

Climate Change Adaptation in the Maldives



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I. Situation Analysis

The Republic of Maldives is a low lying island nation with an average elevation of only 1.5 m in the Indian Ocean situated at southwest of Sri Lanka with a population of 341,000 (2014) and the population is distributed over approximately 197 inhabited islands. The country is a collection of about 1190 islands which are grouped into 26 atolls forming a chain of over 820 km in length and spread over an area of more than 90,000 square km. The nature-based tourism contributing to 28%, agriculture, biodiversity-based sectors contribute to 89 percent of the country's GDP, 98 percent of its exports, and 71 percent of employment with a Human Development Index (HDI) of 0.698 in 2013.

About 800,000 tourists visit the country annually (2008–2012) for its un-spoilt marine environment. The people of the Maldives have an identity that is a blend of the cultures of people who settled on the islands. It is believed the earliest inhabitants were from Sri Lanka and southern India. The Maldives people are ethnically related to those of the Indian subcontinent and are ethnically known as Dhivehi. There are about 70,000 foreign workers in the Maldives, as well as 33,000 illegal immigrants, who make up about one-third of the total population. (World Population Review). However, the total population of Gnaviyani is 14,380 and that for is 11,129 with the area of 5.4 sq.km. The adult (15+) unemployment Rate is at a high 46% (37% Male: 54% Female) (Trading Economics).

Agriculture and fisheries, that are both dependent on the country's unique natural resources, account for 3.4 percent of the GDP and 10.6 percent of employment. The coral reefs of the Maldives are the seventh largest in the world and consists of different species diversity and aesthetic appeal;

Species	No. of population
Fish	1900
Corals	187
Crustacean species	350

(Source: Project Appraisal Document; CLIMATE CHANGE ADAPTATION PROJECT (CCAP))

Maldives has a high improper solid management issues vulnerable to reef systems degrading the vegetation belt and threatening the health system. The organic waste can be composted to reduce the total amount of waste that needs to be managed. The Government of the Maldives (GoM) has signed United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter. The National Biodiversity Strategy and Action Plan (2002) emphasizes ecological sustainability, individual responsibility, equitable sharing of benefits, accountability of decision makers and public participation. The Third National Environmental Action Plan (2009–2013) stresses the importance of protecting and restoring coral, wetland and mangrove ecosystems and management of solid waste. The Strategic Action Plan (National Framework for Development 2009–2013) stresses conserving and sustainably utilizing biological diversity to ensure maximum ecosystem benefits (Climate Change Adaptation Project (CCAP)).

Maldives faces similar challenges in the context of climate change and development as other small island nations which challenges include, but are not limited to, the low lying nature of the islands, high population density, high levels of poverty, and a dispersed geography. Since Maldives is a small low lying island nation, its vulnerability to climate change impacts and associated extreme weather events and disasters are significantly greater due to limited ecological, socio-economic, and technological

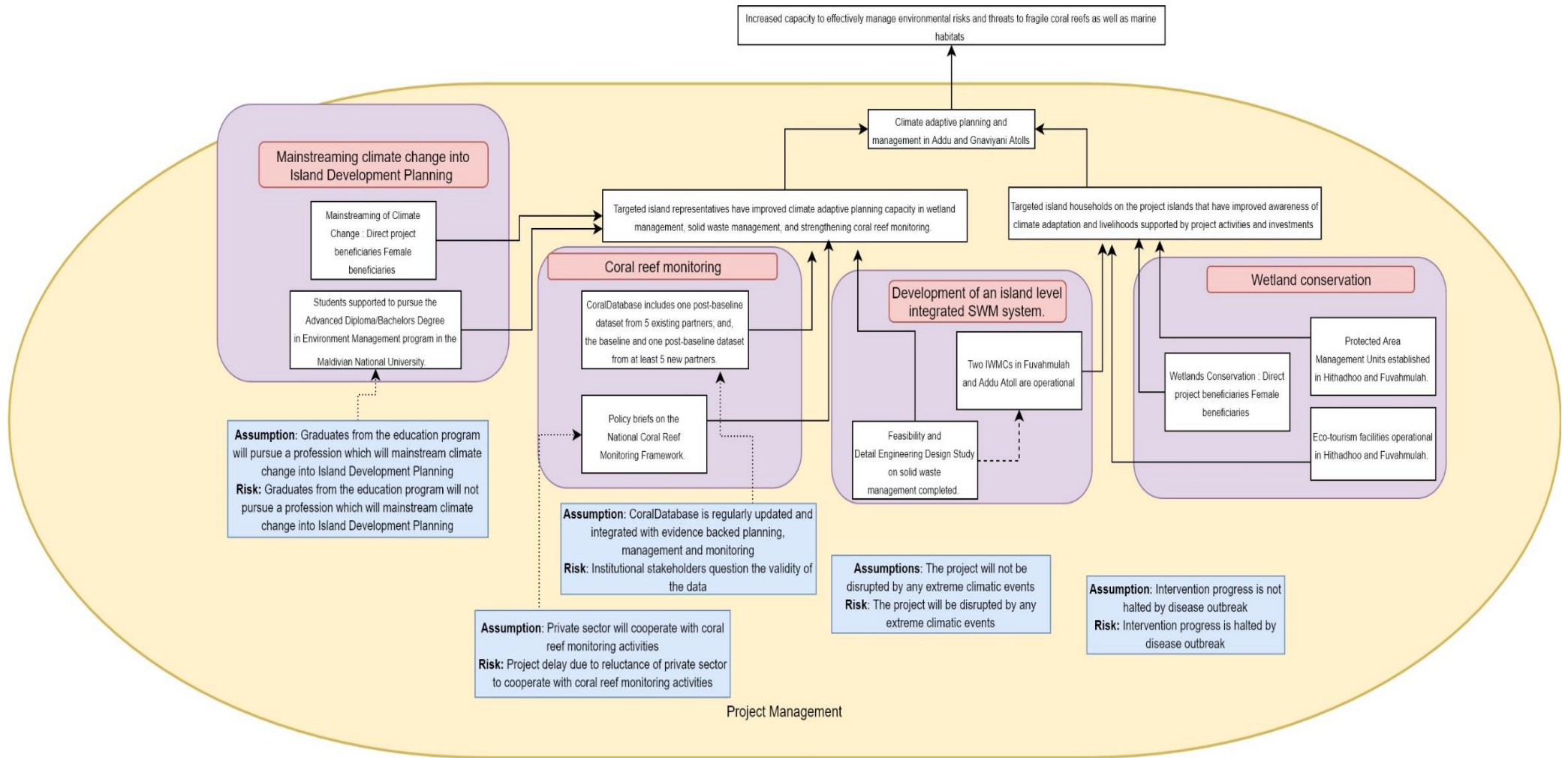
capacities. With 80 percent of its islands less than a meter above sea level and more than half the population living within 100 m of the coast, Maldives is highly vulnerable to any sea level rise.

Casual Linkages:

Activities	Outputs	Objectives	Impact
Component 1: Wetlands conservation			
<p>1.1 Implementation of a zoning system and wetlands protection system;</p> <p>1.2 Implementation of an environmental education and communication program;</p> <p>1.3 Implementation of an eco-tourism program and construction of eco-tourism facilities;</p> <p>1.4 Support for local eco-friendly livelihood activities</p> <p>1.5 Support for development of a national wetlands management strategy plan;</p> <p>1.6 Development of a Project exit strategy and future sustainability options for protected areas;</p> <p>1.7 Carrying out of a feasibility study on the designation of Addu City and Fuvahmulah Island as Important Bird and Biodiversity Areas.</p>	<p>To support the development of ecotourism and other sustainable activities that can contribute to the socio-economic development of the local community;</p> <p>To establish a model for management of the Protected Wetland Area.</p>	<p>To establish a protected wetland management system</p>	<p>To be identified during evaluation.</p>
Component 2: Coral reef monitoring			
<p>2.1 Support for newly inducted and existing participating resorts and participating dive centers, and the PAMU in Hithadhoo Island on field data collection and the use of the Coral Database;</p> <p>2.2 Enhancing the functionality and user-friendliness of the Coral Database platform;</p> <p>2.3 Development of policy notes and organization of exchange workshops to enable strategic mainstreaming of the</p>	<p>To involve private sector stakeholders (such as tourist resorts, dive centers), as well as the planned Protected Area Management Unit (PAMU) in Hithadhoo</p>	<p>To strengthen the Coral Reef Monitoring Framework for improved decision making and management of coral reefs and related ecosystems.</p>	

use of the National Coral Reef Monitoring Framework; and			
2.4 Strategic and technical advisory support for the PMU, MRC and MoT			
Component 3: Development of an island level integrated solid waste management system			
3.1 Carrying out of a strategic options study on solid waste management;	To institutional capacity building for Island Councils and Atoll Councils in solid waste management planning	To build the institutional capacity of Addu City and Gnaviyani Atoll Councils to plan an atoll/island level integrated solid waste management program to minimize the environmental risks to marine and terrestrial assets.	
3.2 Implementation of an atoll/island level composting program at island waste management centers (IWMCs) in Addu Atoll and Gnaviyani Atoll;			
3.3 Facilitation of training and capacity building including for contractors, and utility companies in solid waste management;			
3.4 Conducting communications campaigns to encourage community participation in island solid waste management			
Component 4: Mainstreaming climate change into island development planning			
4.1 facilitation of training on climate change to selected representatives and staff of Atoll Councils, Island Councils, Women's Development Committees and non-governmental organizations;	To support for the mainstreaming of climate change into island development planning	To build awareness and strengthen local government capacity to address climate change adaptation issues relevant to island development and support tertiary level education in environmental management including climate change adaptation and mitigation.	
4.2 provision of scholarships for environmental management academic studies.			
Component 5: Project Management			
Support management functions for implementing the project, including support for staff, monitoring, equipment, operating costs, etc.	To support management functions to implement the project	To establish a protected wetland management system	

II. Theory of Change





Theory of Change Statement

The program's theory of change articulates that targeted island representatives will improve climate adaptive planning capacity in wetland management, island development planning, solid waste management and strengthened coral reef monitoring. As a result, the targeted island households on the project islands will improve awareness of climate adaptation and livelihoods supported by project activities and investments that will eventually lead to increased capacity to effectively manage environmental risk and threats to fragile coral reefs as well as marine habitats.

Theory of Change Assumptions

The narrative of the theory of change will come true when the assumptions listed will hold true. Many of the assumptions are based on insights available on the social processes and structures of the country. The explanation of some of the key assumptions regarding the reception, engagement of the various stakeholders and beneficiaries of the project is explained below:

Graduates from the education program will pursue a profession which will mainstream climate change into Island Development Planning.

Explanation: The net migration rate in Maldives is -12.7 migrant(s)/1,000 population. This means that there is a constant flow of Maldives population migrating out of the country. Hence, we are assuming that the graduates will be staying as a professional in Maldives and contribute to Island Development Planning.

Coral Database is regularly updated and integrated with evidence backed planning management and monitoring.

Explanation: Institutional arrangements in Maldives promote transparency, the policy making processes are backed by evidence. Precedents demonstrate that management and monitoring at the government level is done in an

Private sector will cooperate with coral reef monitoring activities

Explanation: Private sector is also made up of citizens residing in the area who will directly/indirectly benefit from the awareness and community level engagement activities. These citizens would then be fully aware about the significance of the program activities and cooperate fully with the coral reef monitoring activities.

Contribution to Achievement of Program Outcomes

The theory of change has helped to establish the causal linkages between different aspects of the project and has thus brought a clarity in understanding the holistic framework of the project, thereby increasing the likelihood of better monitoring and evaluation for better implementation of the project activities and achievement of the program outcomes. Furthermore, the Theory of change has helped to articulate the assumptions and will help in monitoring of the



risks. The Theory of Change could have definitely made a difference to the program outcome but it would not suffice to ensure the complete success of the program. Some of the outputs, objectives set forth by the program are over-ambitious and might not be achieved within the specified timeframe.

III. Performance Indicators

Indicator	Indicator Definition (unit of measurement)	Indicator Usefulness	Data Collection Methods/Sources	Frequency & Schedule	Responsibility	Impediments to the Collection Process
Indicator 1						
Two Island Waste Management Centres in Fuvahmulah and Addu Atoll are operational	The Island Waste Management Centers are operational	This indicator will directly portray the adaptability of the residents of the two cities. It will show the technical capacity of the local people.	1.1 Project Progress Reports and Final Report 1.2 Field Monitoring 1.3 Beneficiary Feedback Collection through Survey	1.1 Quarterly (from the beginning of the construction period) 1.2 Once after the completion of the project 1.3 Once after the completion of the project	Project Management Unit Evaluation Team Evaluation Team	Delay in procurement activities altering the overall timeline of the proposed project
Indicator 2						
Eco-tourism facilities operational in Hithadhoo and Fuvahmulah.	The eco-tourism facilities are supporting infrastructures for the tourist resorts.	This indicator will show the adaptability of tourism industry for climate change	2.1 Project Progress Report and Final Report	2.1 Quarterly	Project Management Unit	Delay in procurement activities altering the overall timeline of the proposed project
Indicator 3						
Policy briefs on the National Coral Reef Monitoring Framework.	These are the policy documents that are provided to various governmental	This indicator will show the sustainability of the monitoring	3.1 Project Progress Report and Final Report	3.1 Quarterly	Project Management Unit	Delay or lack of adoption of suggested policy brief by the

	institutions such as MEE and Tourism Department for implementing National Coral Reef Monitoring	framework due to implementation from national level institutions				concerned government agency
Indicator 4						
Protected Area Management Units established in Hithadhoo and Fuvahmulah.	The Protected Area Management Units are institutions that will work to further enhance wetland conservation	This indicator will determine the sustainability of wetland conservation in the two cities.	4.1 Project Progress Report and Final Report	4.1 Quarterly	Project Management Unit	
Indicator 5						
Mainstreaming of Climate change: Female beneficiaries	The number female trainees of the LGA supported program for integrating climate considerations into the local planning process.	This indicator will portray the equality in the engagement of gender in the various interventions and show the various shortcomings	5.1 Project Progress Report and Final Report	5.1 Quarterly	Project Management Unit	Collection of data not disaggregated by sex

V. Evaluation Questions

Categories	Evaluation Questions	Importance of the Questions	Sources of Data	Data Collection Method
Relevance	To what extent are the operation's objectives and goals consistent and contributing to the achievement of Maldives' Intended Nationally Determined Contribution (INDC), donor requirements?	The project aims to help in adapting and mitigating to the adverse effects of climate change. In this context, it is essential to evaluate whether the program objectives are coherent with the various international treaties and agreements, criteria set forth by the donor, etc.	Project Appraisal Document	Literature review
	Are the activities and outputs of the programme consistent with the intended impacts and effects and will they contribute to the achievement of the overall goal?			
Efficiency	Were the resources available on time and in the right quantities and quality and were the activities implemented on schedule and within budget accordingly?	It is essential that the project does not waste resources and budget and becomes a net benefit.	Project Reports and Final Project Report	Literature Review
	Were the financial procurement documents, progress details disclosed in a transparent manner?			
Effectiveness	Were the operation's objectives achieved and will they lead to the intended outcomes?	It is crucial that the outputs and objectives of the project are fulfilled in time. Through these questions we will be able to identify delays and lags in the project.	Project Reports and Final Project Report	Literature review
	Major factors influencing the achievement or non-achievement of the objectives?			
Sustainability	Are the benefits likely to be maintained for an extended period after assistance ends?	The questions will help evaluate the level of ownership among the stakeholders and reflect on the possibility of extension of the benefits from the project such that it will eventually aid in achievement of the overall goal.	Project Completion Report Beneficiary Feedback Stakeholder Feedback	Literature review Focus Group Discussion (FGD) In-Depth Interview
	What were the major factors which influenced the achievement or non-achievement of sustainability of the programme or project?			

Impact	How many people have been benefitted by the program (direct or indirect) and what are the real difference has the activity made to the beneficiaries?	Evaluation of the impact created by the program will help measure the achievement of overall goal of the program. The question will help in indentifying shortcomings and best practices such that they will help in the design of similar projects in the future.	Beneficiary Feedback Project Completion Report Stakeholder Feedback Project Management Unit Feedback	FGD Literature Review IDI Key Informant Interview (KII)
	Are there any unplanned or unintended changes to the achievement of the program outcomes?			
Learning Questions	To what level have the indigenous knowledge been reflected in planning and implementation?	The communities (in most cases, indigenous communities) whose livelihood are dependent to the local habitat develop their own mitigation and adaptation methods to adverse and unpredicted changes. Understanding the level of engagement and reflection of this knowledge would help identify either the best practices or the areas for future improvement.	Project Development and Planning Document Project Completion Reports Beneficiary Feedback	Literature review Literature review FGD
	Are there any synergetic effects of multi-stakeholder engagement?	The project engages complex dynamics of multi-stakeholder engagement. Understanding, recording and quantifying the synergetic effect of the engagement would help develop models for future interventions.	Project Completion Report Stakeholder Feedback	Literature review IDI
	What were the resistance towards the project from various stakeholders?	The project implementation at times challenges the way of working of the various stakeholders and private sectors along with the local communities. Information on the resistance faced during implementation will help account for potential challenges to sustainability and accomodate ways to mitigate them.	Project Progress Reports Beneficiary Feedback	Literature review FGD

VI. Ethical Consideration

Full disclosure: The beneficiaries of the project will be thoroughly explained about the purpose of the evaluation, their rights and how the information they provided will be used. They will be ensured that the findings and limitations are accessible to the persons affected by the evaluation.

Informed Consent: To ensure the agreement and the willingness of an evaluation; what will be done, how, by whom, when, verbal or written approval will be taken before getting their insights about the project. Obligations should be agreed to in writing, so that the parties are obligated to adhere to all conditions of the agreement.

Potential possible harm to participants and how it will be mitigate: Following the standards and regulations regarding informed consent for participants, consent will be documented, determining the appropriate method for collecting and documenting informed consent, whether in writing or verbally, given the level of literacy in local communities.

How authenticity will be ensured: The best of knowledge availability and accuracy of the evaluation will be ensured during data collection or analysis. Any questionable practices will be corrected even if additional data must be collected.

Gender and culture consideration: Respect for people begins with a solid understanding of contextual elements that may influence the M&E activity and respect relevant differences in stakeholders, such as gender, socio-economic status, age, religion, and ethnicity.

References

"Climate Change Adaptation Project (CCAP)." Project Appraisal Document. 2015.

"Trading Economics." 2019.

"World Population Review." 2019.

Insights from our Reflection



Tactical Measures To Engage The Private Sector

- The Private sector are under no obligation to voluntarily cooperate with our project activities
- It has been difficult to engage the private sector
- Seek tactical measures like going through the help of local government authority or aligning our activities with the private sector's working policies is very important

Convincing Different Government Line Agencies Takes A Lot Of Time And Effort

- Government regulations are subject to change and it is very difficult to work under them.
- Different line agencies of the government may need convincing to support and cooperate with the project.
- Hence, it is best that the project are developed in line with the long term national policies such as the Nationally Determined Contributions in case of working in the sector of the Climate Change.

Be Prepared For Delays In Procurement Process And To Face The Rigid Compliances Of The Donor's Requirement

- The procurement process can be delayed if the activities planned and the resources needed are not feasible for the local context.
- Arrange for a well thought project design customized to the project's socio-economic setting.
- Also, the rigidity of the donor's requirement can be a constraint to mould the project's development objective
- Take proper steps beforehand to guarantee a trade-off to be in line with the donor organization's mission and vision and the local context.