for Fuvahmulah biosphere reserve	Strategy document	Incomplete	MoECCT	FCC, FBRM Office/Unit	1	2023	550
			Establish the website for Fuvahmulah biosphere reserve	Website	No website	MoECCT	FCC, FBRM Office/Unit	1	2023	2,300
			Develop guidelines for biosphere reserve logo use (in technical guideline)	Guideline	Incomplete	MoECCT	FCC	1	2022	50
			Develop digital and social media materials for public awareness on conservation, livelihoods, and research	Education materials	Some materials are published, but not adequate	FCC	FBRM Office/Unit	1	Annual	1,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Organise an annual forum on biosphere reserve and the importance of its functions for relevant officials	Forum	Incomplete	MoECCT	FCC, FBRM Office/Unit, Ministry of Education	1	Annual	500
			Develop a programme for school students from at least 2 different atolls to visit the biosphere reserve every year	Exchange tours	No formal programme in place, school students visit the biosphere reserve for field visits	MoECCT	FCC, FBRM Office/Unit, Ministry of Education	2	Annual	1,000
			Develop a programme for at least 1 international school actively engaged in conservation activities to visit the biosphere reserve every year	Exchange tours	No formal programme in place	MoECCT	FCC, FBRM Office/Unit, Ministry of Education	1	Annual	1,250
			Integrate Biosphere Reserve related topics in environmental clubs and other school activities	Activity plan	Incomplete	FCC	MoECCT, FBRM Office/Unit, Ministry of Education	2	2025	500

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Identify and utilize existing games, videos, photos and stories on biodiversity, culture, heritage, and sustainable livelihoods	Information materials	Insufficient	FCC	MoECCT, MACH, MFMR, MED, MOT, FBRM Office/Unit	1	2025	300
			Establish partnerships with international centres of excellence for biodiversity conservation and sustainability education	Partnerships	Insufficient	FCC	MoECCT, EPA	2	2025	50
			Develop a publicly searchable online knowledge base of the biosphere reserve and link to the Maldives Conservation Portal	Digital database	Information is not uploaded in the conservation portal	FCC	MoECCT	1	2024	100

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Publish the baseline assessment of species and habitats in the protected areas of the biosphere reserve	Digital publication	Incomplete	FCC	FBRM Office/Unit	1	2025	150
			Publish and distribute a biannual newsletter	Digital publication	Incomplete	FCC	FBRM Office/Unit	1	Biannual	20
			Publish the annual Biosphere Reserve Report	Digital publication	Incomplete	FCC	FBRM Office/Unit	1	Annual	
			Develop the training materials for capacity development for city council and community practitioners working on biosphere reserve activities and initiatives	Training sessions	Incomplete	FCC	MoECCT, FBRM Office/Unit, EPA	1	Annual	200

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Facilitate sustainable training programme for farmers on good agricultural practices of in Fuvahmulah	Training programme	Insufficient	FCC	, MoFMRA, FBRM Office/Unit	1	2024	100
			Facilitate training programmes for the fishers in Fuvahmulah	Training sessions	Insufficient	FCC	MoECCT, MoFMRA, FBRM Office/Unit, EPA	1	Annual	100
			Facilitate training programmes for tourism service providers in Fuvahmulah	Training sessions	Insufficient	FCC	MoECCT, MoT, FBRM Office/Unit, EPA	1	Annual	100
			Conduct training for apprentices and strengthen their skills and knowledge of the traditional medicines	Training sessions	No trainings conducted	FCC	MoECCT, FBRM Office/Unit, EPA	1	Annual	100
			Celebrate environmentally significant days	Events	World wetlands day, environment day are celebrated	FCC	MoECCT, FBRM Office/Unit, EPA	2	Annual	1,000

No:	Goal	Strategic Objectives	Actions	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Target Dates	Budget Estimates in '000 MVR
			Develop an annual calendar for awareness and information sessions to different stakeholder groups such as farmers, tourism service providers, fishers, women, youth, and make it publicly available	Digital calendar	Incomplete	FCC	FBRM Office/Unit	1	Annual	10

ANNEX 2: FORECASTED BUDGET ESTIMATES ADMINISTRATIVE MANAGEMENT OF FUVAHMULAH BIOSPHERE RESERVE

Area	Strategic Objectives	Action(s)	Indicators	Baseline Status	Responsible Agencies	Implementing Partners	KPI	Year	Budget Estimates in '000 MVR
Technology Needs	Acquire the information technology required for Fuvahmulah Biosphere Reserve management	Undertake a comprehensive technology needs assessment for the Fuvahmulah biosphere reserve	Needs assessment	Incomplete	FCC	MoECCT, FBRM Office/Unit	1	2023	100
		Procure 10 laptops for Fuvahmulah Biosphere Reserve staff use	IT equipment	1	FCC	MoECCT, FBRM Office/Unit	10	2023	300
		Procure 4 PCs for Fuvahmulah Biosphere Reserve office use	IT equipment	0	FCC	MoECCT, FBRM Office/Unit	4	2023	100
		Procure 10 tablets for field data collection	IT equipment		FCC	MoECCT, FBRM Office/Unit	10	2023	150
		Procure 2 wireless projectors	IT equipment	0	FCC	MoECCT, FBRM Office/Unit	2	2023	40
	Procure the technology for data collection and research	Procure 4 drones for surveying and photography	Survey equipment		FCC	MoECCT, FBRM Office/Unit	4	2023	100
		Procure 2 underwater cameras	Survey equipment		FCC	MoECCT, FBRM Office/Unit	2	2023	80
		Procure 2 DSLR cameras	Survey equipment		FCC	MoECCT, FBRM Office/Unit	2	2023	80
		Acquire GIS software	Survey software	Incomplete	FCC	MoECCT, FBRM Office/Unit	1	Annual	35

Human Resource Needs	Recruit and retain human resources to manage Biosphere Reserve	Recruit the managers for the Fuvahmulah biosphere reserve	Human resource	Not hired	FCC	MoECCT, Office/Unit	FBRM	1	Annual	300
		Recruit the professional and technical officials for the Fuvahmulah biosphere reserve	Human resource	3 (Insufficient)	FCC	MoECCT, Office/Unit	FBRM	4	Annual	1,200
		Recruit the administrative staff for the Fuvahmulah biosphere reserve	Human resource	Insufficient	FCC	MoECCT, Office/Unit	FBRM	3	Annual	750
		Recruit support staff for the Fuvahmulah biosphere reserve	Human resource	0	FCC	MoECCT, Office/Unit	FBRM	5	Annual	750

REFERENCES

Edition (2019) Maldivian Recipes: Fuvahmulah Specialty, 'Kattelhi' Garudhiya (Fish Broth), <https://edition.mv/recipes/10655>, The Edition. (Online news)

Fuvahmulah City Council (2019) Fuvahmulah Development Plan (Draft), Fuvahmulah City Council, Maldives

IPCC (2021) Sixth Assessment Report (AR6), Intergovernmental Panel on Climate Change, Geneva, Switzerland

IUCN (2021) Project Background Fuvahmulah Biosphere Reserve Action Plan, Unofficial Document, International Union for Conservation of Nature (IUCN), Male' Office, Male', Maldives

MoE (2019) Biosphere Reserve Nomination Form: Fuvahmulah Biosphere Reserve Official Document, Ministry of Environment, Male', Maldives

MoE (2019 b) Community Engagement Report, Fuvahmulah as a UNESCO Biosphere Reserve Nomination Dossier, Official Document, Ministry of Environment, Male', Maldives

MoE (2019 c) Community Based Wetland Management Plan for Fuvahmulah Island, Fuvahmulah as a UNESCO Biosphere Reserve Nomination Dossier, Official Document, Ministry of Environment, Male', Maldives

MoE (2022) Ten-Year Periodic Review of UNESCO Baa Atoll Biosphere Reserve (Draft), Ministry of Environment, Climate Change and Technology, Male', Maldives

NBS (2014) Maldives Population and Housing Census, <https://statisticsmaldives.gov.mv/census-2014/>, National Bureau of Statistics, Male', Maldives

NBS (2020) Statistical Yearbook of Maldives, <http://statisticsmaldives.gov.mv/yearbook/2020/>, National Bureau of Statistics, Male', Maldives

PO (2020) President Ibrahim Mohamed Solih Outlines Maldives' Climate Commitments at Climate Ambition Summit, <https://presidency.gov.mv/Press/Article/24110>, President's Office. (Online website)

R. Michael Feener (Ed.) (2022) Maritime Asia Heritage Survey, <https://maritimeasiaheritage.cseas.kyoto-u.ac.jp/>, last accessed: 23/02/2022

UNESCO (2013) Periodic Review for Biosphere Reserves, UNESCO, Paris, France

UNESCO (2021) Technical Guidelines for Biosphere Reserves, UNESCO, Paris, France