



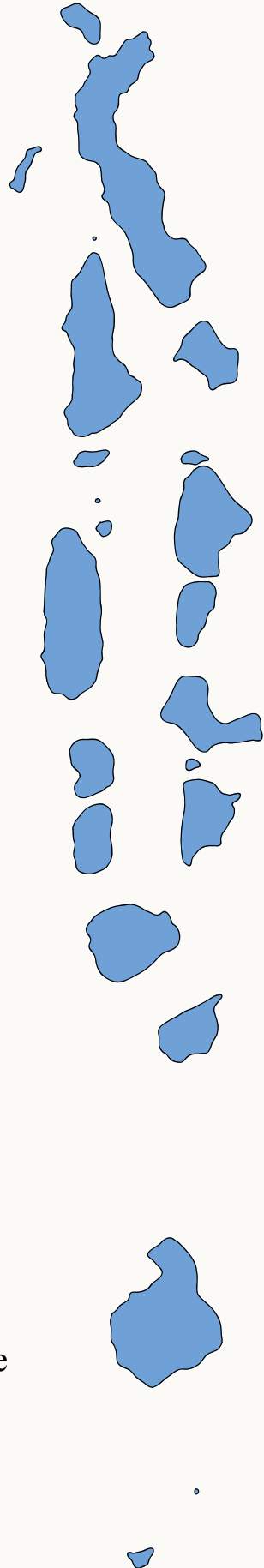
**Ministry of Climate Change,
Environment and Energy**

Stock-take Report on Adaptation Monitoring

Consultancy Services to Review and
Strengthen the Institutional Arrangements for
Climate Change Reporting

CBIT Maldives

Capacity Building for Improved Transparency of Climate Change
Mitigation and Adaptation Actions in the Maldives





Ministry of Climate Change, Environment and Energy
Male', Republic of Maldives

Stock Take Report on Adaptation Monitoring

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*Capacity Strengthening for Improved Transparency of
Climate Change Mitigation and Adaptation Actions in
the Maldives Project*





Ministry of Climate Change, Environment and Energy

Capacity Strengthening for Improved
Transparency of Climate Change
Mitigation and Adaptation Actions in
the Maldives Project (CBIT Maldives)



This document has been financed by the Global Environment Facility (GEF), through Capacity Strengthening for Improved Transparency of Climate Change Mitigation and Adaptation Actions in the Maldives Project (CBIT Maldives), executed by the Ministry of Climate Change, Environment and Energy (MCCEE) with implementation support from UN Environment.

May 2024

Consultant:

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Citation:

MCCEE, (2024). Stock Take Report on Adaptation Monitoring: Ministry of Climate Change, Environment and Energy

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Acronyms

BRO	Biosphere Reserve Office
BTR	Biennial Transparency Report
BUR1	1st Biennial Update Report
CBIT	Capacity-Building Initiative for Transparency
CCA	Climate change adaptation
CCD	Climate Change Department
DSA	Data sharing agreement
ETF	Enhanced Transparency Framework
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
ICCRRIP	Integrating Climate Change Risk into Resilient Island Planning in the Maldives
INFF	Integrated National Financing Framework
IPM	Integrated Pest Management
IWRM	Integrated Water Resource Management

LGAs	Local Governance Authorities
M&E	Monitoring and evaluations
MCCEE	Ministry of Climate Change, Energy and Environment
MMS	Maldives Meteorological Services
MCI	Ministry of Construction and Infrastructure
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
MoT	Ministry of Tourism
MoU	Memorandum of Understanding
MPGs	Modalities, Procedures and Guidelines
MRV	Monitoring, Reporting, and Verification
MTCA	Ministry of Transport and Civil Aviation
NAP	National Adaptation Plan
NBS	National Statistics Bureau
NC2	2nd National Communication
NDC	Nationally Determined Contribution
NGO	Non-governmental organization
QA	Quality Assurance
QC	Quality Control
SMART	Specific, Measurable, Achievable, Relevant, Time-bound (used for objectives)
TNA	Technology Needs Assessment
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
URA	Utilities Regulatory Authority

Executive summary

This report has been commissioned as part of the Capacity Building Initiative for Transparency (CBIT) project, funded by the Global Environment Facility (GEF). It aims to address the gaps and needs highlighted in the 1st Biennial Update Report (BUR1) and establish a robust monitoring, reporting, and verification (MRV) system for monitoring climate change impacts and adaptation.

The thematic focus of the report is adaptation monitoring, involving data collection, analysis, and reporting on risks, vulnerabilities, policies, measures, and actions that reduce the harmful impacts of climate change. It outlines the expected outputs from the MRV system, such as expert reviews, data sets, and indicators, contributing to various domestic and international reports and strategies, thereby supporting transparency in climate change adaptation efforts.

The report reviews the institutional framework for monitoring adaptation actions across governance, expertise, data flows, tools, and stakeholder engagement, examining legal arrangements and potential data collection bottlenecks. It lays the groundwork for a comprehensive MRV system to support informed decision-making on climate action, policy, and investment. The report proposes a detailed list of recommendations to support the list of recommendations provided for the stocktaking exercise on the Maldives' national NDC and climate mitigation tracking system.

Key findings and recommendations under each of the components of the institutional framework are summarized and outlined below.

Governance

1. There's a significant need for a Coordination Framework that clearly outlines the roles of individual data-providing line ministries, and local/island level organizations, including the monitoring and reporting of sectoral indicators, policies, and measures for adaptation NDC target tracking.
2. Climate adaptation is not fully integrated into sectoral, local, and island-level development planning, which requires a clear division of labor across policy planning, implementation, monitoring, evaluation, budgeting, and financing strategies to ensure alignment with the NDC, building on existing mainstreaming efforts like the Health National Adaptation Plan.
3. The Climate Change Act mandates the formation of an 'independent institution' with the purpose "to strengthen financial monitoring of funds received by the Maldives from national and international sources to mitigate climate change effects, improving climate adaptation, to achieve the target of establishing the Maldives as a carbon neutral country, and to protect and maintain the environment". However, engagement with this proposed independent institution for strengthening financial monitoring is lacking, which is necessary to clearly identify and tackle financial gaps in adaptation planning, implementation, monitoring, and evaluation.

Key Recommendations:

- 1. Coordination Framework development**
 - Develop adaptation specific Coordination Framework and data collection plans for indicators, policies and measures with supporting regulations, Memorandums of Understanding (MoUs) or data sharing agreements as needed.
 - Establish the roles of the steering committee and technical committees in guiding regular policy planning, data collection, reporting, monitoring and evaluation.
- 2. Mainstream climate adaptation into sectoral, local and island level planning.**
 - Incorporation in Sectoral Planning: Perform a climate adaptation activity screen during the sectoral action plan development, for instance, in the agricultural sector, this could involve adjusting agricultural practices and crop selections based on projected climate impacts,

ensuring that all agricultural development plans include strategies for climate resilience and emission reductions.

- Local and Island Level Development: At the local and island level, urban planning guidelines should be revised to incorporate climate risk assessments, ensuring that infrastructure projects, such as roads and buildings, are designed to withstand predicted climate conditions like increased flooding or higher temperatures.
- Monitoring and Evaluation Protocols: Establish standardized climate-related indicators across all sectors to measure the effectiveness of integrated strategies and ensure continuous improvement. For example, monitoring the reduction in carbon emissions in the transport sector or assessing the effectiveness of newly implemented coastal protection measures.
- Budgeting and Financing: Allocate specific budget lines for climate adaptation and mitigation measures within each sector's annual budget. This could include funding for renewable energy projects in the energy sector or for water conservation technologies in water resource management.
- The formation and regular engagement of the steering committee and technical committees should support this process and clearly communicate priorities from CCD based on ongoing tracking of adaptation targets.

3. Adaptation financing strategy

- Track and monitor the implementation of the INFF alongside independent institution mandated by the Climate Emergency Act, DCC and line ministries to strengthen financial monitoring.

Expertise

Key Findings:

1. Capacity building is required to develop national expertise in performing risk and vulnerability assessments and in assessing climate action vulnerability reduction impacts.

Key Recommendations:

1. Development of national expertise:

- Identify national expert teams responsible for carrying out risk and vulnerability assessments and assessing climate action vulnerability reduction impacts.
- Carry out a training program on climate modelling, risk and vulnerability assessments.
- Carry out a training program on assessing climate action vulnerability reduction impacts.

Data flows

Key Findings:

1. The lack of an institutionalized system for collecting and ensuring the quality of climate data (e.g. on risks, vulnerabilities, impacts and actions) is hindering decision-making and sector-specific risk assessments.
2. There are challenges with quantifying adaptation needs and current levels of investment in adaptation action at the local level to effectively understand the scale of requirements for adaptation action.

Key Recommendations:

1. Development of institutionalized system for collecting climate data

- Develop detailed list of SMART indicators (minimum one per adaptation target in the NDC)
- Build database of climate adaptation targets, challenges, actions and indicators.

- Establish a coordination framework with a data collection plan, standardized data formats and protocols for collecting information on climate impacts and climate action outcomes.
2. **Carry out training programs** at the local level on data collection methodologies, use of technology for data gathering and analysis, and understanding of climate adaptation needs and strategies.

Systems and tools

Key Findings:

1. There is a need to standardize data collection and reporting through the use of common tools and templates. These templates should be integrated with any existing systems such as the DesInventar database.
2. Implementation of any new tools or templates must be supported by experts who have received extensive training. These systems should also capture key lessons learned and track national improvement plans.

Key Recommendations:

1. Standardized data collection and reporting tools

- Develop data collection templates for climate impacts and climate adaptation action reporting.
- Develop adaptation target tracking database system that includes mechanisms for data processing, archiving and storage.

2. Develop training program and improvement plan

- Deliver comprehensive training on data collection, processing, management and reporting tools.
- Develop national improvement plan and tracking tools.

Stakeholder engagement

Key Findings:

1. Data is made available to the public and decision makers on request but as discussed above, a lack of capacity at local level limits communication and coordination on adaptation needs and investment requirements.

Key Recommendations:

1. **Develop communication plan** to coordinate regular, schedule communication on progress, challenges and needs for adaptation impact tracking.

Introduction

This report is part of the Capacity Strengthening for Improved Transparency of Climate Change Mitigation and Adaptation Actions in the Maldives project, under the Global Environment Facility (GEF) funded Capacity Building Initiative for Transparency (CBIT) program. The objective of this report is to conduct a stocktaking exercise to identify gaps with respect to the legal arrangements, mandates and institutional framework for adaptation monitoring.

This report will review the institutional framework for monitoring risks, vulnerabilities and adaptation actions through five components: governance, expertise, data availability and flows, systems and tools and stakeholder engagement. This will include a review of the relevant legal arrangements and mandates for collecting relevant information on national adaptation efforts.

The development of a well-functioning MRV system will help the Maldives to track adaptation outcomes such as those in the updated NDC and National Adaptation Plan (NAP).

The findings from this report will serve as the basis for the recommendations and improvement actions described in the Enhanced Transparency Framework (ETF) Roadmap (Deliverable 2.1.2). The report is structured as follows:

- An overview of the MRV System design with respect to the scope, outputs and data types covered.
- Comprehensive stocktaking review of the institutional framework for monitoring adaptation action
- Key gaps and barriers described, including any potential bottlenecks in the legal arrangement.

MRV system concepts

This section introduces concepts for the development of an MRV system, for a full detailed description of the MRV concepts, refer to the Report on Gaps and Needs and Institutional Arrangements for the Monitoring of Mitigation Actions. Through the implementation of the CBIT project, the Maldives will develop a sustainable MRV system that will enable it to track progress towards a range of adaptation, mitigation and climate finance **targets and contribute to a range of different outputs and communications using well understood terms and indicators.**

The analysis draws on a range of recent reports and ongoing work specifications and reports that relate directly or indirectly to the development of an MRV system including:

- Key international climate change reports (e.g. BUR1, 2nd National Communication (NC2), NDC)
- National development strategies (e.g. Strategic Action Plan 2019 – 2023, Low Carbon Development Strategy, Climate Change Policy Framework)
- Ongoing and complete project documents (e.g. GCF Readiness Proposal for Advancing the National Adaptation Plan)
- Documentation of government institutional arrangements and existing data flows.

A full list of the documents reviewed for this project is included in Appendix 1.

Scope

The scope of this report is adaptation monitoring. In line with the Paris Agreement Modalities, Procedures and Guidelines (MPGs) for reporting under the Enhanced Transparency Framework (ETF), the full scope of adaptation monitoring includes:

- Current and projected climate trends and hazards

- Observed and potential impacts of climate change
- Loss and damage
- Adaptation priorities and barriers
- Adaptation goals, actions, objectives, undertakings, efforts, plans (e.g. national adaptation plans and subnational plans), strategies, policies, priorities (e.g. priority sectors, priority regions or integrated plans for coastal management, water and agriculture), programs and efforts to build resilience.
- Adaptation implementation progress
- Monitoring and evaluation of adaptation actions and processes

Given the broad range of disciplines involved in adaptation monitoring, a comprehensive institutional framework are required with well-resourced experts across different sectors with access to high quality data.

Outputs

Reporting on adaptation monitoring includes a range of domestic and international outputs. These outputs include:

- Reporting on climate change impacts and adaptation in the Biennial Transparency Reports and National Communications (non-mandatory)
- NDC tracking and updates.
- Updates to national policies and strategies such as the National Adaptation Plan, and the draft Strategic Action Plan (SAP) 2024–2028 (under development).
- Sectoral programs and initiatives such as GEF-financed project Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector Project and Health National Adaptation Plan.
- Adaptation related planning and funding documents including Project Identification Notices (PINs), proposals and concept notes for long term programmes such as the GCF-country programme and adaptation pipeline development work under the NDC Partnership’s Partnership Action Fund (PAF).
- Subnational level strategic development plans such as the Island Land-use and Development Plans which are informed by adaptation resilience data.

Engagement with these outputs requires a consolidated effort to track and manage adaptation data by well resources experts.

Challenges, targets, actions, indicators

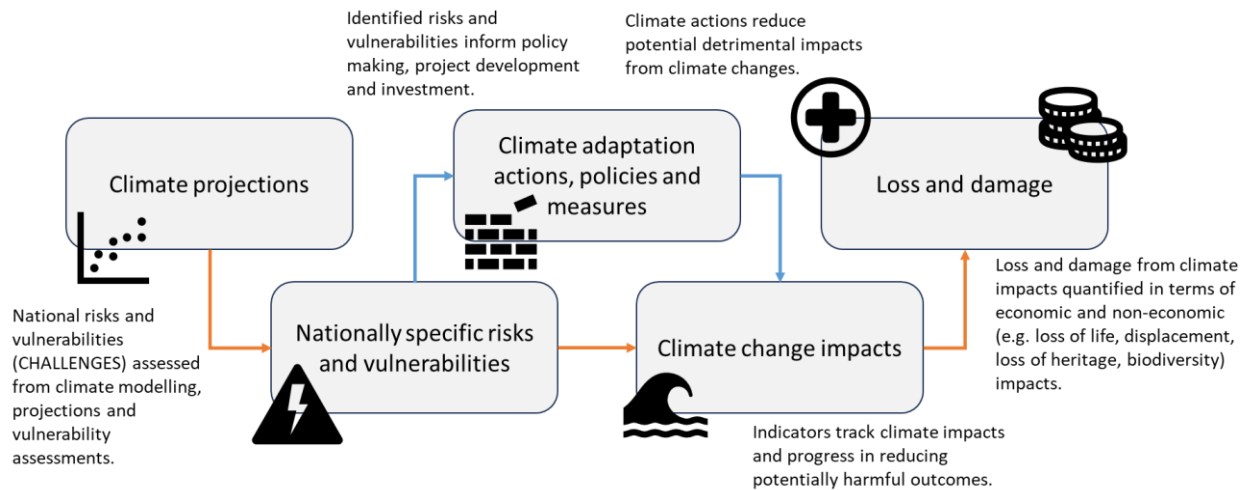
The MRV system will help stakeholders identify and track a range of climate related **targets** (such as those in the NAP and NDC), **actions** (policies, measures, projects, initiatives), and **indicators** to track the progress of both. The structure of this data is similar to the data structures used to track progress of mitigation actions and targets. However, adaptation efforts also require a more detailed view of the **challenges** presented by climate change (current and projected climate trends and hazards, observed and potential impacts of climate change, loss and damage). These challenges are the drivers for enhanced ambition and actions to increase resilience. A comprehensive understanding of the challenges is also needed to communicate financial, technological and capacity building needs to the international community for support with implementation of adaptation action.

The sections below illustrate examples of these data types and their relevant for adaptation monitoring.

Challenges

Understanding the threats and challenges enables the MRV system to support decision makers with justification for actions. Describing the challenges in narratives and presenting indicators on challenges (e.g. numbers of severe weather events and their impacts) focus stakeholders on the call to action and provide

transparent evidence on the problems. Challenges include climate risks and vulnerabilities, which lead to impacts, and, ultimately, loss and damage. Any step along this process can be classified as a challenge and can be used to justify the development of targets, policies and measures that reduce risk and/or vulnerability, limit the impacts of climate change or avoid/minimize loss and damage. The figure below illustrates the role of identifying challenges in addressing and reducing climate impacts, loss and damage.



Information on challenges can be structured and maintained in the MRV system to support consistent communication between stakeholders. These challenges can be specific to organization, sector, time and geography. Areas of challenges relevant to the Maldives, include¹:

- **Threats to human life** due to increased prevalence of severe and extreme weather events.
- **Economic losses to the fishing and tourism industries** due to ocean acidification, sea temperature rise and coral reef bleaching.
- **Land loss, economic loss and damage to low lying infrastructure** due to sea level rise.
- **Threats to limited freshwater resources** due to sea level rise and increased rainfall variability.
- **Reduction in agricultural crop yields** due to increased rainfall variability and sea level rise.
- **Increased risk to food storage and distribution facilities** due to severe and extreme weather events.
- **Increased threats to human health from vector borne diseases** due to increased prevalence of climate extreme and El Niño-Southern Oscillation (ENSO) events.
- **Soil surface temperature and increased pest prevalence** due to temperature fluctuations and increases in average temperatures.
- **Soil erosion** due to extreme wind speeds and weather events.

The national MRV system should be aware of the relevant challenges, track them and link them to targets, actions and indicators. The list above is not exhaustive and should be developed in full through vulnerability assessments for the MRV system.

Targets

Adaptation targets cover a wide range of subject matters and are far less standardized than climate mitigation targets. The ultimate goal of all adaptation targets is to increase resilience and reduce vulnerability from climate change impacts. Adaptation targets often rely on policies and measures-based approaches to achieve their goals. Broadly, adaptation targets fall under one of a few types:

¹ Adapted from the NAP Readiness Proposal, 2022.

- **Strengthening legislative frameworks** to integrate climate change adaptation efforts into mainstream national development planning.
- **Increasing resilience/climate proofing** land areas or infrastructure.
- **Increasing human and technical capacity** to plan and respond to climate change impacts.
- **Developing financial mechanisms** to better equip institutions and sectors to deal with climate change impacts.
- **Developing and improving technologies** to better track climate trends, risks and impacts.

The targets extracted from the Maldives' NDC have been categorized based on the types of targets above and are provided in the table below. Some of these targets include elements or approaches that cross-cut multiple target types, in these cases the most appropriate target type has been selected.

Table 1. The Maldives' categorized adaptation targets in the NDC

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
Enhancing Agriculture and Food Security	No relevant targets.	No relevant targets.	Enhance capacity to implement climate smart and Integrated Pest Management (IPM) strategies and practices towards reducing pest damages and pest induced crop losses to increase resilience on crop yields and food security.	<p>Strengthen existing climate risk insurance mechanisms for building resilience against the loss of assets, livelihoods due to extreme events and enhancing relief efforts in the post disaster period taking into account national food and nutrition security.</p> <p>Scale-up investments in building public food reserves and stocks and expanding regional distribution mechanisms across the country as an adaptive measure to increase accessibility and availability to reduce risks of food shortages during extreme events and market irregularities.</p>	Promote research and development focusing on climate smart technologies and practices to address challenges facing the sector due to climate variabilities, seasonal changes and extreme events.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
				Facilitate and enhance access to finance via available national funds and other mechanisms including access to micro-credit, grants etc., to increase farmer's capacity to enhance food security and to increase investments on production systems.	
Infrastructure Resilience	Enhancing the National Building Code to incorporate climate resilience including coastal infrastructure. Strengthen the legislative framework by establishment of a National Planning Act and Physical Planning Act. The	Enhancing the resilience and climate proofing of critical infrastructure such as airports, ports, powerhouses and other utilities etc. Increase resiliency through better spatial planning and increased connectivity between the islands.	No relevant targets.	No relevant targets.	No relevant targets.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
	legislation will facilitate integration of climate change into development planning while considering the economies of scale for public services, land use planning and population consolidation.	Strengthen efforts to conserve and restore mangrove ecosystems considering its numerous services and benefits to people and nature including livelihood of communities and its role as natural buffers or barriers for flood mitigation.			
Public Health	Facilitate integration of climate change into the national health systems to ensure sustainable and climate resilient adaptation measures. Strengthen the existing legal arrangements to address national vector control and	Enhance the resilience of health infrastructure through increased climate proofing and incorporating green and energy efficiency measures.	Enhance the institutional and human capacity to implement the existing vector surveillance programs covering all islands to address the emergence and re-emergence of such diseases and in	No relevant targets.	Promote research to understand the nexus between climate change and health such as its impacts on vector borne diseases, mental health and air quality.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
	implementation of food safety policies and standards.		<p>implementing adequate food safety measures.</p> <p>Enhance public health advocacy and awareness activities to reduce vector borne and other non-communicable diseases including those driven by heat stress and poor air quality.</p>		
Enhancing Water Security	Strengthen policies, programs and campaigns to increase the efficiency of water use to reduce human pressure on the existing water resources.	<p>Implementation of cost-effective Integrated Water Resource Management (IWRM) systems to cater for the water needs of the entire population to reduce the risk of water shortages during dry seasons.</p> <p>Enhance decentralized water security and safety</p>	Improve the overall understanding of impacts from climate change on the natural water resources based on the latest science and implement policies, standards, regulations to pre-emptively protect the natural water resources from future impacts.	No relevant targets.	No relevant targets.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
		<p>plans to be implemented in all islands, considering the nuanced differences of the available water resources and minimize the detrimental impacts on the water resources.</p> <p>Integrate stormwater management into infrastructure development projects.</p>			
Coastal Protection	<p>Promote use of evidence-based decision making on coastal adaptation planning and management of coastal zones.</p> <p>Mainstream climate change risks into coastal development policies.</p>	No relevant targets.	No relevant targets.	<p>Facilitate mobilization of financing to reduce exposure of communities to coastal hazards.</p> <p>Continue to facilitate investments in coastal protection of inhabited islands, industrial islands and resorts.</p>	No relevant targets.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
Safeguarding Coral Reef Biodiversity	Enhance resilience of coral reefs and ecosystems by developing policy tools, incorporating into development plans, promoting best practices, increasing advocacy and through management actions.	Strengthen national conservation programs considering different categories of protection, local and community management, ecosystem-based approach to contribute to the conservation of marine and coastal biodiversity and increase their resilience to climate change impacts while taking the livelihoods of the resource users into account. Implement measures to reduce sources of pollution on coral reefs and ecosystems especially marine life through appropriate policies,	Facilitate research to address knowledge gaps and climate change impacts on coral reefs and marine ecosystems in order to promote sustainable and resilience-based management of coral reefs and marine ecosystems.	No relevant targets.	Strengthen existing coral reef monitoring program by engaging partners and stakeholders and developing tools (such as remote sensing, projections) for predicting, measuring and monitoring effects of climate variabilities and changes on reefs, marine ecosystems and vulnerable species.

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
		development of appropriate treatment facilities, management and safe disposal of solid waste taking into account the timely phasing-out of single use plastics.			
Tourism	Mainstream climate change risks into tourism sector policies to enhance resiliency and sustainability of the sector.	Mainstream and promote clean energy and energy efficiency technologies to reduce the overall emissions.	No relevant targets.	Facilitate access to finance to increase the resilience and sustainable environmental management of the sector. Establish an insurance mechanism to reduce the impacts on the tourism sector through risk sharing and risk management.	No relevant targets.
Fisheries	No relevant targets.	Enhance diversification of the fisheries sector including promotion of multi-functionality to	Facilitate fisheries research and development initiatives taking into consideration resilience	Facilitate access to finance to empower the industry towards meeting the vulnerability challenges	Promote sustainable fisheries by increasing efficiency of fishing vessels, promoting technologies

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
		<p>respond to the emerging challenges and uncertainties due to climate variabilities and extreme events while protecting the health and sustainability of the marine resources and ecosystems.</p>	<p>building of the sector towards managing the changing of fish stocks and its migration patterns, adapting to efficient technologies and investing in national capacity needs.</p>	<p>and increase its contribution to sustainable blue growth considering vulnerable small-scale fishers and fishing communities and their productive role in maintaining food and nutrition security, livelihood and sustaining a successful blue economy.</p> <p>Strengthen insurance schemes to enhance resilience of small-scale fishers and fishing industry to cover against losses due to extreme events and anomalies, ensuring a minimum monthly income for lost fishing days especially for small-scale fishers.</p>	<p>that have potential for reducing GHGs and by developing and upgrading land-based fisheries infrastructures and facilities for a low carbon foot- print.</p>

Sector	Strengthening legislative frameworks	Increasing resilience/climate proofing land areas or infrastructure	Increasing human and technical capacity	Developing financial mechanisms	Developing and improving technologies
Early Warning and Systematic Observation	No relevant targets.	No relevant targets.	Promote research to understand past and future climate trends and their associated impacts.	No relevant targets.	Continue strengthening and expansion of the meteorological network and early warning systems to cover the entire archipelago. Improve the climate and weather forecasting tools for decision making. Strengthen the early warning systems and risk management tools.
Disaster risk reduction and management	Enhance mechanisms for collection of information on losses and damages.	No relevant targets.	Strengthen collaboration with the island communities to understand and obtain information on local impacts.	Facilitate the promotion and participation of the public and private sector in the disaster insurance scheme.	Strengthen the existing databases on disaster risk management.

In addition to the NDC, it is important to consider other sectoral strategies or national development plans, such as the NAP, to ensure the targets and ambitions are aligned across the mandates of different stakeholder organizations.

Actions

The Actions list will detail various projects and programs and initiatives, focusing on adaptation, reducing vulnerability, loss and damage and increasing resilience. The NAP Readiness Proposal and NC2 include details of planned, ongoing and implemented climate change adaptation actions, some examples are listed below:

- **Tourism:** Increasing Climate Change Resilience of Maldives through Adaptation in the Tourism Sector Project (TAP).
- **Fisheries:** Multi-species hatchery program under the IFAD-Mariculture Enterprise Development Project
- **Agriculture and food security:** initiative to introduce hydroponics as an alternative production technology on land scarce islands to further increase food security; integrated farming project using greenhouse auto-pot systems.
- **Water:** Improve access to desalinated or rainwater-piped water and sewage systems across several islands; Increasing climate resilience through Integrated Water Resource Management.

As with climate mitigation actions, developing a live database on climate actions is a vital step to assessing progress against targets, to see which sectoral targets need further attention, any barriers or constraints and what the support needs are to achieve those targets. This is particularly important for adaptation, where the targets are primarily policies and measures based which need urgent attention in addressing.

Since there is no defined reporting format in the Paris Agreement MPGs on adaptation actions, a tabular format designed around domestic needs can be adapted. However, for consistency and cross-sectoral collaboration, a hybrid table that captures information on mitigation and adaptation actions is recommended.

Indicators

Quantitative or qualitative indicators are important to monitor and track the progress of adaptation targets. Indicators should be specific, measurable, ambitious, relevant and time-bound (SMART) to ensure it is feasible to track progress with them. For adaptation, indicators may relate to a specific policy or measure (tracked qualitatively e.g., with a description of progress or assessment of increased capacity, or quantitatively e.g. number of climate-resilient technologies implemented), and they may track adaptation outcomes e.g. change in yield reduction or in projected vulnerability. In the absence of data, percentage target progress based on expert judgement may be used as an interim measure but should be supported with clear explanations and justifications. Under adaptation, indicators are also used to track climate risks, vulnerability and adaptive capacity, i.e. to monitor the progress of the **challenges**. For example, the United Nations Statistics Division Global Set of Climate Change Statistics and Indicators² lists many climate risk and vulnerability indicators such as crop loss due to climate extremes or reduction of surface water bodies.

Example indicators suggested from an analysis of the NDC adaptation targets could include:

Outcome related indicators:

- Hectares of mangrove ecosystems conserved or restored annually.
- Coral reef species richness and diversity
- Access to safe drinking water

² Available here: <https://unstats.un.org/unsd/envstats/climatechange.cshtml>

- Fishing stock biomass

Specific policy or measure related indicator:

- Percentage increase in agricultural areas applying climate smart IPM strategies annually.
- Number of IWRM systems implemented and operational within communities.
- Amount of finance (USD) accessed by small-scale fishers and fishing communities annually for vulnerability reduction and sustainable practices.

The development of a full set of indicators is planned under the CBIT (for agriculture sector) and NAP (all remaining sectors) projects.

Institutional Framework

Successful MRV of climate change adaptation requires consideration of five components for a strong institutional framework:

1. **Governance** such as roles, responsibilities, agreements, laws, and commitments
2. **Expertise** including data, modelling, compilation, and reporting experts across a range of themes.
3. **Data flows** and availability of the data necessary for the MRV system to be of value.
4. **Systems and tools** for information, communication, and engagement
5. **Stakeholder engagement** to effectively communicate the value of the data.

These components will cover a range of formalities and activities across several organisations. These organisations might include government ministries and/or agencies, academic/research institutions, local self-government, private organisations, and consultants. A well-functioning institutional framework will ensure that the MRV system can fulfil the commitments set out in national strategic plans. They will be flexible and sustainable and ensure that resources are available for recurring and continuously improving data gathering, compilation, analysis and reporting across the agreed scope. These components should be used to assess current institutional framework and be used as a foundation for future MRV development.

The sections below present the results of the stocktaking exercise on each of these components using a desk-based review and limited stakeholder survey. Each component is presented with a set of key recommendations, many of these recommendations have already been proposed to be addressed through the CBIT or NAP capacity building activities. They have been highlighted in green or blue if they align with existing activities under the **CBIT** or **NAP** projects respectively.

Governance

Governance refers to the roles, responsibilities and legal arrangements that mandate and support regular and reliable reporting on climate adaptation. The governance related gaps and barriers identified in key document review included:

1. Weak institutional and coordination mechanisms for planning climate change adaptation³:
 - a. A lack of a capacitated intersectoral management structure has also created gaps, overlapping mandates and weak inter-sectoral coordination amongst the institutions and sectors facing climate change impacts.

³ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

2. Lack of systematic integration of CCA into national, island and sectoral development planning and budgeting processes⁴:
 - a. Adaptation inconsistently mainstreamed into sectoral planning and in silos (often based on incomplete or limited vulnerability assessments).
 - b. Lack of coordination between ministries in developing annual and three-year development budgets, as well as a lack of effective collaboration during policy framing have led to difficulty in implementing such policies⁵.
 - c. The intended mainstreaming of CCA planning into key national policies under the Integrating Climate Change Risk into Resilient Island Planning in the Maldives (ICRRIP) project was incomplete, with the ‘Coastal Protection Regulation’ developed only in draft form but not sent for approval or formally adopted or implemented and guidelines being only partially drafted, with limited distribution.
3. Limited and uncoordinated access to financing to reduce vulnerability and increase adaptive capacity⁶:
 - a. A lack of funds and access to financing for projects to reduce vulnerability and increase adaptive capacity has been cited as an issue, this may be mitigation however by the recent development of the Maldives Integrated National Financing Framework (INFF).

The Ministry of Climate Change, Energy and Environment (MCCEE), and CCD in particular, is the key government institution managing climate change adaptation efforts and also serves as the National Designated Authority to the Green Climate Fund (GCF) and NAP implementation agency. The NAP Readiness Proposal (2020) presents a view of current roles and responsibilities besides the CCD related to the implementation of the NAP:

- Ministry of Finance (MoF) — concerning budgetary planning and aid coordination;
- Ministry of Construction and Infrastructure (MCI) — concerning overall national planning and infrastructure adaptation;
- Ministry of Home Affairs (MoHA), and Local Governance Authorities (LGAs) — concerning sub-national governance of local islands and atolls;
- Ministry of Gender, Family and Social Services — concerning gender-responsive development and the inclusion and empowerment of women and vulnerable groups;
- Ministry of Tourism (MoT) — concerning adaptation regulation in the tourism sector;
- Ministry of Transport and Civil Aviation (MTCA) — concerning transportation systems and infrastructure adaptation;
- Ministry of Agriculture and Animal Welfare, and the Maldives Food and Drug Authority (MoFMRA) — concerning food security and agriculture.
- Ministry of Fisheries and Ocean Resources? – Marine resources planning, fisheries sector adaptation
- Ministry of Health, and the Health Protection Agency — concerning adaptation in the health sector;
- Maldives Meteorological Services (MMS) — concerning the aggregation and dissemination of climate information and services, early warning?;
- National Bureau of Statistics — concerning adaptation-related socio-economic data collection and management;

⁴ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

⁵ Climate Change Directorate, Ministry of Environment. 2017. Summary report on National Adaptation Plan Process in the Maldives. Available at: https://unfccc.int/files/adaptation/application/pdf/maldives_summary_cca.pdf

⁶ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

- National Disaster Management Authority — concerning disaster risk reduction; and national utilities — concerning energy and water security, loss and damage data? .
- Environmental Protection Authority (EPA) – primary data collection for adaptation indicators and conducting research on beach erosion, biodiversity management and protected area management.
- Atoll Councils and Island Councils – providing support to the Project Management Unit with island-level governance mechanisms and in monitoring the activities at island and atoll level.

The project related institutional framework also proposes the following bodies are created to support NAP implementation:

- **Steering Committee** – high level representatives from relevant line ministries. Mandated to formulate and implement the policies, programmes and projects identified in the NAP.
- **CSO/NGO Advisory Committee** – representatives from the private sector, civil society and academia, ensuring that women’s and marginalised people’s interests and perspectives are included in decision-making. The CSO/NGO Advisory Committee will support the Steering Committee in its mandate and with validating any sectoral plans, policies, programmes and projects.
- **Technical Committee** – chaired by the UNFCCC focal point. To provide technical guidance and ensure communication and reporting on the NAP process with national and international adaptation communities.
- **Project Management Unit** – including a NAP project manager, Admin and Finance Officer and a Gender specialist. Day to day management of the NAP process.

Based on these existing, project-based arrangements for the implementation of the NAP, a set of adapted formal, permanent roles and responsibilities are proposed in the diagram below, this also includes roles for supporting agencies including the Environmental Protection Agency (EPA), Utilities Regulatory Authority (URA), and Biosphere Reserve Office (BRO). These are also proposed in parallel with the institutional framework proposed in the mitigation stocktaking report with some overlapping elements such as the MRV Steering Committee.

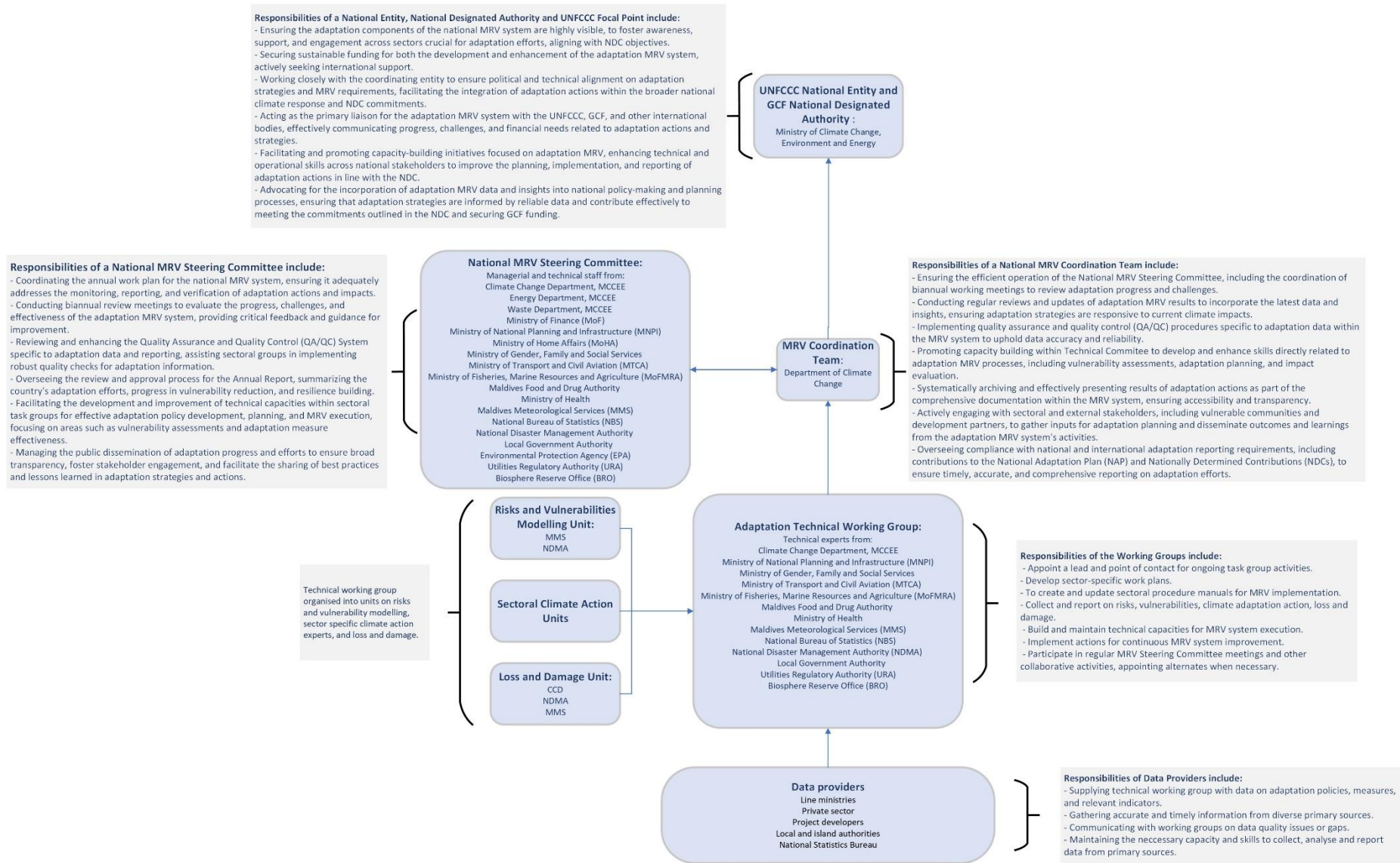


Figure 1. MRV of adaptation monitoring - proposed structure

The key legislation related to adaptation monitoring MRV system is the Climate Emergency Act 09/2021. An analysis of this legislation is presented in the table below.

Table 2. Analysis of Climate Emergency Act with respect to adaptation monitoring MRV.

Legislation	Relevance to the adaptation monitoring MRV system in the Maldives	Comments
Climate Emergency Act 09/2021	<p>Establishes the principles and framework for developing the relevant legislations and regulations on adaptation monitoring (Chapter 7, para 25.a.).</p> <p>Mandates CCD to ‘monitor and assist’ in climate issues at atoll, city and island level, and make necessary plans to improve climate change adaptation level (Chapter 3, para 18.b).</p> <p>Mandates CCD to create and publish data and statistics relating to (Chapter 3, para 18.w):</p> <ul style="list-style-type: none"> a. Degree of beach erosion experienced by various Maldivian islands and the resulting damage sustained by the island infrastructure. b. Precipitation levels for various islands c. Flooding due to high tides experienced by various levels. d. Degree of coral bleaching in Maldivian coral reefs e. Changes to ocean and wind currents over a period of time f. Climate change effects to the Maldives tourism industry g. Climate change effects to the Maldives fishing industry. h. Climate change effects to the Maldives agriculture industry i. Climate change effects to freshwater levels and quality j. Climate change effects to public health <p>Includes adaptation planning into a proposed national action plan (Chapter 5, para 20).</p> <p>Mandates the formation of an independent institution to strengthen financial monitoring relevant to improving climate adaptation (Chapter 6, para 23.a).</p>	<p>There is a clear mandate for CCD to collect and publish data on climate impacts, and to organise and manage a climate adaptation monitoring system (Chapter 3, paragraph 18).</p> <p>The responsibilities of the CCD extend to monitoring and assisting the implementation of climate change issues at atoll, city and island level (Chapter 3, para 18.b), evaluating progress against climate targets such as the NDC (Chapter 3, para 18.d), and identifying, reviewing, and presenting the necessary amendments to the laws, regulations and policies required to achieve the purposes of this Act (Chapter 3, para 18.h).</p> <p>The specifics around data collection for climate adaptation indicators and target tracking are not included in the Act but are intended to be specified through supporting regulation regulations and data sharing agreements (DSAs), still to be drafted (Chapter 7, para 25.a.).</p> <p>The annual progress report includes reporting on ‘climate change related targets’ (Chapter 5, para 21. 3). Supporting regulations</p>

		<p>should help to define the specifics of this reporting on data sets, indicators and how line ministries and other data providers will participate in that process (Chapter 5, para 22).</p> <p>There is a distinction between publishing climate change effects statistics (Chapter 3, para 18.w)) and reporting on progress of NDC targets. As such the identification of NDC target specific indicators should be mandated by the supporting regulations under this Act.</p> <p>Importantly, the roles of individual line ministries, and local and island level government organizations are not defined and should be included as part of supporting regulations.</p> <p>The proposal of an independent institution to strengthen financial monitoring (Chapter 6, para 23.a). intends to address the gap identified in the NAP Readiness proposal: “Limited and uncoordinated access to financing to reduce vulnerability and increase adaptive capacity”.</p>
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Sectoral legislation for adaptation monitoring is patchwork, more so than for data relevant to mitigation efforts. For example, the Fisheries Act which strengthens governance of this sector, and the National Water and Sewerage Policy which aims to support management of water resources in the Maldives however does not directly address considerations to directly address the impacts of climate change on water supply or access.

The 2019-2023 Strategic Action Plan (SAP), although not legislative, does include provisions to support sectoral adaptation planning. For example, the Resilient Communities priority sector which looks to reduce risk and increase resilience with a wide range of strategies and actions, the Blue Economy priority sector which includes adaptation goals in the tourism, fisheries, agriculture, as well as including water and sanitation and health separately.

The key findings on governance are as follows:

1. There is a strong need for a Coordination Framework that clearly defines the roles of individual data providing line ministries, and local/island level organizations.
 - a. This should identify which sectoral indicators, policies and measures need to be monitored and reported to support adaptation NDC target tracking.
 - b. This should formalize data collection plans, any data gaps and needs, a data reporting schedule and standardize data formats.
2. Climate mainstreaming into sectoral, local and island level development planning should be completed, with clear division of labor on policy planning, implementation, monitoring and evaluation, budgeting and financing strategy. This should ensure alignment across sectoral strategies and action plans with the NDC. This approach should build on previous mainstreaming activities, such as those outlined in the Health National Adaptation Plan, which integrates climate resilience measures into public health infrastructure, ensuring that healthcare facilities are equipped to handle increased climate-related health issues.
3. Further engagement with the **proposed independent institution and implementing line ministries** to strengthen financial monitoring is needed to implement the outlined action plan in the INFF and address financial gaps related to adaptation planning, implementation, monitoring and evaluation.

Key recommendations:

4. Coordination Framework development

- Develop adaptation specific Coordination Framework and data collection plans for indicators, policies and measures with supporting regulations, Memorandums of Understanding (MoUs) or data sharing agreements as needed.
- Establish the roles of the steering committee and technical committees in guiding regular policy planning, data collection, reporting, monitoring and evaluation.

5. Mainstream climate adaptation into sectoral, local and island level planning.

- Incorporation in Sectoral Planning: Perform a climate adaptation activity screen during the sectoral action plan development, for instance, in the agricultural sector, this could involve adjusting agricultural practices and crop selections based on projected climate impacts, ensuring that all agricultural development plans include strategies for climate resilience and emission reductions.
- Local and Island Level Development: At the local and island level, urban planning guidelines should be revised to incorporate climate risk assessments, ensuring that infrastructure projects, such as roads and buildings, are designed to withstand predicted climate conditions like increased flooding or higher temperatures.
- Monitoring and Evaluation Protocols: Establish standardized climate-related indicators across all sectors to measure the effectiveness of integrated strategies and ensure continuous improvement. For example, monitoring the reduction in carbon emissions in the transport sector or assessing the effectiveness of newly implemented coastal protection measures.
- Budgeting and Financing: Allocate specific budget lines for climate adaptation and mitigation measures within each sector's annual budget. This could include funding for renewable energy projects in the energy sector or for water conservation technologies in water resource management.
- The formation and regular engagement of the steering committee and technical committees should support this process and clearly communicate priorities from CCD based on ongoing tracking of adaptation targets.

6. Adaptation financing strategy

- Track and monitor the implementation of the INFF alongside independent institution mandated by the Climate Emergency Act, DCC and line ministries to strengthen financial monitoring.

Expertise

Expertise refers to the team of national experts who should be capable of regularly gathering and processing data in order to produce the agreed outputs in a timely manner. The team should have suitable back-up expertise and access to relevant training materials. There should also be effective recruitment, retention and succession procedures in place that motivate the long-term and active involvement of experts in the reporting process. The expertise related gaps and barriers identified in the key document review included:

- Limited capacity for planning CCA, including limited technical capacity to assess climate risk vulnerability or appraise adaptation measures⁷:
 - Adequate strategies and technical capacity for undertaking the NAP process are lacking for MECCT.
 - Elevated staff turnover in key ministries has eroded institutional knowledge over time — particularly regarding technical capacity to conduct data collection, analysis/interpretation and research.
- Specific capacity building needs identified in the BUR1 included:
 - Enhancing weather and climate monitoring in the Maldives and developing human resource capacity at Maldives Meteorological Service
 - Coastal Protection and Institutional strengthening for coastal monitoring
 - Assessment of vulnerabilities and risk reduction of health sector to vector borne diseases due to climate change impacts
 - Strengthening Health Sector Emergency Response to floods and sea swells.
 - Establishing GIS Integrated national level systems for disaster management information, communication and coordination.
 - Assessment of health risks due to air pollution
- Limited number and sometimes capacity of local experts to develop and implement projects which are acceptable to international climate finance sources, such as the GCF.⁸
- Severe shortage of skilled and professional staff within the climate change sector, and limited knowledge and technical know-how about climate risk management and climate change adaptation more generally across all sectors, particularly about specific adaptation options suitable for the Maldives.⁹
- There is a need to continue the national capacity building programs with assistance from the international community, develop and promote appropriate technologies to address climate change impacts with support from the international community and develop appropriate policy and strategies to address the impacts of climate change on vulnerable groups¹⁰.

The key findings from the stakeholder survey (see Appendix 2. Stakeholder Survey Results) on expertise are that:

⁷ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

⁸ Ministry of Environment, National Strategic Framework to Mobilize International Climate Finance to Address Climate Change in the Maldives 2020-2024, 2020: <https://www.environment.gov.mv/v2/wp-content/files/publications/20200303-pub-national-strategic-framework-to-mobilize-international-climate-finance-2020-2024.pdf>

⁹ Climate Change Directorate, Ministry of Environment. 2017. Summary report on National Adaptation Plan Process in the Maldives. Available at: https://unfccc.int/files/adaptation/application/pdf/maldives_summary_cca.pdf

¹⁰ Ministry of Environment. (2020). Updated Nationally Determined Contribution 2020. Republic of Maldives: Ministry of Environment. Available at <https://unfccc.int/sites/default/files/NDC/2022-06/Maldives%20Nationally%20Determined%20Contribution%202020.pdf>

1. Capacity building is required to develop national expertise in performing risk and vulnerability assessments and in assessing climate action vulnerability reduction impacts.

Key recommendations:

2. **Development of national expertise:**
 - Identify national expert teams responsible for carrying out risk and vulnerability assessments and assessing climate action vulnerability reduction impacts.
 - Carry out a training program on climate modelling, risk and vulnerability assessments.
 - Carry out a training program on assessing climate action vulnerability reduction impacts.

Data flows

Reliable, regular data flows are essential for a well-functioning institutional framework and the delivery of a national transparency framework. This includes defining the need for and uses of data, managing the delivery of the required datasets from a range of data providers on a regular basis and continuously improving data and reducing uncertainty. Identifying and engaging with stakeholders who hold, produce and could supply this data will be important. DSAs will be important for securing reliable data flows. The data flow related gaps and barriers identified in the key document review included:

- Limited access to, and sharing of, reliable climate change information and knowledge for decisionmakers and stakeholders¹¹:
 - Much of the climate information and sector-specific risk assessments are inconsistent, out-of-date or at ineffective scales.
 - Poor quality of available sectoral data identified as a barrier for developing the vulnerability assessment.
 - Lack of an institutionalized data collection and quality control system leads to poor data quality and inconsistent data formats.
- Data gaps and capacity constraints at local level pose severe challenges to sufficiently quantify adaptation needs at the local level as well as understand current investment in adaptation. Hence there is limited understanding of the scale and magnitude of these needs.¹²

The key findings on data flows from the stakeholder survey (Appendix 2. Stakeholder Survey Results) are that:

1. The lack of an institutionalized system for collecting and ensuring the quality of climate data (e.g. on risks, vulnerabilities, impacts and actions) is hindering decision-making and sector-specific risk assessments.
2. There are challenges with quantifying adaptation needs and current levels of investment in adaptation action at the local level to effectively understand the scale of requirements for adaptation action.

Key recommendations:

3. **Development of institutionalized system for collecting climate data**
 - Develop detailed list of SMART indicators (minimum one per adaptation target in the NDC)
 - Build database of climate adaptation targets, challenges, actions and indicators.

¹¹ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

¹² Ministry of Environment, National Strategic Framework to Mobilize International Climate Finance to Address Climate Change in the Maldives 2020-2044, 2020: <https://www.environment.gov.mv/v2/wp-content/files/publications/20200303-pub-national-strategic-framework-to-mobilize-international-climate-finance-2020-2024.pdf>

- Establish a coordination framework with a data collection plan, standardized data formats and protocols for collecting information on climate impacts and climate action outcomes.
4. **Carry out training programs** at the local level on data collection methodologies, use of technology for data gathering and analysis, and understanding of climate adaptation needs and strategies.

Systems and tools

Systems and tools are important for the smooth functioning of the transparency system. This encompasses managing the collection, analysis, QA/QC, summarizing and archiving of data and the preparation of briefings and reports. Institutional arrangements need to provide for the development and maintenance of workplans, engagement tools, databases, data collection and data analysis tools, indicators and reports. The systems and tools related gaps and barriers identified in the key document review included:

- Lack of data control system leads to poor data quality and inconsistent data formats¹³.
- No government wide performance monitoring system, no existing M&E framework or strategy for adaptation actions¹⁴.

The key findings on systems and tools from the stakeholder survey (Appendix 2. Stakeholder Survey Results) are:

1. There is a need to standardize data collection and reporting through the use of common tools and templates. These templates should be integrated with any existing systems such as the DesInventar database.
2. Implementation of any new tools or templates must be supported by experts who have received extensive training. These systems should also capture key lessons learned and track national improvement plans.

Key recommendations:

1. **Standardized data collection and reporting tools**
 - Develop data collection templates for climate impacts and climate adaptation action reporting.
 - Develop adaptation target tracking database system that includes mechanisms for data processing, archiving and storage.
2. **Develop training programme and improvement plan**
 - Deliver comprehensive training on data collection, processing, management and reporting tools.
 - Develop national improvement plan and tracking tools.

Stakeholder engagement

Collecting data and using it to prioritize and drive action requires stakeholder engagement. This includes data providers as well as data users and encompasses the public, local governments and communities, businesses and other decision makers. The greater the engagement the better (and more useful) the transparency system will be for evidence-based decision-making and the production of reports. Stakeholder engagement involves seeking out key individuals and organizations and offering benefits in exchange for their involvement (e.g. providing data, insights and resources) with the transparency system. Stakeholders engaged in national

¹³ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

¹⁴ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

polymaking and business decision-making will provide an important link to the wider impacts of climate action and the integration of climate action with national social, environmental, economic and sustainability goals. Stakeholder engagement related gaps and barriers identified in the key document review included:

- Lack of monitoring and reporting systems to communicate results of adaptation measures to decisionmakers and improve implementation by evaluating lessons learned¹⁵:
 - There is no government-wide performance monitoring system, nor an existing M&E framework or strategy for adaptation actions.
 - , The lessons learned from previous adaptation planning processes have not formally informed future iterations.

The key finding on stakeholder engagement and communication from the stakeholder survey (Appendix 2. Stakeholder Survey Results) is:

1. Data is made available to the public and decision makers on request but as discussed above, a lack of capacity at local level limits communication and coordination on adaptation needs and investment requirements.

Key recommendation:

1. **Develop communication plan** to coordinate regular, schedule communication on progress, challenges and needs for adaptation impact tracking.

¹⁵ Ministry of Environment, GCF Readiness Proposal for Advancing the National Adaptation Plan of the Maldives, 2022: <https://www.greenclimate.fund/sites/default/files/document/maldives-unep-mdv-rs-003.pdf>

Appendices

1. Key documents, inputs and research for the analysis of the MRV system

Document	Relevant content
GCF Readiness Proposal for Advancing the National Adaptation Plan (2022)	List of climate risks, vulnerabilities and challenges, background capacity building projects for adaptation monitoring, institutional framework, MRV capacity building gaps and barriers, sectoral adaptation initiatives.
National Strategic Framework to Mobilize International Climate Finance to Address Climate Change in the Maldives 2020- 2024 (2020)	Climate scenarios, vulnerability profile, challenges, climate adaptation policies and strategies, institutional framework, gaps and opportunities for accessing adaptation finance. Summary of Country projects/programs pipeline
Inception Workshop Report for the Consultancy Services to Review and Strengthen the Institutional Arrangements for Climate Change Reporting in the CBIT Maldives Project (2023)	Stock-take and design options for Institutional arrangement for climate change reporting, key recommendations made by the stakeholders during group discussions on institutional framework.
Maldives' Capacity Building Initiative for Transparency (CBIT) CEO Endorsement Document	Baseline and barriers transparency framework for adaptation monitoring. A list of baseline projects for adaptation MRV. List of stakeholders involved in MRV of adaptation actions. Summary of key MRV system gaps adapted from the BUR1.
Update of Nationally Determined Contribution of Maldives (2020)	NDC target, and key contributing strategies, plans and actions.
Maldives' First Biennial Update Report (2019)	Gap analysis of MRV system, recommendations for enhanced MRV system.
Maldives' Second National Communication (2016)	Summary of challenges (vulnerabilities and risks), list of sectoral adaptation measures, capacity building projects, institutional framework.
Climate Emergency Act (2021)	Designation of roles and responsibilities such as the Special Envoy for Climate Change and the Climate Change Directorate. National Action Plan on Climate Change and reporting. Description of the Environment and Climate Change Funds.
Maldives' Initial Biennial Transparency Report Project Implementation Plan (2023)	Description of ongoing initiatives. List of key stakeholders. Synergies with CBIT project.

<p>Maldives Climate Change Policy Framework (2015)</p>	<p>List of guiding legislation, national development plans, policies and strategies. Description of policy strategic framework.</p>
<p>Strategic Action Plan 2019 – 2023 (2018)</p>	<p>Central policy framework and planning document that guides the overall development direction of the Maldives. Sectoral targets and strategies with specific actions including adaptation actions such as preparing vulnerability assessments for key vulnerable sectors to identify possible adaptation strategies. Also contains targets, strategies and actions for adaptation, enhanced resilience and reduced disaster risk.</p>

2. Stakeholder Survey Results

A stakeholder survey was carried out for the purposes of this stocktaking report. However, the findings represent only one view from the National Disaster Management Authority. The findings on governance are presented below.

a.

Governance: The role and responsibilities of the Department of Climate Change in managing climate change adaptation data is clear - agree or disagree?

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Governance: Line ministries have the mandate to collect data on climate change adaptation impacts and actions from a wide range of stakeholders (governmental, NGOs, private sector, civil society etc.) - agree or disagree?

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Strongly Agree

Governance: The legal framework (climate change bill / by-law / MoUs / data sharing agreements) provides the mandate for DCC to monitor and report on climate change adaptation progress domestically and internationally - agree or disagree?

	1	2	3	4	5	
Strongly Disagree	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly Agree

Governance: The legal framework (climate change bill / by-law / MoUs / data sharing agreements) provides the mandate for line ministries to collect regular and reliable data on climate adaptation risks, vulnerabilities, impacts and actions - agree or disagree?

1 2 3 4 5

Strongly Disagree Strongly Agree

Governance: How could governance of adaptation tracking be improved? What actions should be prioritized?

Improving governance of adaptation tracking requires enhanced coordination mechanisms among line ministries to align efforts, given overlapping adaptation and disaster risk reduction measures. Standardized data collection mechanisms should be agreed upon, clarifying reporting requirements and facilitating data sharing among agencies. Prioritizing coordination and standardized data protocols ensures comprehensive tracking and evaluation of adaptation initiatives.

The findings on expertise from the stakeholder survey are presented below.

Expertise: What is the level of expertise for climate risk and vulnerability assessments and climate modelling in your country/organisation?

- National experts have a good understanding of climate risk and vulnerability assessments and climate modelling and can produce detailed country specific vulnerability assessments and models.
- National experts have a basic understanding of climate risk and vulnerability assessments and climate modelling but require external support to produce detailed assessments or to interpret regional climate models in a national context.
- National experts require significant support to conduct climate risk and vulnerability assessments or develop climate models.
- There are no national experts available for carrying out climate risk and vulnerability assessments or climate modelling.

Expertise: What is the level of expertise for managing climate change adaptation action data and assessing the impact of adaptation actions in reducing risk and vulnerability in your country/organisation?

- National experts have a good understanding of national adaptation action and can confidently assess the climate risk and vulnerability reduction impact of these actions.
- National experts can identify the biggest national adaptation actions without external support but require assistance to assess the climate risk and vulnerability reduction impact.
- National experts require significant support to identify and assess national adaptation actions.
- There are no national experts available for identifying and assessing national adaptation actions.

Expertise: Training needs self evaluation - please answer in relation to your own abilities.

	No expertise	Some expertise	A lot of expertise
Climate change risk and vulnerability assessments	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Adaptation project design and development	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Primary data collection	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Monitoring and evaluation of project impacts, outcomes and outputs	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Reporting adaptation action impacts for domestic and international audiences	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Expertise: Existing experts have enough resources (financial, human, technological) to effectively track and manage adaptation impact and action data - agree or disagree?

	1	2	3	4	5	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Strongly agree

The findings on data flows and data availability from the stakeholder survey are presented below.

Data flows and data availability: How would you describe the availability of data on climate risk and vulnerability in your country/organisation?

- There is lots of detailed, country specific hydrometeorological data and climate observations and models and it is consistently provided on a regular basis in the right format.
- There is some country specific hydrometeorological data and it is provided on a semi-regular basis or is provided when requested.
- Country specific hydrometeorological data is rare or is incomplete/ inaccurate when it is provided, regional climate data is generally used.
- No hydrometeorological data is available, regional or local climate models have not been incorporated into national processes.

Data flows and data availability: How would you describe the availability of data for adaptation actions in your country/organisation?

- There is lots of detailed, project-level data for most actions and it is consistently provided on a regular basis in the right format.
- There is some project-level data for the main actions and it is provided on a semi-regular basis or is provided when requested.
- Project-level data is rare or is incomplete/ inaccurate when it is provided for some actions.
- No project-level data is available, adaptation action data is not collected.

The findings on systems and tools from the stakeholder survey are presented below.

Systems and tools: Does your country/organisation have access to systems and tools for managing, quantifying and reporting climate risk and vulnerability?

- Yes, we have well developed systems and tools that simplify the process of collecting data on, assessing and reporting climate risk and vulnerability.
- We have access to some systems, tools and/or templates, but lack expertise in using them / still perform a lot of manual data collection, calculations or reporting.
- We have no systems or tools to support process of collecting data on, assessing and reporting climate risk and vulnerability that we use on a regular basis.

Systems and tools: Does your country/organisation have access to systems and tools for managing, quantifying and reporting adaptation actions?

- Yes, we have well developed systems and tools that simplify the process of collecting data on, tracking and reporting adaptation actions and their impacts.
- We have access to some systems, tools and/or templates (e.g. simple templates), but lack expertise in using them / still perform a lot of manual data collection, calculations or reporting.
- We have no systems or tools to support process of collecting data on, tracking and reporting adaptation actions and their impacts that we use on a regular basis.

Systems and tools: What systems or tools are currently in place for the MRV of climate risks, vulnerabilities and adaptation actions, and how effective are they?

for damage and loss data collection we use the DesInventar database
.....

The findings on stakeholder engagement and communication from the stakeholder survey are presented below.

Stakeholder engagement and communication: Do decision makers and the general public have access to information on climate risks, vulnerabilities, climate projections and national adaptation actions?

- Detailed data is publicly available in user friendly accessible form and provided to decision makers regularly
- Briefings and indicators are provided regularly publicly on request
- Decision makers and ministerial stakeholders are informed on request
- Nothing is shared with decision makers or the public

3. NDC targets

The table below outlines the climate adaptation sectoral targets, with suggested data requirements to track each target and a proposed lead stakeholder to collect the data. The information in this table should be reviewed, discussed with relevant stakeholders and refined based on available data and who the propriety data belongs to.

Sector	Target	Suggested data requirements for tracking	Lead stakeholder
Enhancing Agriculture and Food Security	Strengthen existing climate risk insurance mechanisms for building resilience against the loss of assets, livelihoods due to extreme events and enhancing relief efforts in the post disaster period taking into account national food and nutrition security.	Number and types of insurance policies issued for climate-related events. Value of claims paid out for losses due to extreme events. Surveys on accessibility and satisfaction among affected communities	Ministry of Agriculture and Animal Welfare
	Scale-up investments in building public food reserves and stocks and expanding regional distribution mechanisms across the country as an adaptive measure to increase accessibility and availability to reduce risks of food shortages during extreme events and market irregularities.	Inventory levels of food reserves before and after extreme events Investment amounts in food reserve infrastructure	Ministry of Agriculture and Animal Welfare
	Promote research and development focusing on climate smart technologies and practices to address challenges facing the sector due to climate variabilities, seasonal changes and extreme events.	Number of research projects initiated and completed. Funding allocated to climate-smart technology research. Adoption rate of developed technologies in the sector	Ministry of Agriculture and Animal Welfare
	Enhance capacity to implement climate smart and Integrated Pest Management (IPM) strategies and practices towards reducing pest damages and pest induced crop losses to increase resilience on crop yields and food security.	Percentage reduction in pest-induced crop losses Number of farmers trained and implementing IPM. Changes in crop yield resilience metrics	Ministry of Agriculture and Animal Welfare

	Facilitate and enhance access to finance via available national funds and other mechanisms including access to micro-credit, grants etc., to increase farmer's capacity to enhance food security and to increase investments on production systems.	Amount of financing accessed by farmers for adaptation measures. Number of farmers benefiting from micro-credit grants. Impact assessment on food security and investments in production systems.	Ministry of Agriculture and Animal Welfare
Infrastructure Resilience	Enhancing the resilience and climate proofing of critical infrastructure such as airports, ports, powerhouses and other utilities etc.	USD value of infrastructure made more resilient, Downtime or damages reported post-implementation.	Ministry of National Planning and Infrastructure
	Enhancing the National Building Code to incorporate climate resilience including coastal infrastructure.	Number of new or updated codes incorporating climate resilience. Training sessions held for builders and inspectors. Compliance rate with updated building codes.	Ministry of Construction and Infrastructure
	Increase resiliency through better spatial planning and increased connectivity between the islands.	Updated spatial planning documents that include resilience criteria. Number of connectivity projects initiated between islands for resilience. Metrics on improved accessibility and reduced vulnerability.	Ministry of Construction and Infrastructure
	Strengthen the legislative framework by establishment of a National Planning Act and Physical Planning Act. The legislation will facilitate integration of climate change into development planning while considering the economies of scale for public services, land use planning and population consolidation.	Legislation passed	Ministry of Construction and Infrastructure

	Strengthen efforts to conserve and restore mangrove ecosystems considering its numerous services and benefits to people and nature including livelihood of communities and its role as natural buffers or barriers for flood mitigation.	Hectares of mangrove ecosystems conserved or restored annually.	Ministry of Construction and Infrastructure
Public Health	Facilitate integration of climate change into the national health systems to ensure sustainable and climate resilient adaptation measures.	Health system adaptation plans developed and implemented	Ministry of Health
	Enhance the institutional and human capacity to implement the existing vector surveillance programs covering all islands to address the emergence and re-emergence of such diseases and in implementing adequate food safety measures.	Coverage of vector surveillance programs across islands. Number of reported cases of vector-borne diseases	Ministry of Health
	Strengthen the existing legal arrangements to address national vector control and implementation of food safety policies and standards.	Updates or new regulations passed for vector control and food safety	Ministry of Health / Maldives Food and Drug Authority
	Enhance the resilience of health infrastructure through increased climate proofing and incorporating green and energy efficiency measures.	USD value of public health infrastructure made more resilient	Ministry of Health / Ministry of Construction and Infrastructure
	Enhance public health advocacy and awareness activities to reduce vector borne and other non-communicable diseases including those driven by heat stress and poor air quality.	Number of public health campaigns conducted. Changes in public awareness and behavior regarding vector-borne diseases.	Ministry of Health
	Promote research to understand the nexus between climate change and health such as its impacts on vector borne diseases, mental health and air quality.	Research studies completed on climate impacts on health.	Ministry of Health

Enhancing water security	Implementation of cost-effective Integrated Water Resource Management (IWRM) systems to cater for the water needs of the entire population to reduce the risk of water shortages during dry seasons.	Number of IWRM systems developed and operational	National Disaster Management Authority
	Enhance decentralized water security and safety plans to be implemented in all islands, considering the nuanced differences of the available water resources and minimize the detrimental impacts on the water resources.	Water security plans developed and implemented	National Disaster Management Authority
	Integrate stormwater management into infrastructure development projects.	Infrastructure projects incorporating stormwater management. Reduced impact of flooding and waterlogging on communities. Investments in stormwater management infrastructure.	National Disaster Management Authority / Ministry of Construction and Infrastructure
	Improve the overall understanding of impacts from climate change on the natural water resources based on the latest science and implement policies, standards, regulations to pre-emptively protect the natural water resources from future impacts.	Policies, standards, and regulations developed for water resource protection.	National Disaster Management Authority
	Strengthen policies, programs and campaigns to increase the efficiency of water use to reduce human pressure on the existing water resources	Programs and campaigns launched to promote water use efficiency. Reduction in per capita water consumption	National Disaster Management Authority / National Bureau of Statistics
Coastal protection	Promote use of evidence-based decision making on coastal adaptation planning and management of coastal zones.	Coastal and tourism development policies updated to include climate risks.	Ministry of Climate Change, Environment and Energy

	Facilitate mobilization of financing to reduce exposure of communities to coastal hazards.	Financing mobilized for reducing exposure to coastal hazards.	Ministry of Finance / Ministry of Climate Change, Environment and Energy
	Mainstream climate change risks into coastal development policies.	Updated coastal development policies including climate risk assessments.	Ministry of Climate Change, Environment and Energy
	Continue to facilitate investments in coastal protection of inhabited islands, industrial islands and resorts.	Amount of investment in coastal protection measures.	Ministry of Finance / Ministry of Climate Change, Environment and Energy
Safeguarding Coral Reef Biodiversity	Facilitate research to address knowledge gaps and climate change impacts on coral reefs and marine ecosystems in order to promote sustainable and resilience-based management of coral reefs and marine ecosystems.	Number of research projects initiated on coral reefs and marine ecosystems	Academia / Ministry of Fisheries and Ocean Resources
	Strengthen existing coral reef monitoring program by engaging partners and stakeholders and developing tools (such as remote sensing, projections) for predicting, measuring and monitoring effects of climate variabilities and changes on reefs, marine ecosystems and vulnerable species.	Qualitative assessment by experts.	Ministry of Fisheries and Ocean Resources
	Strengthen national conservation programs considering different categories of protection, local and community management, ecosystem-based approach to contribute to the conservation of marine and coastal biodiversity and increase their resilience to climate change impacts while taking the livelihoods of the resource users into account.	Qualitative assessment by experts.	Ministry of Fisheries and Ocean Resources

	Enhance resilience of coral reefs and ecosystems by developing policy tools, incorporating into development plans, promoting best practices, increasing advocacy and through management actions.	Qualitative assessment by experts. Policy tools developed for coral reef resilience.	Ministry of Fisheries and Ocean Resources
	Implement measures to reduce sources of pollution on coral reefs and ecosystems especially marine life through appropriate policies, development of appropriate treatment facilities, management and safe disposal of solid waste taking into account the timely phasing-out of single use plastics.	Policies implemented for pollution reduction. Development of treatment facilities. Qualitative assessment of coral reef quality and pollution.	Ministry of Fisheries and Ocean Resources
Tourism	Mainstream climate change risks into tourism sector policies to enhance resiliency and sustainability of the sector.	Climate risk assessments included in tourism policies.	Ministry of Tourism
	Facilitate access to finance to increase the resilience and sustainable environmental management of the sector.	Amount of finance mobilized for resilience in tourism.	Ministry of Tourism
	Mainstream and promote clean energy and energy efficiency technologies to reduce the overall emissions.	Clean energy projects initiated in tourism. Clean energy capacity / reduction in total energy usage in sector.	Ministry of Tourism / Ministry of Climate Change, Environment and Energy
	Establish an insurance mechanism to reduce the impacts on the tourism sector through risk sharing and risk management	Insurance products developed for tourism risks.	Ministry of Tourism
Fisheries	Facilitate fisheries research and development initiatives taking into consideration resilience building of the sector towards managing the changing of fish stocks and its migration patterns, adapting to efficient technologies and investing in national capacity needs.	Research initiatives focused on fisheries resilience.	Ministry of Fisheries and Ocean Resources

	Enhance diversification of the fisheries sector including promotion of multi-functionality to respond to the emerging challenges and uncertainties due to climate variabilities and extreme events while protecting the health and sustainability of the marine resources and ecosystems.	Diversification strategies implemented. Qualitative assessment of diversification.	Ministry of Fisheries and Ocean Resources
	Promote sustainable fisheries by increasing efficiency of fishing vessels, promoting technologies that have potential for reducing GHGs and by developing and upgrading land-based fisheries infrastructures and facilities for a low carbon foot- print.	Efficiency measures implemented in fishing vessels. Fisheries GHG emissions	Ministry of Fisheries and Ocean Resources
	Facilitate access to finance to empower the industry towards meeting the vulnerability challenges and increase its contribution to sustainable blue growth considering vulnerable small-scale fishers and fishing communities and their productive role in maintaining food and nutrition security, livelihood and sustaining a successful blue economy.	Finance accessed by small-scale fishers and industry.	Ministry of Fisheries and Ocean Resources
	Strengthen insurance schemes to enhance resilience of small-scale fishers and fishing industry to cover against losses due to extreme events and anomalies, ensuring a minimum monthly income for lost fishing days especially for small-scale fishers.	Insurance schemes established for fishers. Monthly income support data for lost fishing days.	Ministry of Fisheries and Ocean Resources
Early Warning and Systematic Observation	Promote research to understand past and future climate trends and their associated impacts.	Research conducted on climate trends. Qualitative assessment by experts.	Maldives Meteorological Services / academia
	Continue strengthening and expansion of the meteorological network and early warning systems to cover the entire archipelago.	Qualitative assessment by experts.	Maldives Meteorological Services

	Improve the climate and weather forecasting tools for decision making.	Upgrades to forecasting tools. Qualitative assessment by experts.	Maldives Meteorological Services
	Strengthen the early warning systems and risk management tools.	Reduction in disaster response times and increased community preparedness.	Maldives Meteorological Services
Disaster risk reduction and management	Strengthen the existing databases on disaster risk management.	Updates and expansions of disaster risk management databases.	National Disaster Management Authority
	Strengthen collaboration with the island communities to understand and obtain information on local impacts.	Collaborative projects with island communities. Stakeholder feedback	National Disaster Management Authority / island authorities
	Enhance mechanisms for collection of information on losses and damages.	Mechanisms established for loss and damage information collection. Qualitative assessment by experts.	National Disaster Management Authority
	Facilitate the promotion and participation of the public and private sector in the disaster insurance scheme.	Disaster insurance scheme participation rates.	National Disaster Management Authority

4. Stakeholder mapping – current arrangements

Title	Responsibility	Necessary Capacities	Organization
UNFCCC focal point and GCF NDA	Overall responsibility for expected outputs such as NCs, BURs.	Administrative skills, government authority	MCCEE
Steering Committee	Provide overall planning, coordination, management and technical facilitators of inputs and outputs.	Technical and administrative expertise, government authority	No current independent steering committee, CCD currently fills this role.
MRV Coordinator	Management of the adaptation monitoring program and timelines	Technical and administrative expertise, government authority, capacity to coordinate and lead process	CCD
QA/QC Coordinator	Implementation of QA/QC Plan, oversees cross-cutting QA/QC	Quantitative skills, knowledge of the UNFCCC and GCF reporting requirements	CCD
Data users – Decision makers and high-level champions	Implementing change using the data from the MRV system	Political clout, policy development and implementation, persuasion	MCCEE, The People's Majlis, Special Envoy for Climate Change, National Bureau for Statistics
Climate risk and vulnerability modelling experts	Expertise in modelling national risk and vulnerability in relation to climate change impacts.	Quantitative modelling skills, good understanding of national context	Maldives Meteorological Services, National Disaster Management Authority, MCCEE, academia
Climate action tracking sector experts	Day-to-day climate action tracking for the sector. Good understanding of sectoral policies and measures	Quantitative skills, knowledge of the UNFCCC and GCF reporting requirements	CCD, MCCEE, Ministry of Fisheries and Ocean Resources, Ministry of Construction and Infrastructure, Ministry of Health, National Disaster Management Authority, Ministry of Tourism
Data providers	Reliable and regular provision of key datasets	Technical skills, legal authority to improve and enhance data collection	Ministry of Construction and Infrastructure, Local Governance Authorities, Ministry of Gender, Family and Social Services, Ministry of Tourism, Ministry of Transport and Civil Aviation, Ministry of Fisheries and Ocean Resources, the Maldives Food and Drug Authority, Ministry of Health,

			Maldives Meteorological Services, National Bureau of Statistics, National Disaster Management Authority.
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