RP1718

Ministry of Environment and Energy

Republic of Maldives

Climate Change Trust Fund

Social Assessment and Management Framework (Resettlement Policy Framework)

Climate Change Adaptation Project

November 26, 2014

Executive Summary

Background: The Government of Maldives (GoM) received support from the World Bank-managed Climate Change Trust Fund (CCTF) to deal with adaptation and mitigation of climate change. A multi-donor Maldives CCTF was established in December 2009 with the aim to build a climate resilient economy and society in Maldives through adaptation to climate change as well as mitigation for a low carbon development path. The total resources pledged by the European Union and the Government of Australia were US$10.3 million. Three projects that have been implemented under the CCTF so far include: (i) Wetlands Conservation and Coral Reef Monitoring for Adaptation to Climate Change project (WCCM) (P128278); (ii) Clean Energy for Climate Mitigation project (CECM) (P128268); and (iii) AASWM pilot project (P130163). All the three projects are planned to end on November 30, 2014. The EU expressed its intention to support the second phase with a supplemental contribution of EUR 3.85 million. With support from CCTF second phase (CCTF-II), GoM proposes a project named Climate Change Adaptation (CCA) Project in the southernmost atolls (Addu/Seenu and Gnaiviyani) to undertake an integrate approach to respond to climate risks while ensuring environmental sustainability in a select geographical area. It is envisaged that this comprehensive approach of combining natural resources management and SWM may create synergy and establish a self-sustained system. The CCA Project supports initiatives to strengthen knowledge and leadership in the government, build adaptive capacity through pilot programmes, develop low-carbon options and improve policy and institutional capacities in both public and private sectors related to climate change adaptation and mitigation with a focus on flood management, wetland management, biodiversity conservation and integrated solid waste management.

Purpose of the Resettlement Policy Framework: Projects and Programs financed through World Bank need to comply with World Bank Operational Policies. Therefore, components eligible for funding under this project will be required to satisfy the World Bank‘s safeguard policies, in addition to conformity with social legislation and policies of the GoM. The overall negative social impacts of the project is minimal, as the project is focused on ensuring climate resilience and proper management of wetland and coral reefs ecosystems, as well as setting up integrated solid waste management system in selected sites in Maldives. The objectives of the framework are to:

- Ensure that components comply with the relevant social safeguard requirements of the GoM and the World Bank.
- Provide a filter for investments, for ensuring that the selected investments are well-prepared and amongst the most effective in minimizing risks and enhancing positive impacts/benefits
- Avoid delays and extra costs which may subsequently arise due to unanticipated environmental problems;
- Make transparent the decision-making process in design and implementation of components
- Ensure that the investments are implemented in a sustainable manner by maximizing socio-economic benefits to local communities within the scope of the project.

Project Objective and Brief Description: The project development objective of the CCA project is to demonstrate integrated multi-sectoral approaches to climate adaptive planning and management in Addu and Gnaviyani Atolls.

The CCA Project components with intermediate outcomes have the common theme of intent to contribute to delivering climate resilient island development. All components build on activities initiated in CCTF and use the lessons learned from CCTF-I. All are interdependent and all also require evidence-based and target-driven planning processes to deliver enhanced resilience to climate change.
The CCA project will have five components:

Component 1: Wetlands conservation: The purpose of this component is to establish a Protected Wetland Management system based on the implementation of the Community Based Wetland Management Plans (CBWMPs) for Hithadhoo and Fuvahmulah so as to provide ecosystem-linked benefits to the community.

Component 2: Coral reef monitoring: The purpose of this component is to develop a stronger evidence base on the status of coral reefs so as to support improved decision making and management of the coral reefs and related ecosystems by involving private sector stakeholders (such as Tourist Resorts, Dive Centres, etc., as well as the planned Protected Area Management Unit in Hithadhoo) in coral reef monitoring.

Component 3: Development of an island level integrated SWM system: The purpose of this component is to build the institutional capacity of Addu City and Gnaviyani/Fuvahmulah atolls and island councils to plan an atoll/island level integrated solid waste management (SWM) program to minimize the environmental risks to the country‘s marine and terrestrial assets while reducing GHG emissions.

Component 4: Mainstreaming climate change into island development planning: The purpose of this component is the mainstreaming of climate change into an island development-planning through training of council staff and elected members in partnership with the Local Government Authority (LGA).

Component 5: Project Management: The MEE has the overall responsibility for project implementation and for ensuring that the project objective is met. It will execute the project through the EPA, the MRC of MoFA, and the LGA in close coordination with the atoll/island councils. The CCA project will support the MEE in project management through this component.

Project Location: The project activities will be primarily carried out tin Fuvahmulah, Hithadhoo and few selected sites in Addu City. Gn. Fuvahmulah (73°24'30"E and 0°16'45"S) and S. Hithadhoo (73°05'37"E and 0°37'06"S) are large islands with significant human populations, wetland area, rampant problem of flooding, and where wetlands play an important role in natural drainage and freshwater security. Hithadhoo and Fuvahmulah with a population of 14,323 and 11,073 (in 2009) are next only to Male. Both the islands have a richer diversity of plants compared to the northern islands. Hithadhoo‘s Eidhigali Kilhi, which is part of Addu City has the largest diversity of migratory species of birds in the Maldives. Although these islands are considered large by Maldivian standards (Fuvahmulah with 424 hectares and Hithadhoo with 525 hectares), the land available for infrastructure and developmental activities is limited – and consequently, there is a constant pressure for land expansion. Both islands face frequent rainfall-induced flooding attributed to both drainage patterns and to human activities (reclamation of wetlands, agriculture practices, and poor consideration for drainage in infrastructure planning). The wetlands in Hithadhoo and Fuvahmulah are among the largest in the country and are significant for biodiversity conservation, freshwater security and flood control.

Unlike other atolls of Maldives, Addu city possesses a natural anchorage within the city basin, as the atoll is land-locked with large islands surrounding the atoll. With a registered population of more than 31,000 it is one of the only two atolls of the Maldives belonging to the southern hemisphere and has a land area of 15,000 hectares. The coastal marine ecosystems of the atoll include reef systems, in the north and south of the atoll, as well as in the periphery of the intra atoll basin. In addition strands of mangroves are found around brackish water systems. Also swampy areas inland, with freshwater is common in the atoll. There are seven coral reefs in the Atoll with an area of 72 square kilometers. The atoll consists of coral islands with coralline soil on top of a thin lens of fresh water. The islands in the Atoll are large in comparison to other atolls, but are fewer in number. Most of the Islands have an average of 1-2 meters above mean sea level. The Atoll has the largest brackish fresh water pond in the Maldives and is a mangrove area of high significance, located in the northern tip of the island of Hithadhoo (*Eidhigali Kilhi)*. The area supports resident and migratory bird populations and plant species of national significance. The sustainable human occupation of the islands can be attributed to these important coastal marine ecosystems and their high biodiversity value.

Activities under the component 1 - wetland protection and conservation such as zoning, fencing, improvements in waste management, and management of access and use of the wetlands will result in

reduced environmental degradation. However, it is possible that due to activities under this component, negative impacts such as temporary disturbance to water bird breeding sites and issues related to shifting of solid waste to another location could also take place. In addition alternative livelihoods support provided under this Component could have negative social impacts if not adequately screened or if there is lack of transparency in selection of beneficiaries.

Activities under coral reef monitoring (component 2) are not expected to lead to negative social impacts. The monitoring process that will be put in place will help in ensuring the wellbeing of the coral reefs through identifying degradation of coral reefs both due to anthropogenic such as breaking of corals, removal of organisms, waste accumulation, etc. and natural causes such as climate variability and take necessary actions in time. Potential issues that may require due diligence include possible damage to corals, their habitat and to the associated organisms from activities/events related to field monitoring such as boat anchoring, oil leakages from boats, transect marking and physical monitoring. Safety issues may stem from malfunctioning of equipment, inadequate equipment, diving related accidents, etc.

The component 3 – which will include a strategic options study on integrated solid waste management that will assist Island Councils and communities of Fuvahmulah and Addu islands to identify the scope of the current issues related to managing solid waste and identify potential options of addressing the issues which will be environmentally beneficial in the future by minimizing the environmental risks to the marine and terrestrial assets while reducing GHG emissions. Support to the physical and operational improvement to existing island waste management centers will ensure the establishment of practices such as waste segregation, recycling and composting that will reduce the amount and types of waste to be disposed. While physical improvement expected which will likely to be only setting up of compost pads will not have significant environmental impacts. However, improper handling of waste during operations may lead to health hazards.

Components 4 and 5 will not have any negative impacts since they are administrative and/or involve training and capacity building.

This project is a second phase of the Climate Change Trust Fund (CCTF) for Maldives. The project is classified under Safeguards Category "B" primarily to reflect the risks involved in physical activities under the first 3 components. There is an existing Environment and Social Due Diligence (ESDD) report prepared for the Wetland Conservation and Coral Reef Monitoring (WCCM) of CCTF phase 1 and Environment and Social Impact Assessments (ESIAs) for ecotourism activities of Hithadhoo and drainage management activities of Fuvamulah. In addition, an ESDD has been prepared for the Ari Atoll Solid Waste Management (AASWM) project also under the CCTF phase I. Based on the findings of the above reports, the project triggers OP 4.01 – Environmental Assessment to ensure any environmental impact associated with project activities are identified in time and mitigated, OP 4.04 – Natural Habitats as project area consists of protected areas and environmentally sensitive areas and OP 4.11 as undocumented and researched ruins of cultural and historical significance could be found in some of these sites.

Social issues and impacts: The assessments carried out during CCTF phase I and recent reviews for the ESAMF prepared by the project shows that the social safeguard issues are not significant. Nonetheless, OP 4.12 has been triggered as there could be future chance find of involuntary land taking in the wetland conservation subproject component 1 impacting community adversely as a small percentage of community relies on the wetlands for agriculture and livelihood. A Resettlement Policy Framework has been prepared as part of ESAMF in line with the Bank‘s OP 4.12. However, there could be other social issues such as conflict during beneficiary selection for livelihood options; or in finalization of livelihood options; gender representation in community-led management body; etc.

Activities under coral reef monitoring (component 2) are not expected to lead to any negative social impacts.

The component 3 – which will include a strategic options study on integrated solid waste management that will assist Island Councils and communities of Fuvahmulah and Addu islands to identify the scope of the current issues related to managing solid waste and identify potential options of addressing the issues which will be environmentally beneficial to the community. However, improper handling of waste during operations may lead to health hazards for the community.

The social due diligence (SDDs) and social impact assessments (SIAs) carried out by the client during phase I shows that the social safeguard issues are not- significant. Nonetheless, Operation Policy(OP) 4.12 has been triggered for a –chance find as there could be future chance find of involuntary land taking in the wetland conservation component impacting community adversely as a small percentage of community relies on the wetlands for agriculture and livelihood. There could be other social issues such as conflict during beneficiary selection for livelihood options; or in finalization of livelihood options; gender representation in community-led management body; etc. No social safeguards issue is anticipated in coral reef monitoring subproject. Since there is no indigenous community in Maldives, the OP 4.10 has not been triggered.

The framework part of this report consolidates the previous versions of SDDs and information generated through SIAs and includes protocols for screening project activities, guidelines for mitigation of social risks, and guidance on development of Social Management Plans (ESMPs) and Resettlement Action Plans (RAPs) based on the phase I experience, as well as to reflect the new areas of interventions on SWM.

Institutional arrangements: The Project Management Unit (PMU) in the Ministry of Environment and Energy will have an Environment and Social (E&S) Coordinator who will report to the Project Manager and will work closely with the wetlands technical coordinator; solid waste management coordinator, the coral reef monitoring coordinator and the Communications Officer. The E&S Coordinator will be responsible for overall implementation of ESAMF and also liaison with other agencies at the island level to implement safeguards mitigation measures, monitoring and evaluation of implementation and report on compliance and status of performance indicators. In addition, project level coordinators will be appointed in the project islands. The E&S coordinator will orient the island level coordinators in environmental and social issues with assistance from the Communications Officer. The coordinators at island level will also be first level of contact for any grievance / feedback for the community.

In addition to the MEE, there are several ministries, departments and agencies that will be involved in the implementation of the CCTF-II project. These include the Environment Protection Agency (EPA), Ministry of Fisheries and Agriculture, Marine Research Center (MRC), Ministry of Tourism, Arts and Culture (MOTAC), tourist resorts and the Fuvahmulah Atoll Council, Hithadhoo Island Council. And Addu City Council Communities, Protected Area Community Advisory Boards in Addu and Fuvahmulah and communities. Communities and NGOs are still not well organized on the islands but have shown considerable interest to participate in the project.

Consultation and Disclosure: Public consultations on the project (including environmental and social impacts) were held with affected stakeholders at local and national levels during the preparation of ESAMF. All safeguards related documents have been disclosed on September 11, 2014 in-country athrough print media and other means and will be disclosed in World Bank‘s InfoShop. The client has published the ESAMF in the website requesting public comments. Once the project commences implementation, the project team is expected to have regular consultations with local stakeholders on issues related to environmental and social issues.

1 INTRODUCTION

1.1 Background

The Government of Maldives (GoM) received support from the World Bank-managed Climate Change Trust Fund (CCTF) to deal with adaptation and mitigation of climate change. A multi-donor Maldives CCTF was established in December 2009 with the aim to build a climate resilient economy and society in Maldives through adaptation to climate change as well as mitigation for a low carbon development path. The total resources pledged by the European Union and the Government of Australia were US$10.3 million. Three projects that have been implemented under the CCTF so far include: (i) Wetlands Conservation and Coral Reef Monitoring for Adaptation to Climate Change project (WCCM) (P128278); (ii) Clean Energy for Climate Mitigation project (CECM) (P128268); and (iii) AASWM pilot project (P130163). All the three projects are planned to end on November 30, 2014. The EU expressed its intention to support the second phase with a supplemental contribution of EUR 3.85 million. With support from CCTF second phase (CCTF-II), GoM proposes a project named Climate Change Adaptation (CCA) Project in the southernmost atolls (Addu/Seenu and Gnaiviyani) to undertake an integrate approach to respond to climate risks while ensuring environmental sustainability in a select geographical area. It is envisaged that this comprehensive approach of combining natural resources management and SWM may create synergy and establish a self-sustained system. The mid-term evaluation of the CCTF-I projects undertaken by the EU in February 2014 also recommended that a CCTF expansion should be built on lessons learnt from the pilot activities to improve approaches and implementation practices according to the realities on the ground. Hence the CCTF II bases its design on the lessons learnt from phase I. The CCA supports initiatives to strengthen knowledge and leadership in the government, build adaptive capacity through pilot programmes, develop low-carbon options and improve policy and institutional capacities in both public and private sectors related to climate change adaptation and mitigation with a focus on flood management, wetland management, biodiversity conservation and integrated solid waste management.

The PDO of the CCA project is to demonstrate integrated multi-sectoral approaches to climate adaptive planning and management in Addu and Gnaviyani Atolls. The project implementation period is three years (January 2015 to December 2017). Due to the project‘s short duration, the indicators will capture intermediate outcomes.

The key intermediate outcome indicators for the project will be:

- Establishment of a Protected Area management system for Hithadhoo and Fuvahmulah that provides ecosystem-linked benefits to the community.
- Strengthened evidence base on coral reef status for improved management and decision making.
- Improved capacity of GoM and Atoll/Island Councils of Hithadhoo and Fuvahmulah on island level SWM.
- Increased awareness on mainstreaming climate change adaptation in island development planning in Atoll/Island Councils.

The project hasbeen designed in consultation with GOM, civil society and other stakeholders, as well as technical assessments undertaken and lessons learnt from the first phase of the CCTF projects as well as the IDA-funded Maldives Environment Management Project (MEMP).

The proposed CCA project has been designed based on consultations held with GoM, Atoll and Island Councils, other international development agencies operating in the Maldives, the private sector, the CCTF beneficiary communities and the civil society. Based on the established consensus, a tripartite discussion was held in Male‘ on August 5, 2013 between the Ministry of Environment and Energy, the European Union and the World Bank. The discussion was recorded in a document titled *Revised Results for CCTF II Funding*, which constitutes the core element of the ‗Description of the Programme‘, and subsequently turned into a European Commission Decision adopted on December 3, 2013, allocating an amount of EUR 3.85 million.

There are five main components in the CCA Project that together contribute to delivering climate resilient island development. All the components build on activities initiated and lessons learned from the CCTF-I

interventions and are also complementary to each other. The wetlands conservation component builds on the community based planning achieved in CCTF-I and focuses on protected area management. The SWM component contributes directly to reducing the problems of waste dumping in wetlands and spillage into marine areas. The coral reef monitoring component focuses on strengthening a monitoring system to support evidence-based management. The mainstreaming component focuses on building capacity of Atoll/Island Councils in climate resilient planning drawing upon lessons from the other 3 components as well as from other projects in the Maldives. The fifth component is on project management.

The five components are described in the next chapter. All components will deliver climate resilience and adaptation in respect of development and the livelihoods that depend on this resilient and adaptive development.

1.2 Purpose of the Social Assessment and Management Framework

Projects and Programs financed through World Bank need to comply with World Bank Operational Policies. Therefore, components eligible for funding under this project will be required to satisfy the World Bank's safeguard policies, in addition to conformity with social legislation and policies of the GoM. The overall negative social impacts of the project is minimal, as the project is focused on ensuring climate resilience and management of wetland and coral reefs ecosystems, as well as setting up integrated solid waste management system in selected sites in Maldives.

The objectives of the framework are to:

- Ensure that components comply with the relevant social safeguard requirements of the GoM and the World Bank.
- Provide a filter for investments, for ensuring that the selected investments are well-prepared and amongst the most effective in minimizing risks and enhancing positive impacts/benefits
- Avoid delays and extra costs which may subsequently arise due to unanticipated problems;
- Make transparent the decision-making process in design and implementation of components
- Ensure that the investments are implemented in a sustainable manner by maximizing socio-economic benefits to local communities within the scope of the project.

1.3 Approach to SAMF

The Social Assessment and Management Framework (ESAMF) study has been designed primarily to ensure that the two subject components will comply with the relevant social safeguard requirements of the Government of Maldives (GoM) and the World Bank.

The SAMF for CCA project was developed based on the Social Due Diligence (SDD) reports prepared for the CCTF I projects – WCCM and AASWM. In addition, site-specific Social Impact Assessments (SIAs) were undertaken in Hithadhoo and Fuvahmulah that provide the baseline condition of the some of the sites selected for the proposed project. These latter studies provide initial guidance to the project team in terms of hydrological interactions, constraints and opportunities on the islands of Fuvahmulah and Hithadhoo. Whilst the ESAMF studies were wide-ranging, the time allowed for further studies and reporting was tightly constrained. In particular, it should be recognised that this SAMF will provide the overall framework for the project. Based on the World Bank and GoM policy/legislative requirements further details assessments in the forms of SIAs, and social management plans (SMPs), etc. will be undertaken during the project implementation period.

Building further on the consultations that were undertaken during the preparation of SIAs and developing mechanism for coral reef monitoring during CCTF I, the MEE will carry out consultations of this SAMF. The continuous consultations carried out during workshops and training events with atoll and island councils and community specifically for WCCM and AASWM projects under CCTF 1 have already contributed to the overall design of the project.

2 BRIEF DESCRIPTION OF THE COMPONENTS

2.1 Introduction

Maldivian economy depends largely on natural resources. A study conducted in 2009 indicated that 71 percent of national employment (78,500 jobs), 49 percent of public revenue (Maldivian rufia (MVR) 2.5 billion), 62 percent of foreign exchange (US$435 million), 98 percent of exports (MVR 1.7 billion) and 89 percent of gross domestic product (GDP; MVR 135 billion) in the Maldives are dependent on its biodiversity. Maldives is largely a service-oriented economy, with nature-based tourism serving as the engine for economic growth, directly contributing 28 percent to GDP, and indirectly driving other sectors such as communication and construction. About 800,000 tourists – more than twice the country‘s population – visit the country annually (2008–2012). Snorkeling and diving are the most popular tourist activities (with 59 percent and 53 percent of tourists rating their experience as excellent), both relying on an un-spoilt marine environment. Fisheries and agriculture, both natural resource dependent sectors, contribute about 4 percent to the GDP, and are critical in terms of their contribution to household livelihood security. Rich natural resources are undoubtedly the most important national asset supporting all these three sectors.

The Fifth Assessment Report by Intergovernmental Panel on Climate Change (IPCC) describes a wide range of current and future climate-related drivers of risk for small islands during the 21st century, which include sea-level rise, tropical and extra-tropical cyclones, increasing air and sea surface temperatures, and changing rainfall patterns. The report acknowledges sea-level rise as one of the most widely recognized climate change threats to small islands where the majority of human communities and infrastructure is located in coastal zones with limited on-island relocation opportunities especially on atolls. It is obvious that the projected sea level increase of 0.35–0.7 meters by the year 2100 will threaten the existence of the Maldives. Downscaled global climate change scenarios for the Maldives estimate that there will be an increase in temperature and rainfall over the entire country by 2100. Extreme events of rainfall are expected to increase over the entire country, which could lead to high levels of flooding. This will in turn affect farming, infrastructure and could lead to disease outbreaks. Similar to the increase in air temperature, an increase in the sea surface temperature is predicted that could have an enormous impact on the marine environment.

Coral Reefs – Climate Change Impacts and Contribution to Adaptation: The Fifth Assessment Report of the IPCC describes coral reefs as an important resource in small tropical islands, and acknowledges that the well-being of many island communities is linked to their ongoing function and productivity. It emphasizes that the incidence and implications of temperature-related coral bleaching in small islands is well documented, and combined with the effects of increasing ocean acidification, these stressors could threaten the function and persistence of island coral reef ecosystems. It is known that the costs of protection-works to combat sea-level rise would be disproportionately high in relation to GDP for small-island nations, and the Maldives is ranked among the ten nations with the highest protection costs in relation to GDP. In addition to such costs for adaptation, considering the dependence of the Maldives economy on tourism, the potential impact of coral bleaching cannot be underestimated.

Wetlands – Climate Change Impacts and Contribution to Adaptation: Rainfall-induced flooding is perceived by island communities as the most devastating impact of climate change. It is a major hazard especially in the southern atolls where rainfall is comparatively higher and these larger islands contain extensive wetland or low-lying areas. Expansion of settlements into the low-lying areas has meant an increase in the impact of occasional severe flooding in these islands. Of the 1,190 Maldivian islands only 41 islands have wetlands. These in-land ecosystems help in climate change adaptation through their role in flood and soil erosion control, groundwater recharge, freshwater storage and livelihood support. They lessen the effect of flooding during high rainfall events and storm surges and also provide water security during low rainfall periods. The common method for flood mitigation is to construct floodways or channels to the sea. Climate change induced rainwater flooding will require additional flood mitigation capacity. However, maintenance of flood mitigation measures has been a challenge as the floodways can regularly accumulate debris including sand, rubble and domestic waste (for example, dumping of waste into the floodways has also been identified as a challenge in Hithadhoo and Fuvahmulah). Clean-up has been generally restricted due to lack of municipal cleaning services and this has resulted in blockage of the channels and flooding on the island. In addition,

climate change induced sea-level rise will reduce opportunities for drainage and increase inundation, and also seriously compromise freshwater wetland viability. It is likely that some freshwater wetlands will only be sustained using tidal barrages and gates.

Solid Waste – Implications for Climate Change Mitigation and Adaptation: Poor solid waste management (SWM) in Maldives is a major problem threatening coral reefs and wetlands and consequently the important tourism and fisheries sectors. There is no municipal collection system for household waste in many islands. Waste is usually burned in open fires or shipped to the primary landfill/incineration island, Thilafushi, but too often ends up in the sea. An estimated 312,075 metric tons (mt) per year of solid waste is discarded in the Maldives. About 51 percent of this is from urban areas, 28 percent from island communities and 21 percent from tourism. Island community solid waste has a high organic fraction (70 percent) with recyclables accounting for only 3 percent of the discards and the balance classified as residuals. Waste disposal practices vary among islands depending on access to disposal facilities, local custom and government/council intervention. Waste may be dumped within the island (31 percent of islands), burnt (28 percent), disposed at the beach or sea (13 percent), buried (8 percent), and sent to Thilafushi or other islands (4 percent). Ninety percent of the islands have their waste disposal sites within 100 meters of the coastline and on the ocean-ward side of the island.

A total of 134 Island Waste Management Centers (IWMCs) have been constructed, covering about 66 percent of islands and a few more are under development (for example, SWM systems in Ari Atoll under the CCTF-I Ari Atoll Solid Waste Management (AASWM) Project). Unfortunately a program for gathering waste from the centers for shipment to a suitable location in the Maldives does not fully exist yet (the IWMCs under the AASWM are associated with the sanitary landfill and a waste-to-energy facility in Raa Atoll Vandoo). As these centers have reached their capacity due to the lack of an organized program for management of waste at the IWMCs and waste transfer from the IWMCs, island residents have stopped delivery of waste to these centers. Instead, waste is left on the beach or discarded in low-lying areas, such as the wetlands. The waste on the beach is visually unsightly both for island residents and people on other nearby islands especially tourist resorts. Aside from the aesthetics on the island where the waste is generated, waste thrown on beaches below the high tide line can float into the sea where it may sink or get onto reefs or wash ashore on tourist resort beaches.

Solid waste disposal has implications for both climate change mitigation and adaptation. Waste disposal, including open burning of wastes, accounts for 15 percent of the greenhouse gas (GHG) emissions in the country and improvement of SWM is essential to achieve the country‘s target of achieving carbon neutrality by 2020. Inadequate disposal affects the health of the vulnerable reefs, which otherwise function as coastal defense systems in the warmer climate. Solid waste disposal into the coastal vegetation is a major contributor to the degradation of the vegetation belt in some islands – Dh. Kudahuvadhoo, Ga. Kolamaafushi, Sh. Funadhoo and N. Velidhoo. Poor solid waste disposal also increases the risk of vector-borne diseases, by creating vector-breeding sites.

The management of solid waste is especially challenging in the Maldives, even more so than other small island states due to the small island sizes, small population on these islands and visible lack of economic activities that make any investment in waste management challenging. With a population spread across numerous islands there is little scope for harnessing economies of scale due to large costs of transportation and low volumes, making the costs of service delivery high. This poses a substantial and visible risk to the country‘s reputation as an unspoiled tropical ―paradise‖. The scarce surface area of any island in the archipelago puts a premium on the value of land and limits on the landfill method traditionally used in many parts of the world. The amount of waste generated far exceeds the capacity of available landfills which are basically uncontained open dumps. Current arrangements for solid waste management on most inhabited islands are inadequate.

Policy Framework: The policy context in the Maldives is very supportive of wetlands conservation, coral reefs protection and SWM from the standpoint of biodiversity conservation, climate change adaptation and mitigation and environmental sustainability. The GoM is a signatory to the United Nations Framework Convention for Climate Change (UNFCCC) and United Nations Convention on Biological Diversity

(UNCBD). Work is underway for Maldives to become a signatory to the Convention on wetlands (Ramsar Convention). The National Biodiversity Strategy and Action Plan (NBSAP) and the Third National Environmental Action Plan (NEAP) stress the importance of protecting and restoring coral, wetland and mangrove ecosystems and management of solid waste. The Strategic Action Plan (SAP; also called National Framework for Development 2009–2013) stresses conserving and sustainably utilizing biological diversity to ensure maximum ecosystem benefits. The National Adaptation Programme of Action 2006 (NAPA) emphasizes wetland conservation through priority actions such as flood control, recognizes the importance of coral, and also includes enhancing capacity for SWM as a priority action to prevent pollution of the marine environment. The Strategic National Action Plan for Disaster Risk Reduction and Climate Change Adaptation (SNAP) (2010-2020) includes a wide range of activities such as early warning systems, knowledge management database, improved land planning, training on coral reef growing, and community based Disaster Reduction Management (DRM). The National SWM Policy 2008 and SWM Regulation 2010 both set the policy framework for SWM including details of the functions of IWMCs. The Fourth Tourism Master Plan (2013–2017) clearly acknowledges and plans to address the vulnerability of the country against the potential impacts of climate change. Overall, national policies (NBSAP, NAPA, NEAP, National SWM Policy and SAP) that provide the basis for climate change adaptation in the country are comprehensive and favorable to wetland and coral reef conservation as well as management of solid waste; however, the implementation of adaptation measures remains a key concern.

Engagement by the World Bank in Reef Monitoring and Wetlands Management: The Wetland Conservation and Coral reef Monitoring (WCCM), administered by the Bank, supports both wetland conservation and coral reef monitoring under funding from CCTF. The Bank‘s Maldives Environment Management Project (MEMP) has built the capacity for coral reef conservation and also assisted coral health monitoring by having professional scientists engaged in technical assistance. The WCCM project supported the development of Community-Based Wetland Management Plans (CBWMPs) and demonstrative implementation of drainage management and rainwater harvesting systems to reduce flood incidence and enhance freshwater security. The project also piloted capacity building in tourist resorts for coral reef monitoring and provided technical support through professional scientists to develop coral reef conservation protocols and a technology platform (referred to as ‗the Coral Reef Monitoring Framework‘) that will enable easy access to data and decision support tools.

Engagement by the World Bank in SWM: The Bank‘s MEMP has a component which aims to establish a regional SWM program in the North Province. Due to land scarcity in the country, the process of site selection was slow and difficult, and the project closing date was recently extended by one year to June 30, 2015. MEMP is providing island waste management centers, transshipment services, a sanitary landfill and a waste-to-energy facility in Raa Vandhoo. The AASWM Project (P130163), which is administered by the Bank under funds from CCTF, is establishing an island level integrated SWM system in five pilot islands in Ari Atoll (Dhangethi, Dhigurah, Fenfushi, Thoddoo and Ukulhas). The International Finance Corporation (IFC) supported the SWM of the capital area through a public-private partnership, which invited private participation in the management of Thilafushi Island; a landfill island located around 7 km to the west of Male‘.

2.2 Project Components

The CCA Project components with intermediate outcomes have the common theme of intent to contribute to delivering climate resilient island development. All components build on activities initiated in CCTF and use the lessons learned from CCTF-I. All are interdependent and all also require evidence-based and target-driven planning processes to deliver enhanced resilience to climate change.

The CCA project will have five components:

Component 1: Wetlands conservation: The purpose of this component is to establish a Protected Area management system based on the implementation of the Community Based Wetland Management Plans (CBWMPs) for Hithadhoo and Fuvahmulah so as to provide ecosystem-linked benefits to the community. The CBWMPs developed with support from the WCCM project under the CCTF-I were:

- The CBWMP for Hithadhoo including an ecotourism package was approved by the Addu City Council and by the general public (18 September 2013). The CBWMP has a five year timeframe, of which the initial implementation was carried out under the CCTF-I.
- The CBWMP of Fuvahmulah including ecotourism design concepts and drainage design concepts and plans were approved by the general public (4 November 2013), Community Advisory Board (5 November 2013) and the Fuvahmulah Atoll Council (6 November 2013). The CBWMP has a five year timeframe, of which the initial implementation was carried out under the CCTF-I[1].

The CCA project will focus on the next three years of the CBWMP implementation period.

Objective: The main objectives of this component are:

- the protection of the wetlands and biodiversity in the Protected Areas of Eydhigali Kilhi and Koattey (declared in December 2004) of Hithadhoo, and, Bandaara Kilhi and Dhandimagu Kilhi in Fuvahmulah (declared in June 2012);
- the development of ecotourism and other sustainable activities that can contribute to the socio-economic development of the local community; and,
- establishing a model for management of the Protected Area and allied activities.

Activities: The key activities as identified in the CBWMPs include:

- Implementation of the new zonation system and protection regime in Hithadhoo and Fuvahmulah including core areas, conservation areas, buffer zones and eco-friendly agricultural zones. This activity involves implementing a system for regulating access to and patrolling the protected area (entrance fees, permissions for tourism operators, etc.); prevent dumping of waste; prevent extraction of sand, gravel and pebbles; control use of pesticides in farmlands; regulation of fishing; etc.
- Establish the management structure of the protected areas in Hithadhoo and Fuvahmulah including:
    - Recruitment of staff for the Protected Areas on each island including a Protected Area Manager, a Protected Area Conservation Officer and 3 Rangers.
    - Training of Protected Area staff in Protected Area Management focusing on wetland conservation and eco-tourism.
    - Formal constitution and support to functioning of a Community Advisory Board.
    - Provision of office facilities, vehicles and field equipment.
- Implementation of an environmental education and communication program for schools and the general public.
- Implementation of an eco-tourism programme including creation of eco-friendly visitor facilities:
    - Development and implementation of a code of conduct for ecotourists.
    - Training and certification of eco-tourism guides.
    - Visitor centre in Hithadhoo; boardwalk, bird observatory, interpretive signage, tourist information centre, etc. in Fuvahmulah.
- Establishment of a Protected Area Fund: This includes:
    - Establishment of the Protected Area Fund with matching grants from the GoM and the CCTF-II.
    - Establishment of a Protected Area Fund Board to administer the Fund to meet the O&M costs and to support Livelihoods Grants beyond the project period.
- Support to local eco-friendly livelihood activities: This includes:
    - Training programs on eco-friendly livelihoods for community members including youth, women, farmers, etc. Examples include eco-friendly artisanal crafts, organic farming, guiding, etc.

[1] The activities initiated in CCTF-I in Fuvahmulah were: development of an ecotourism concept, establishment of an informal Community Advisory Board, design of environmental education and communication campaign, design of training on ecotourism, training of wetland volunteers, design of code of best practices for tourism, bird and vegetation inventories and training in composting.

    - Supporting eco-friendly livelihood enhancement activities through Livelihoods Grants from the Protected Area Fund.
- Development of a project exit strategy and future sustainability options for the Protected Areas to be presented to the Climate Change Advisory Council.
- Support for a feasibility study and facilitation for designating Addu and Fuvahmulah as biosphere reserves.

Outputs: The key outputs are:

- Management structure created for the protected area including full staff capacity and Community Advisory Board supported with office and field facilities/equipment.
- Environmental education programs for schools and general public implemented.
- Visitor facilities including boardwalk, bird observatory, interpretive signage, nature trails, tourist information centre, etc., created.
- Trained and certified eco-tourism guides.
- Training programs on eco-friendly livelihoods for community members organized.
- Livelihood enhancement activities supported through a Livelihoods Grant.
- Protected Area Fund and Protected Area Fund Board established and operational.
- Project exit strategy and future sustainability options for the Protected Areas presented to the Climate Change Advisory Council.
- Feasibility study report on designating Addu and Fuvahmulah as ‗biosphere reserves'.

Outcomes: The key outcomes are:

- Strengthened capacity of Atoll Councils, the Community Advisory Boards and the planned Protected Area Management for managing the protected areas.
- Enhanced environmental awareness among the general public and tourists.
- Increase in tourist satisfaction with the eco-tourism product as well as enhanced livelihood benefits to the local community from farming, artisanal crafts, etc.
- Clear way forward on future sustainability of the Protected Areas in Hithadhoo and Fuvahmulah.
- Recommendations on designating Addu and Fuvahmulah as ‗biosphere reserves'.

Component 2: Coral reef monitoring: The purpose of this component is to provide a stronger evidence base on the status of coral reefs so as to deliver improved management and decision making by supporting the involvement of Tourist Resorts, Dive Centres and the planned Protected Area Management in coral reef monitoring and management. Under the WCCM project of CCTF-I, a set of standardized monitoring protocols and a web enabled database platform (‗CoralDatabase') were developed, the staff of 5 Tourist Resorts were trained in using the protocols and the database, and one baseline dataset on coral reef monitoring by these resorts could be achieved. The CCA project will focus on strengthening and scaling up the coral reef monitoring programme initiated during CCTF-I.

Objectives: The main objectives of this component are:

- Capacity building of 10 Tourist Resorts and Dive Centres by providing the tools and training to monitor the condition of the coral reefs and the goods and services that they receive from the coral reefs.
- Scale-up the use of the ‗Coral Reef Monitoring Framework' including the ‗CoralDatabase' to 10 Tourist Resorts and Dive Centres.
- Pilot the use of the ‗Coral Reef Monitoring Framework' including the ‗CoralDatabase' by the planned Protected Area Management in Hithadhoo.

Activities: The key activities to be financed under this component are:

- On-going support for newly inducted and existing tourist resorts, dive centres and the planned Protected Area Management on field data collection and use of the ‗CoralDatabase'. This includes the following:

    - Training workshops for newly inducted tourist resorts, dive centres and selected community institutions/groups, as well as refresher training workshops for the 5 existing tourist resort partners on field data collection and use of the ‗CoralDatabase'.
    - Training videos on use of the protocols in the ‗Coral Reef Monitoring Framework' including the ‗CoralDatabase' that will be available on-line and can be accessed from the CoralDatabase website.
    - On-site bi-monthly facilitation visits by consultants to provide support to resorts for initiating and sustaining the use of the ‗Coral Reef Monitoring Framework' including the ‗CoralDatabase'.
- Continued support to the ‗CoralDatabase' platform developed under CCTF-I to enhance its functionality and user-friendliness for data entry & storage, analysis & decision-making. The enhancements include:
    - Data Entry & Storage: Enhancing compilation speed; facility for producing customized variants of the monitoring protocols; tips, field labels, keyword descriptions and look-up lists for markers indexed to monitoring sites; system for sharing common site/marker IDs between users, providing sub-folders for organisation/infrastructure, etc.
    - Data Analysis & Decision-making: Enhanced search facility (based on time, location, protocol, keyword and/or values); pre-set data searches and presentation for key data (e.g. current bleaching).
    - Transfer to national server: In order to increase administrative efficiency and reduce the cost burden of hosting the ‗CoralDatabase' platform, it will be transferred to a national server of the GoM located in the Maldives by the end of the CCA project period.
- Support for strategic mainstreaming of the use of the National Coral Reef Monitoring Programme: (a) into the EIA regulation by making the use of selected protocols (water quality, substrate cover, fish abundance etc.) a requirement to be met by project proponents as part of the EIA; (b) into resort lease conditions; (c) other relevant opportunities.

Outputs: The key outputs are:

- A minimum of one dataset from each of at least 10 participating Tourist Resorts and Dive Centres. regular and periodic field data collection by tourist resorts, dive centres and the planned Protected Area Management covering the at least 4 mutually identified protocols from the following: water quality, catch and effort, ecosystem assets, impact and management, life forms (bottom transect, extended swim, marine turtle), island profile, coral settlement, reasons for visiting, resort diet, wildlife on land, etc.;
- Policy notes and workshops involving key Government ministries and institutions, private resorts, atoll and island councils.
- Strategy for sustaining and scaling-up partnership-based coral reef monitoring.

Outcomes: The key outcomes are:

- Strengthened capacity of tourist resorts, dive centres and the planned Protected Area Management Unit for coral reef monitoring.
- Greater awareness in tourist resorts, dive centres and Protected Area Management Unit on the goods and services they receive from the coral reefs.
- Improved information and knowledge base on status of coral reefs in the Maldives.
- Clear roadmap of the Government of Maldives for sustaining and scaling-up partnership-based coral reef monitoring.

Component 3: Development of an island level integrated SWM system: The purpose of this component is to build the institutional capacity of Addu City and Gnaviyani/Fuvahmulah atolls and island councils to plan an island level integrated solid waste management (SWM) program to minimize the environmental risks to the country's marine and terrestrial assets while reducing GHG emissions. Under the Ari Atoll Solid Waste Management Pilot Project of CCTF-I, capacity building on SWM was undertaken in 5 islands of the Ari Atoll and a model for island based integrated SWM could be established on the Ukulhas island. The CCA project

will draw upon the experience of CCTF-I and focus on strengthening the SWM capacity in Addu City and Gnaviyani/Fuvahmulah.

Objectives: The main objectives of this component are:

- To support a Strategic Options Study that will contribute to the development of an integrated island(s) SWM system.
- To demonstrate a system for collection, segregation and composting as part of developing an integrated island(s) SWM system.

Activities: The key activities to be financed under this component are:

- Strategic Options Study on SWM: This includes:
    - Best Practicable Environment Option (BPEO): The BPEO is the primary component of the study. It will identify potentially suitable waste management options for Addu City and Ganviyani/Fuvahmulah through BPEO assessment. It will also identify potentially suitable site for location of the Regional Waste Management Facility (RWMF). Under the BPEO process, a preferred waste management system option will be selected against multi-dimensional criteria ranked by stakeholders. The objective of the investigation is to identify significant environmental, logistical, social, technical and physical aspects of the short listed sites and assess its potential for selection as RWMF. The study will provide process details on the identification and evaluation of options and site and their synthesis into the preferred system configuration. It will also undertake a detailed scoping investigation of shortlisted sites with land use compatible for siting a RWMF and recommend where the proposed RWMF may be located. The study will finally produce potentially suitable integrated waste management system options and financial estimations (including sensitivity analysis) to inform the preferred PBEO selection and best value processes.
    - Assessment of Collection and Transportation Systems: This component will include an assessment of current collection and transportation system and based on the shortlisted integrated waste management system options, propose a collection and transportation system with preliminary financial estimations.
    - User Pays Framework: This framework is for island/atoll waste management that allows for maximum cost recovery while taking into account affordability and ensuring the desired level of services, based on a policy that everything that can be managed on the islands should be managed on the islands. The User Pays Framework Model consists of the final report, a set of economic models for fee setting and a guideline for using the models.
    - Institutional arrangement to operationalize the integrated solid waste management system: This component of the study will assess the existing and proposed institutional arrangements for example in MEMP and ASWMP, as well as existing institutional arrangements in Addu City and Ganviyani/Fuvahmulah to manage solid waste and recommend a cost effective and practical arrangement to operationalize the proposed integrated solid waste management system.
    - Proposal for the next phase activities including technical and financial feasibility study for the preferred regional waste management system option at the final selected site location; environmental and social impact assessment for the preferred regional waste management system option at the final selected site location; development of detailed engineering designs; rehabilitation plan for existing disposal site at Addu City.
- Implementation of an island level recycling and composting program at the Island Waste Management Centres (IWMCs): This includes:
    - Community awareness program on SWM: This activity will create community awareness on the public health and environment implications of poor SWM in the islands and solicit community participation for source segregation of household level solid waste. To ensure a simple segregation process at the household level, the waste will be separated into 3 categories: (i) organic or degradable waste (ii) recyclable waste or waste material that has a resale market (iii) residual waste.
    - Effective system of waste collection and transport to the IWMCs.

- Composting program: Island community solid waste has a high organic fraction (70%) with recyclables accounting for only 3% of the discards and the balance classified as residuals[i]. The biodegradable organic matter can be managed through low cost, low technology composting in the existing IWMCs. The IWMCs (Hulhumeedhoo in Addu City, Hithadhoo in Addu City, and Fuvahmulah) currently do not have provision for composting. A concrete pad for simple windrow composting will be constructed in each of these 3 IWMCs. There will be no leachate treatment facility at the IWMCs. All leachate will be collected and re-circulated into the compost piles as moisture. The compost generated will be utilized in the eco-friendly organic farms and resorts in the islands.
- Recycling and Residual Storage: About 20% of the solid waste generated in the islands is recyclable. The recyclables having a market for resale will be segregated and selled. The residual, relatively inert, waste of about 10% will be baled and stored in the IWMC in a safe and environmentally responsible manner until it is transferred for off-island disposal.

- Capacity building of Island Councils and Utility Company: This includes:
  - Training of Island Council representatives and Utility Company staff on SWM including waste collection, segregation, user fee management, composting, recycling, residual waste storage, etc.
  - Exposure visits of Island Council representatives, Utility Company staff and selected community representatives to the SWM system in Ukulhas Island in Ari Atoll of the Maldives and to the Weligama Urban Council Compost Plant in Sri Lanka.
  - Recruitment of one SWM Associate each for Addu Atoll and Gnaviyani Atoll.
- Communication campaign: This includes a campaign to raise community awareness in order to encourage community participation in island SWM. The components of the campaign will include IEC materials, school education programmes, recognition awards, etc.

Outputs: The key outputs are:

- Report of Strategic Options Study on SWM in Addu City and Ganviyani/Fuvahmulah including Best Practicable Environment Option, Assessment of Collection and Transportation Systems, User Pays Framework, Institutional Arrangements, and, Proposal for next phase activities.
- Infrastructure for windrow composting in 3 IWMCs of Addu City and Ganviyani/Fuvahmulah.
- Collection, segregation and composting of solid waste at the 3 IWMCs of Addu City and Ganviyani/Fuvahmulah.
- Training program and exposure visit for Island Council representatives, Utility Company staff and selected community representatives on SWM.
- Communication campaign on SWM.

Outcomes: The key outcomes are:

- Strengthened capacity of Island Councils, Utility Company and communities for implementing integrated island solid waste management system.
- Composting of organic solid waste generated in Addu City and Ganviyani/Fuvahmulah.

Component 4: Mainstreaming climate change into island development planning: In the context of the Decentralization Act of 2010, the WCCM project in CCTF-I has supported the mainstreaming of climate change into an island development-planning module through a partnership with the Local Government Authority (LGA). This has included the development of curricula and the delivery of cascade-mode training to council staff through LGA master trainers. The CCA project aims to scale up this effort across 50% of the Atoll and Island Councils in the Maldives.

Objectives: The main objectives of this component are:

- To build awareness and strengthen local government capacity to address climate change adaptation issues relevant to island development.

- To support tertiary level education in environmental management including climate change adaptation and mitigation.

Activities: The key activities to be financed under this component are:

- Scaling up of the of the training on climate change to Atoll and Island Council staff and elected representatives through the LGA: This includes:
    - Orientation course on climate change: The 4 hour module on climate change will be rolled out to cover at least 50% of the Atoll and Island Council staff and elected representatives through partnership with the LGA. The training will be provided through a cascade approach through trained master trainers and trainers.
    - Certificate Course on Climate Change: The 100 hour module on climate change will be rolled out as a Certificate Course for Atoll and Island Council staff and elected representatives. It will be offered through the LGA in partnership with the Maldivian National University (?). The training will be provided through trainers from the LGA and the Maldivian National University.
- Support to an ongoing Bachelor in Environment Management program run by the Maldivian National University: This includes:
    - Developing course materials on Climate Change: The 100 hour module on climate change will be adapted for use in the Bachelor in Environment Management program of the Maldivian National University. It will be offered through the Maldivian National University as an elective as part of the Bachelor in Environment Management program. The course will be delivered through trainers from the LGA and the Maldivian National University.
    - Sponsorships of students: 5 students will be supported through scholarships and living allowance to pursue the Bachelor in Environment Management program in the Maldivian National University.

Outputs: The key outputs are:

- At least 50% of the Atoll and Island Council representatives trained on mainstreaming climate change into island development planning through the LGA.
- Course materials developed for integration of climate change adaptation and mitigation into the ongoing Bachelor in Environment Management program in the Maldivian National University.
- At least 5 students are supported to pursue the Bachelor in Environment Management program in the Maldivian National University.

Outcomes: The key outcomes are:

- Strengthened capacity of local government representatives to plan and implement climate resilient island development plans.
- Graduates in the area of environmental management and climate change developed through the Maldivian National University.

Component 5: Project Management: The MEE has the overall responsibility for project implementation and for ensuring that the project objective is met. It will execute the project through the EPA, the MRC of MoFA, and the LGA in close coordination with the atoll/island councils. The CCA project will support the MEE in project management through this component.

Objective: The objective of this component is to support the various management functions for implementing the project including human resources, monitoring, equipment, operating costs, etc. This component will finance incremental costs to the existing Project Management Unit (PMU) established for MEMP and CCTF-I.

Activities: The key activities to be financed under this component include:

- Support for PMU staff: PMU staff in the MEE that serviced the first phase of CCTF will continue to undertake day-to-day management. This includes a Project Manager, a Wetlands Coordinator, Solid Waste Management Coordinator, Coral Reef Monitoring Coordinator, Safeguards Coordinator,

Finance Officer and a Procurement Officer. The project will also support a part-time Resort Liaison Officer at MoFA. In addition, a Works Engineer will be provided by the GoM for the project.

- Support for island level staff: In order to decentralize project management, project staff will be posted at Hithadhoo and Fuvahmulah for guiding and overseeing the implementation of project activities. The island level staff at each island will include a Protected Area Manager, a Protected Area Associate, three Protected Area Rangers, a Solid Waste Management Associate and an E&S Officer.
- Support for consultants to oversee the project implementation at the island level and to provide strategic and technical advisory support: The project will support an international implementation support consultant to oversee the project implementation at the island level, and, an international technical advisor to provide strategic and technical support the PMU.

Outputs: The key outputs of this component are:

- Fully staffed PMU in MEE and Resort Liaison Officer at MoFA.
- Decentralized project management structure with island level staff for Protected Area Management and SWM.
- Six-monthly reports on project progress with action plan.

Outcome: The key outcome of this component is efficient and effective management of CCA project components.

2.3 Conceptual details of some of proposed physical activities

2.3.1 Conceptual Designs of Improvement of Ecotourism Facilities

2.3.1.1 Construction of Huts for the rangers

It is proposed, if not completed under CCTFI, to construct two wooden huts to facilitate the control duties of the rangers, provide them a sheltered place to stay and space to store equipment. The hut in Koattey tip will serve to control recreational activities there and will have an extension for keeping the belongings of tourists while swimming or snorkelling.

The structure foot print is approximately 2.4 m x 2.4 m (See figure 2.4) and will not require removal of vegetation. No special equipment is required for construction.

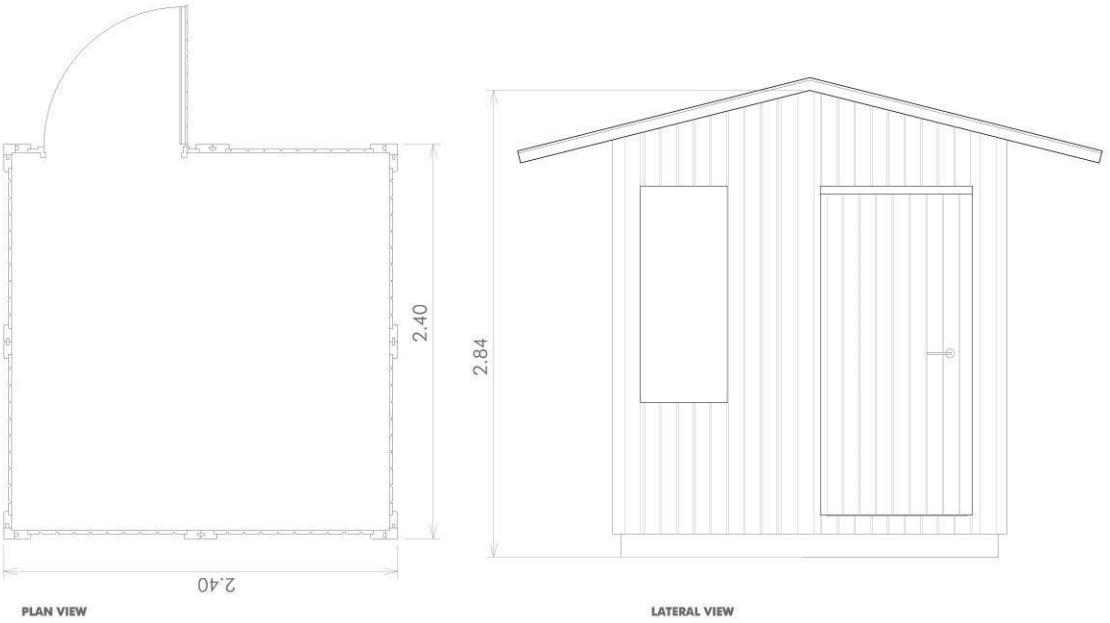


Figure 2.4: Proposed design for ranger hut (Source IDRIA/AQUATICA, 2013)

2.3.1.2 Control and regulation of access

It is proposed, if not completed under CCTFI, to install a closely spaced wooden fence along the extent of the terrestrial boundary with the settlement. An additional 1.5 m or wider footpath is to be created adjacent to the fence on the settlement side and a green fence is to be grown on the protected area side. The total length of the fence is about 1100 m. The design of the wooden fence is presented in Figure 2.5.

Motorized access will not be allowed inside the protected area, except for the management staff, and in special cases for security and emergency services, or holders of a special permit (contractors, researchers, etc.).

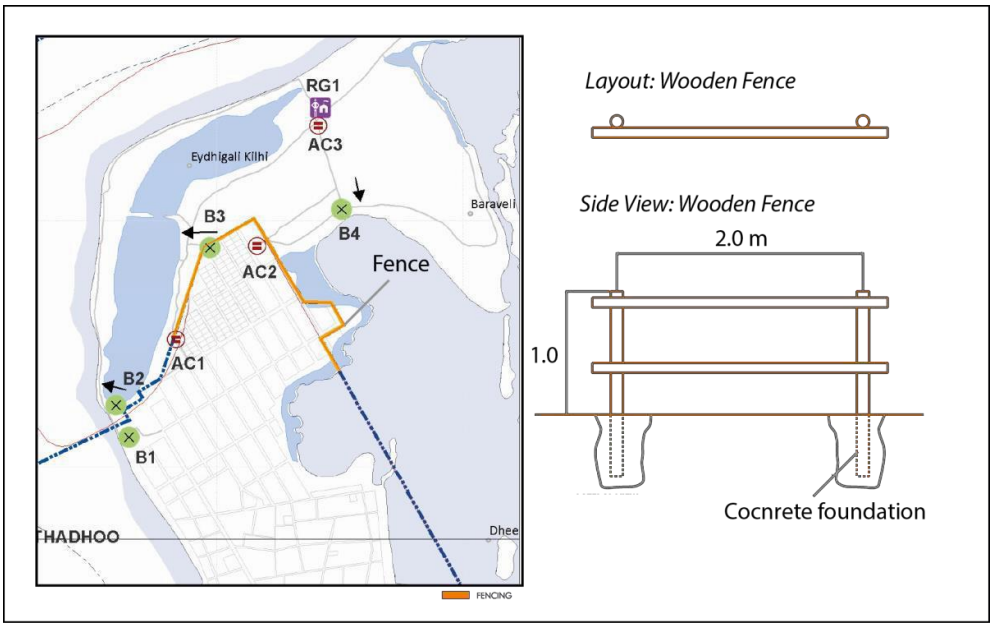


Figure 2.5: Proposed design for the wooden fence.

Mobile and fixed access barriers will also be constructed along selected points. Mobile barriers will be located at three locations and fixed barriers (bollards) will be located at four locations. The design for the mobile barriers is presented in Figure 2.6 and that of fixed barriers is presented in Figure 2.7.

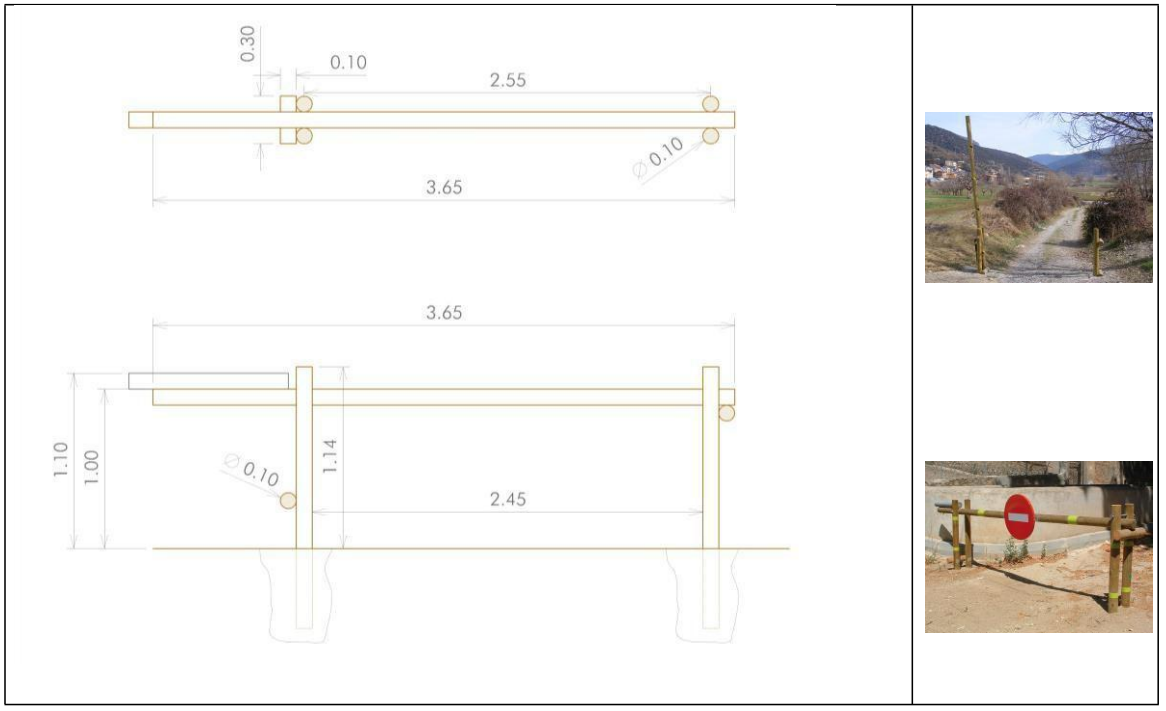


Figure 2.6: Proposed design for the mobile access barriers.

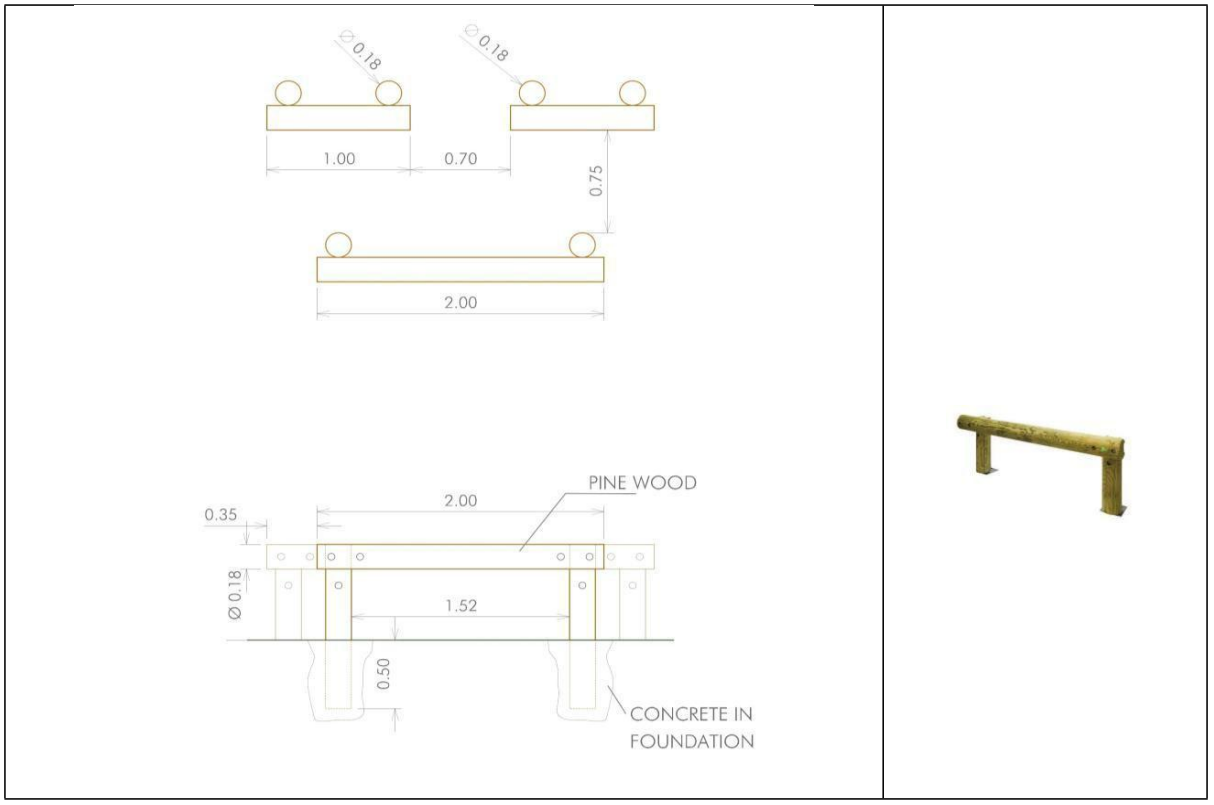


Figure 2.7: Proposed design for the wooden fixed barriers

This activity requires adjusting the fence according to the presence of vegetation and if unavoidable to relocate trees to create the footpaths. Any removed plants can be replanted on the other side to create the green fence. Usually, the fence should avoid trees where possible.

The fence foundation will be installed by excavating a 0.3 m diameter hole up to a depth of 0.5 m and pouring concrete into it. All installations will be undertaken manually.

2.3.1.3 Clearing an area along the dyke

An area along the manmade dyke separating the two sections of the wetland (See Figure 2.8) is proposed to be cleared to facilitate water flow between the two sections. This activity will be undertaken manually. The removed material will be placed alongside the dyke. Occasionally, these areas are cleared by the locals to improve the flow. This activity is expected to be a minor activity with minimal impacts on water quality and vegetation.

Figure 2.7: Proposed area for clearing the dyke

2.3.1.4 Restoring native fish population of the Kilhi

In order to restore the native fish population in the Kilhi, a programme for eradicating the exotic and invasive *tilapia (Footu mas)* population from the Kilhi and for the reintroduction of native fish (Milkfish, Beyngu, etc.) is planned be developed and implemented. This activity is planned for the next three to five years and detailed plan or methodology has been defined.

2.3.1.5 Removing and disposing all existing waste

This activity, if not completed under CCTFI, may require additional one-off removal of all existing waste from within the boundary of the protected area and its buffer zone, and disposing the waste as specified by the Waste Regulations and Addu City Council. Waste is distributed at a number of points and varying volumes across the protected area. Distributions of the major waste piles are shown in Figure 2.8.

Figure 2.8: Distribution of waste dump sites.

Given the variations in the density of waste piles, two methods have been proposed for its removal. Firstly, all smaller waste piles and those located on the fringes of the kilhi, mangrove area east of the kilhi, on or near the beach and the track leading Koattey areas shall be cleared manually. Transportation can be undertaken using pick-up trucks.

Secondly, all large waste piles which cannot be removed manually may be removed using a small backhoe/excavator. Excavator use shall not cut down any trees. The composition of waste ranges from general domestic waste, construction waste, electronic waste and green waste. It was difficult to estimate the actual volume of the waste due to poor accessibility. A crude estimate based on the area is between 600 to 1,000 cbm.

All the waste removed from this site will be transferred to the Addu City Waste Management Centre, as agreed with the City Council and as per the new Waste Regulation, 2013. Waste will be sorted on site. Waste transport is the responsibility of the project and disposing the waste is the responsibility of the Waste Management Centre.

2.3.1.6 Establishment of a waste treatment centre near Eidhigali Kilhi

In order to minimise future dumping of waste in the protected area a number of awareness activities and sign posts will be utilised over the course of the project lifetime. In addition, there is consideration to develop a waste treatment centre near Eidhigali Kilhi, which will be a waste reception and treatment centre of the households within the vicinity of the protected area. The centre is expected to be working closely with Addu City Waste Management Centre or perhaps even be operated by them.

The details of the centre have not been worked out at the time of this report and are planned for the latter half of the project. No land has been allocated yet. The new centre shall conform to the new Waste Regulations and must be registered with EPA.

2.3.1.7 Restoration of degraded areas

The lack of maintenance and supervision in the protected area has degraded some areas, particularly due to waste dumping and sand mining. These areas need to be rejuvenated through a specific plan. Tree plantation will take place after the removal of the existing waste and the prevention of sand mining. Reforestation will be done using native trees, mangrove and shrub species, which will be selected according to the vegetation found in each specific area. A plant nursery associated to the visitor centre could provide seedlings for the plantations. Bush trees that may be required to remove during construction could also be transplanted in these locations. This action should be carried out with the strong involvement of local community groups (volunteers, environmental clubs, women groups, NGOs, etc.) and always under the supervision and with facilitation from the management staff.

2.3.1.8 Installation of buoys

Anchorage in reef areas during traditional bait fishing is a threat to the health of the coral reef. It is proposed to install buoys in the area to assist traditional bait fishing vessels to moor without the use of steel anchors. It is estimated that there will be three such markers installed.

Identification of the marine protected area boundary has also proved difficult in the past for fisherman. A series of marine markers similar to the buoys are planned for the project. It is estimated that there will be five such markers installed.

The design for the buoys is presented in Figure 2.9. They are designed to allow two boats to moor concurrently. The anchor blocks are designed as interlocking units for safe and easy installation.

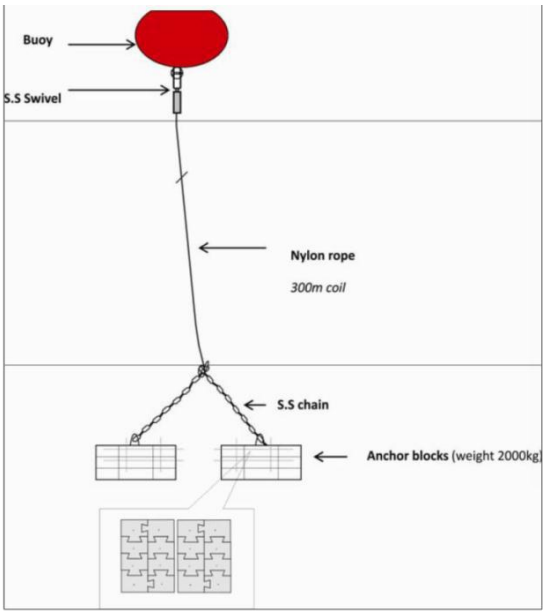


Figure 2.9: Proposed mooring buoy

2.3.1.9 Construction of the Visitor Centre

One of the main physical constructions from the project is the construction of a visitor centre at the main entrance to the protected area. Figure 2.10 provides an illustration of the proposed site plan.

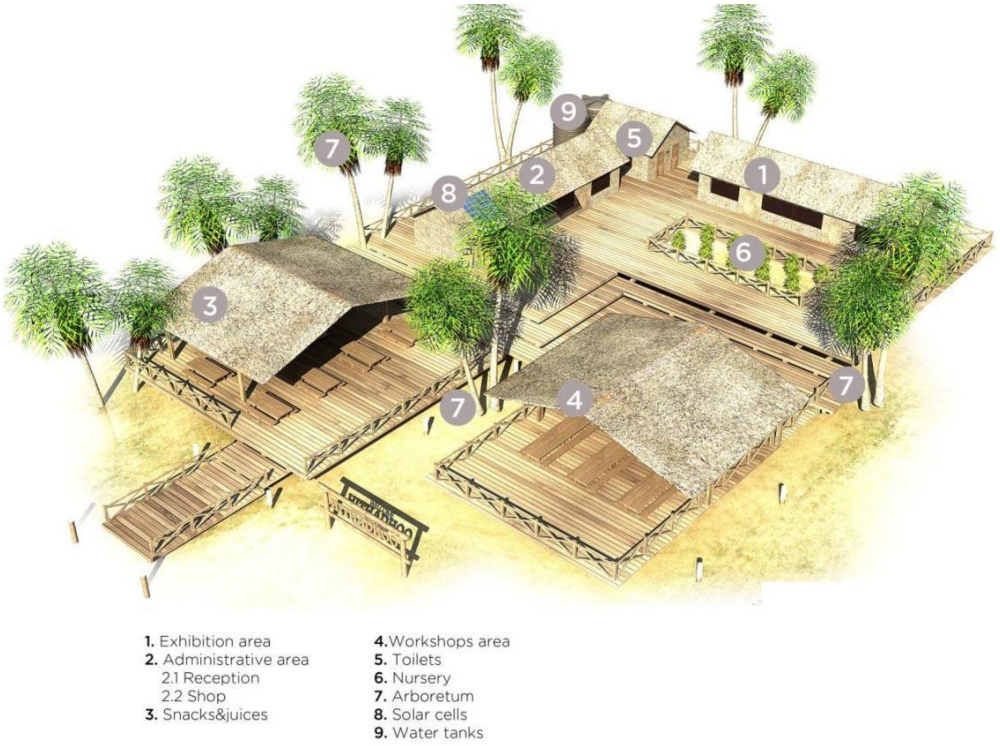


Figure 2.10: Artists' representation of the proposed visitor centre layout

The proposed visitor centre contains the following facilities:

1) Exhibition area: The exhibition area is designed as an educational facility for visitors which displays information about the protected area

Figure 2.11: Artists' representation of the proposed exhibition area

2) Administrative area: The administrative area will house the necessary office space required for the management aspects such as record keeping, planning, daily meetings, issue and managing entry fees and as stations for the rangers and office personnel. The area will also host the reception, shop and storage facilities for handicraft, tourist toilets and other rental facilities for tourists.

Figure 2.12: Artists' representation of the administration building

3) Cafeteria and rest area: The rest area contains facilities for resting and picnicking, including benches and a small café' for dispensing food and drinks. This area is to be specifically used by visitors to the protected area.

Figure 2.13: Artists' representation of the rest area

4) Workshops area: This is an area designed specifically to conduct outdoor training and workshop activities related to the protected area. Schools and tour guides can use the area for training and information briefing.

5) Toilets: Toilets will be established for visitors which will be maintained by the Protected Area administration.

6) Nursery / Arboretum: A nursery with a greenhouse will be established at the visitor centre. Its purpose is to serve as a nursery for trees required to rejuvenate the protected area and as a display of plants in the protected area for visitors. A museum-like setup of the landscape will also be created to display the plants and trees in the area.

2.3.1.10 Site clearance

Quantity of vegetation to be removed: The approximate quantity of vegetation within the proposed footprint of the visitor centre site are summarised in Section 4.2. The site is dominated by coconut palms and low bush vegetation, mainly Magoo. There are also some medium sized Dhigga and Midhili trees. Among these, most of the coconut palms that fall into the site will have to be relocated elsewhere. Some palms can be retained if they do not fall into the building footprint. An estimate of the number of trees that may have to be moved is provided below. It has to be noted the exact number trees will only be known when the site is set-out.

No. of trees	Detail
15-20	Medium Coconut Palms
10-15	Young coconut palms
3	Dhigga
3	Midhili
Numberous	Magoo

Among these, at least 50-60% may have to be removed.

Method employed to remove trees: Coconut palms and other trees with deep root systems will be sawed around at the base so that soil removal is minimal while some amount of soil is withheld with the root system. The tree will be lifted with the help of an excavator and a purpose built belt, and gently laid on to the truck. If required, the top canopy of the coconut palms will be pruned except for the crown and approximately 1/3 of the fronds will be removed.

Backfilling holes: The trenches and holes dug out to uproot the coconut palms will be levelled using sand available on the site. Additional sand may be bought from local sand suppliers to improve the aesthetics. Given the small number of palms, and their medium sizes, the amount of sand required is expected to be very minimal.

2.3.1.11 Replanting

Sites for replanting will be identified by the Addu City Council. The planting holes will be watered prior to re-plantation. The palms will be placed exactly at the original height to prevent trunk rot. Initially the trees will be supported by 3 timber stakes tied around it, where necessary, until the roots of the palms take hold. Regular watering will be required to at least 2-3 months, if relocated during the dry season, to assist tree growth until root re-establishment.

2.3.1.12 Construction method

The proposed site contains vegetation cover, mainly of the bush varieties. They will need to be cleared and disposed. The footprint of the visitor centre area is 2000 m^2.

All structures are designed with wood to blend it to the surroundings. The structure will be built using prefabricated units made of tropical timber, based on the following construction elements:

- Tropical sawn timber foundation (*cherry, teak, iroko or other similar timber*)
- Sawn tropical timber beams (*cherry, teak, iroko or other similar timber*)
- Large scantling sawn tropical timber trusses (*cherry, teak, iroko or other similar timber*)
- Wooden pergola overlay
- Coconut palm thatch
- Exposed decking made of tropical timber planks (*cherry, teak, iroko or other similar timber*)
- Exterior carpentry using iroko timber, to be varnished

All buildings will be raised from the ground level by about 0.2 m. A timber decking will be constructed for all walkways except for the central courtyard. This area will be covered using coral sand.

Machinery required for construction is a mini excavator and a concrete mixer.

Excavation is required to install the footings. All footing will have a concrete structure embedded into the soil. Dewatering is not expected to be required unless work is undertaken during the peak rainy season. If dewatering is required, the extracted water will be allowed to sink back to the ground water lens and dewatering permit will have to be acquired from EPA.

2.3.1.13 Electricity and Water

Electricity will be sourced from STELCO on a commercial basis. In addition, solar panels will be installed on the visitor centre roof to reduce the use fossil fuel based power and to reduce electricity costs.

Water for general use will be collected from rainwater and stored in overhead tanks placed above the building. Drinking water will be provided based on bottled mineral water. General use will comprise of cleaning and toilet. In situations where there is rainwater shortage, ground water will be used.

Flushing will use ground water. Given the estimated low usage of toilets, the amount of groundwater extracted is expected to be well below recharge rates of the area.

2.3.1.14 Sewerage

The Government plans to install an island wide sewerage system on Hithadhoo Island within the next few years. Once installed, the visitor centre will use the island wide system.

At present there is no sewerage system on the island and most households use individual septic tanks to manage sewage. This project proposes to install a temporary septic tank system for its operations until the main sewer network is installed. The proposed septic tank system is an 1800 gal (6813 litre) system, which is adequate for the estimated visitor numbers for the next 5 years.

The system will be maintained by the staff of the protected area management office. The sludge will be taken out periodically and transported to the waste management centre. It has been planned to dry the sludge in the waste management centre and either burn or use them as fertilizer.

2.3.1.15 Waste management

Waste generated during construction will be disposed at the Hithadhoo Waste Management Centre before contractor demobilization. Waste during operation will be collected at the visitor centre, sorted and transported to the Waste Management Centre through the central collection system operated by the City Council. Waste collection within the Protected Area will be undertaken by the Protected Area staff.

2.3.1.16 Construction of visitor facilities

The following visitor facilities are planned to be constructed to facilitate the enjoyment of the protected area and to manage the visitor activities.

1) Bird Observatories: Given that one of the main attractions of Eidhigali Kilhi is its bird life, particularly during the NE monsoon, two types of bird observatories are proposed. Type I observatories are a simple wooden structure consisting of a wall with holes at different heights (See Figure 2.14). The wall is a hide-out that enables visitors to watch the birds without disturbing them. It is planned as a non-invasive structure that will take advantage of the surrounding vegetation to provide need for shade. Type II observatories are located at the dyke. The observatory is designed as a small tower with about 0.42 m high to offer better vision of both sides of Kilhi (See Figure 2.15)

Figure 2.14: Artists' representation of the Type I bird observatory

Figure 2.15: Artists' representation of the Type II bird observatory

The two types are constructed from treated wood. The wooden piles are driven to the ground using a hammer and the decking will be constructed on them.

2) Boardwalk: To minimise the impacts of walking through the mangrove and to improve the visitor experience a boardwalk is planned to be constructed in the mangrove area. The structure will be approximately 100 m long and 2.4 m wide. The foundation will be cast in concrete and will require excavation. The structure is raised at least 0.5 m from ground level. This activity will require relocating some bush vegetation within the footprint of the boardwalk. No mangrove vegetation will be removed and construction is mainly to taken place in a vegetation free space between the mangrove strands and wetland edge. It will also require manual excavation and concreting within the wetland area (but not areas with surface water).

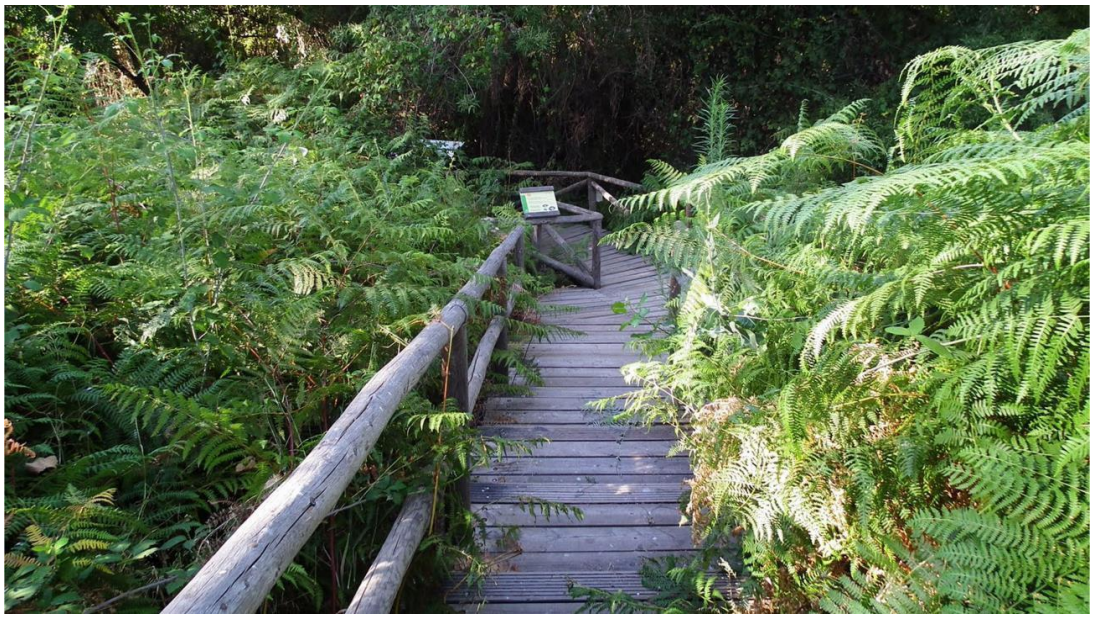


Figure 2.16: An example of a boardwalk

3) View point: Viewpoints are to be constructed at selected points to enhance the visitor experience and to minimize the impact footprint of visitor activities. All structures are made from timer and raised slightly above the ground. Construction is similar to the bird observatories.

Figure 2.17: Artists' representation of the proposed viewpoint

4) Picnic Area: A picnic area will be created on the Koaattey area but no major structure will be developed. Sitting areas will be created using wooden benches. Picnic area will be clearly marked.

5) Sign posts: A number of signposts are planned to be installed around the protected area as guides, notices and awareness information. All signs will be constructed from wood.

2.3.1.17 Establishment of a green fencing surrounding the farmland

A green fence, constructed as a layer of dense vegetation, will be developed around the farm land area. This is to reduce the visual impacts for visitors. The trees will be sought from the nursery.

2.3.1.18 Project Schedule and Life Span

The proposed works are expected to be completed within 8 months. The tentative work plan for the project is presented in Appendix F. The actual work plan depends on the final contractor.

2.3.1.19 Labour Requirements and Services

2.3.1.19.1 Workforce

It is projected that the total number of employees during the construction stage will be around 30-40. The origins of workers depend on the final contractor. If a local contractor is involved, all accommodation will be existing facilities on the island. If a foreign contractor is involved, workers will be accommodated on rented houses. The small workforce required for the project is unlikely to have any significant effect on the demand for services and resources.

2.3.1.19.2 Services

The Contractor is expected to provide workers with meals and appropriate entertainment facilities. The Proponent would not be responsible for any of the services to be provided to the Contractor‘s staff or workers.

2.3.1.20 Waste Management, Logistics and Safety Measures during construction

2.3.1.20.1 Site Office and Accommodation

As noted above, it is anticipated that the workforce will be using rented houses or their own residences. The site office for a contractor from outside the island will utilise a rented facility. No additional construction will be required.

2.3.1.20.2 Utilities

Electricity for the project must be sourced using a portable generator, unless they can come to a separate agreement with the utility service provider to source electricity from them. In the absence of a desalination plant on the island, water for concreting activities will be sourced from groundwater.

2.3.1.20.3 Construction Waste Management and Disposal

The construction waste arising from this project are mainly green waste, general packaging waste (mainly cement and aggregate bags), general municipal waste from workforce and excavated earth. Municipal, packaging and green waste will be disposed to the waste Addu City Waste Management Centre located at Hithadhoo Island, as per the new national Waste Regulation 2013. Excavated earth, if any available, will be reused for making foot paths.

2.3.1.20.4 Pollution Control Measures

The following measures will be taken to ensure minimal pollution during construction stage.

- Machinery will be properly tuned and maintained to reduce emissions and minimize risk of spills/leaks.
- Any fuel storage must be bunded.
- No fuel should be stored or handled within the protected area boundary.
- All water pumped out during dewatering must be pumped back into the wetland.
- Before doing so, the pumping area must be bunded using screen small enough contain fine sediments or the outfall of the pipe should be enclosed in a strong bag with a fine mesh.
- Any paints, lubricants, and other chemicals used on site will be stored in secure and bunded location to minimize risk of spill.

2.3.1.21 Summary of Project Inputs and Outputs

The types of materials that will go into the development and from where and how this will be obtained are given in Table 2.3 and the type of outputs (products and waste streams) and what is expected to happen to the outputs are given in Table 2.4.

Table 2.3: Major Project Inputs

Input resource(s)	Source/Type	How to obtain resources
Construction workers	Local and foreign	Contractors responsibility

Construction material	Reinforcement steel bars, sand, cement, aggregates, treated wood, plywood, and thatch leaves	Import and purchase where locally available at competitive prices – Main Contractor‘s responsibility.
Water supply (during construction)	Ground Water	Wells
Electricity/Energy (during construction)	Utility service provider	Utility service provider
Electricity/Energy	Utility service provider / solar PV	Utility service

Input resource(s)	Source/Type	How to obtain resources
(during operation)		provider / installed solar PV units
Machinery	Excavators, dump trucks, concrete mixers etc..	Local suppliers
Transport (air and sea)	Domestic air and sea transport	
Food and Beverage	Local cafés and restaurants	
Firefighting equipment	Carbon Dioxide and Foam Fire Extinguishers, etc.	Local suppliers
Fuel	Diesel	Local suppliers

Table 2.4: Major Project Outputs

Output Source/Type	Quantity	How it will be dealt with
Outputs during construction stage		
Green waste from site clearance	small quantity	Burnt or mulched at the Addu City Waste Centre.
Construction waste (general)	Small quantities	Combustibles: Sent to Addu City Waste Centre.
Excavated Earth	small quantity	Reused for creating footpaths
Waste from protected area cleaning	Large quantity	Sent to Addu City Waste Centre
Operations stage waste	Small quantities	Sent to Addu City Waste Centre
Hazardous waste (construction stage)	Small quantities	Sent to Thilafushi

2.3.2 Conceptual plan for Island Waste Mangement Centers

2.3.2.1 Waste Generation in Addu City and Fuvahmulah

Waste generation has been forecasted based on studies undertaken by the Ministry of Environment and Energy in designing the waste management systems for Male‘ and the North Region (Noonu, Raa, Baa and Lhaviyani Atoll). However, household waste generation has been tested in Addu city and placed against the data from the North Region, as part of a recent waste management planning process in the city.

Average waste generation from households is calculated based on the population at 800g (0.8kg) per person per day. Previous studies also indicate that the average waste generation from commercial institutes is 0.65kg per employee per day. Accordingly, average waste generation for resorts and tourist facilities are calculated at 3.5kg per bed night in addition to the 650g per employee.

	Total Waste Generation, Daily (TPD)	Total Waste Generation, Annual (TPY)
Addu City	34	12,410
Fuvahmulah	9.6	3,504

Waste audit carried out in Addu city (September 2013) revealed that about 72% of the waste generated comprises of organic waste including kitchen and garden waste. This is almost the same for all islands in the region.

Plastics and diapers take up the second largest quantity by weight. Diapers are particularly problematic in that they are infectious and do not decompose or combust easily. About a 40% of the plastics hold potential for recycling through accumulation of a marketable quantity in a clean storage. Rest of the plastics is equally distributed into used plastic bags / wrappers and high density plastics. These can largely be reduced through promotion of alternative biodegradable packaging and consumer awareness.

Cardboards and drink containers comprise of around 3% of the total waste generated. There is an existing market for re-export of metals as described in the Waste NL (2009) study undertaken in conjunction with EPA. Price of metal ranges between 50 Laari per kg and MVR 1.50 depending on the level of segregation and compaction of the metals. Glass/ceramic which also takes up around 3% of the waste composition can easily be converted for building or decorative use by crushing.

Although a re-use/ scavenger market exists for fabrics and polyfoams, awareness campaigns can mobilize healthier markets for the fabrics and polyfoams toward minimizing the quantities that enter the waste stream. Construction and Demolition waste is being re-used for the new developments.

2.3.2.2 IWM Targets

- Ensure that target island has resolved its waste management issues.
- Establish rules and regulations for waste management.
- Reduce the waste produced and to use reusable materials.
- Aggregate all waste that is produced and dispose of it properly.
- Raise awareness of the community regarding the economic benefits of keeping the island clean.
- Establish a mechanism to ensure that waste is managed appropriately through fee collection to meet part of the costs of waste management.
- Establish an appropriate system of using suitable equipment at the waste management centre.
- Strengthen the waste collection system.

It is proposed that household waste will be segregated into two categories; e.g. organic and non-organic wastes. The Community is to decide on household waste collection arrangements. It proposed that in addition

to composting recyclable bottles and other such items would be separated at the island waste management centers (IWMC).

2.3.2.3 Framework of interventions

Target	Current status	Activities
Reduce the quantity of waste generated.	Not much awareness activities. Increase in waste generated day by day. Littering on roads and public places.	Undertake awareness activities Promote bulk purchasing
Increase Reuse and Recycling.	Schools have carried out reuse activities to some extent but can be expanded further.	Establish contacts with Aluminum and Can exporters Waste segregation
Generate Revenue from Waste.	Waste is disposed through open burning or dumping.	Composting Waste segregation
Awareness on economic benefits of keeping island clean.		Raising awareness and placing dustbins in public areas
Establish User Fees for sustainable waste management.	Currently Households spend for waste management services.	Establish user fees for waste collection.
Improve the site and waste management centres.	The management of the IWMCs is poor	Construct composting pad Improve the overall storage of segregated waste
Use Waste Management Equipment.	Basic equipment are available	Purchanse and use of equipment necessary for segregation, recycling and composting
Establish Waste Collection Service from households	Ad hoc	Acquire bins to keep waste sorted at household level, and to sort waste at the IWMC

2.3.2.4 Conceptual Designs of IWMCs

While the project will not construct new IWMCs, the following Figures from 2.18 – 2.26 are provided to give an understanding of the standards to be maintained during the improvement work of existing IWMCs. The details of specifications are provided in Appendix I.

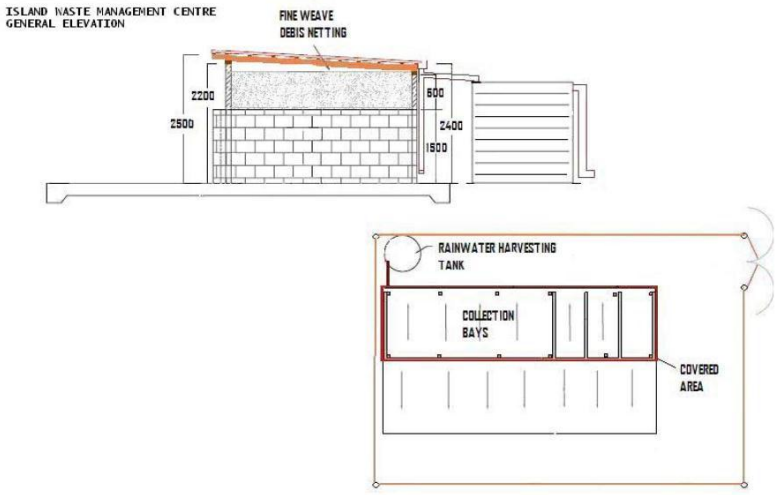


Figure 2.18: General elevation to be maintained

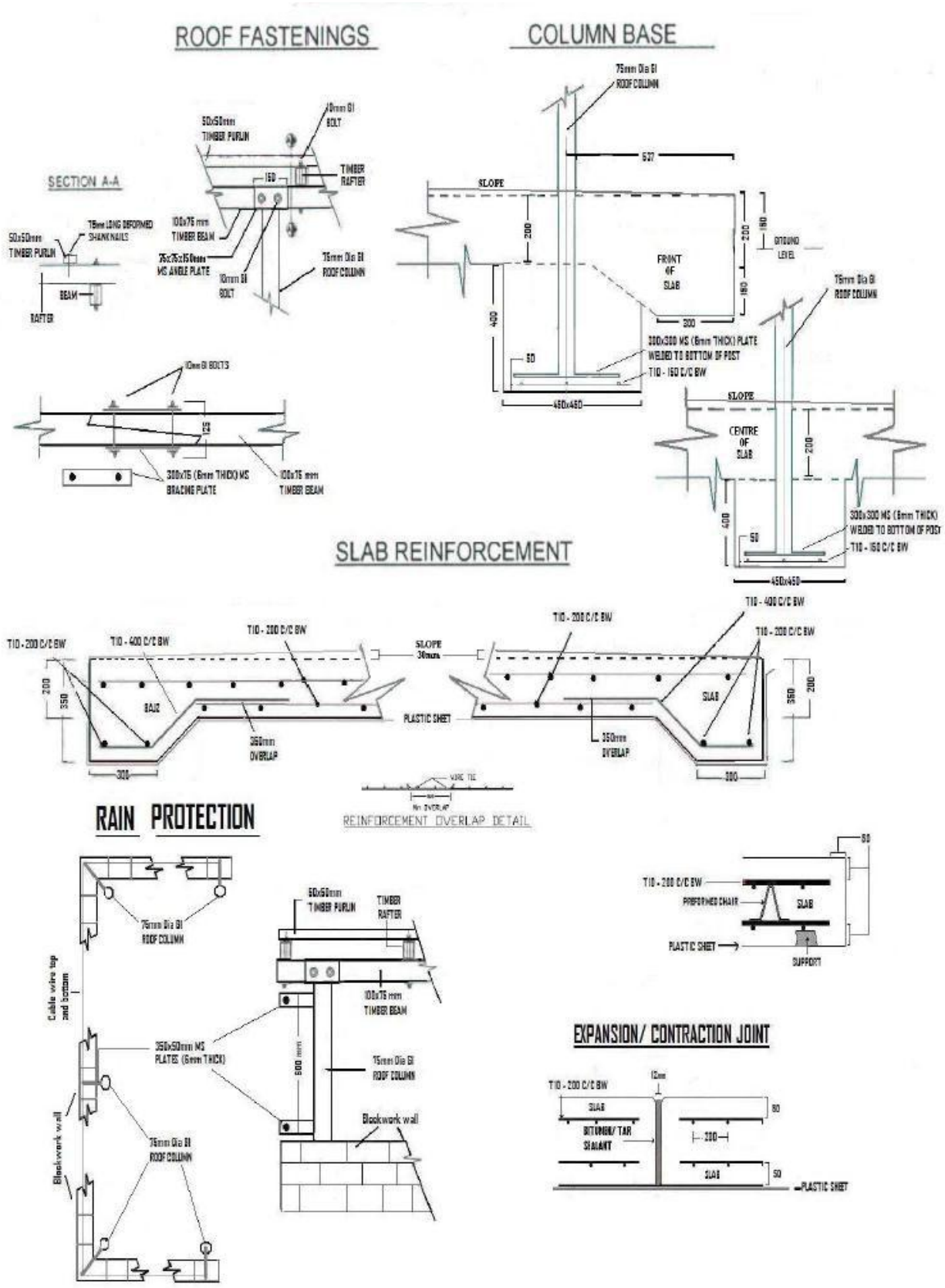


Figure 2.19: General details of the IWMC

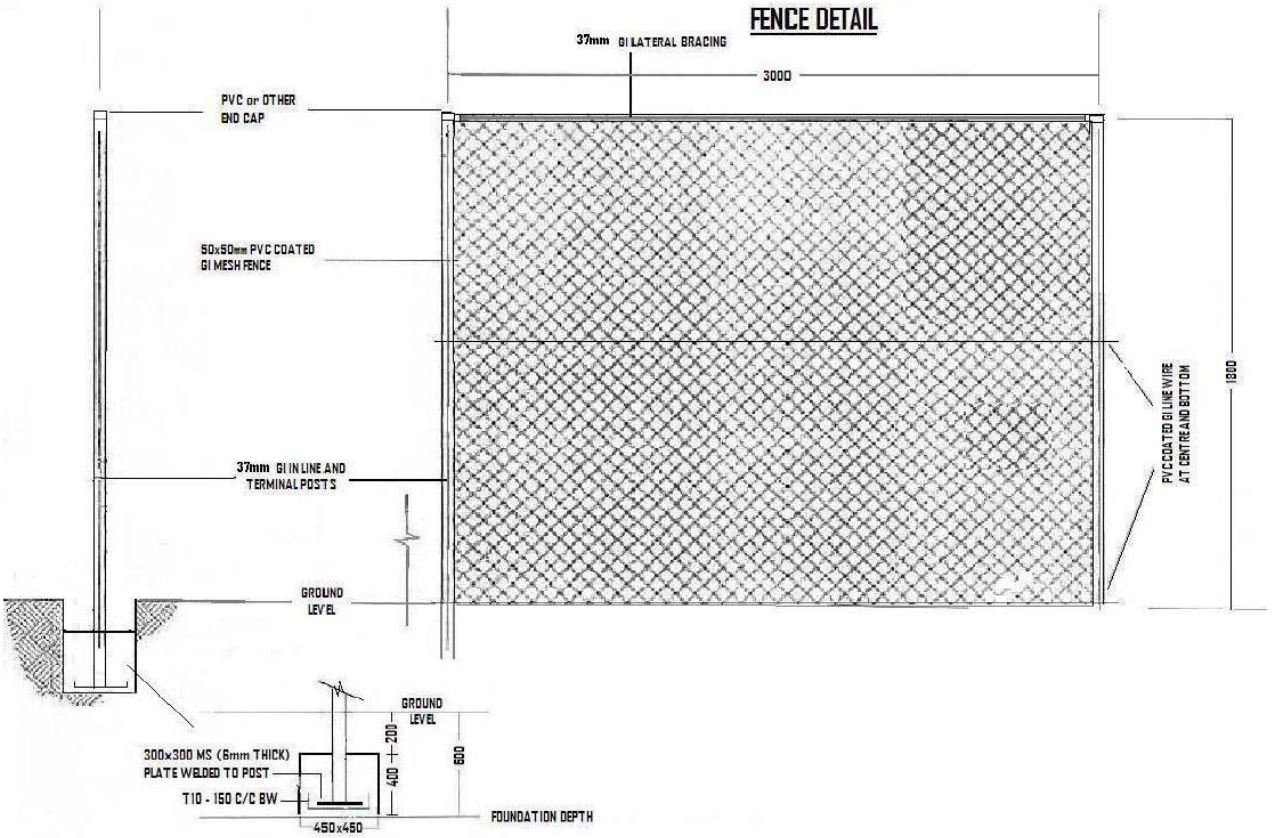


Figure 2.20: Fence design

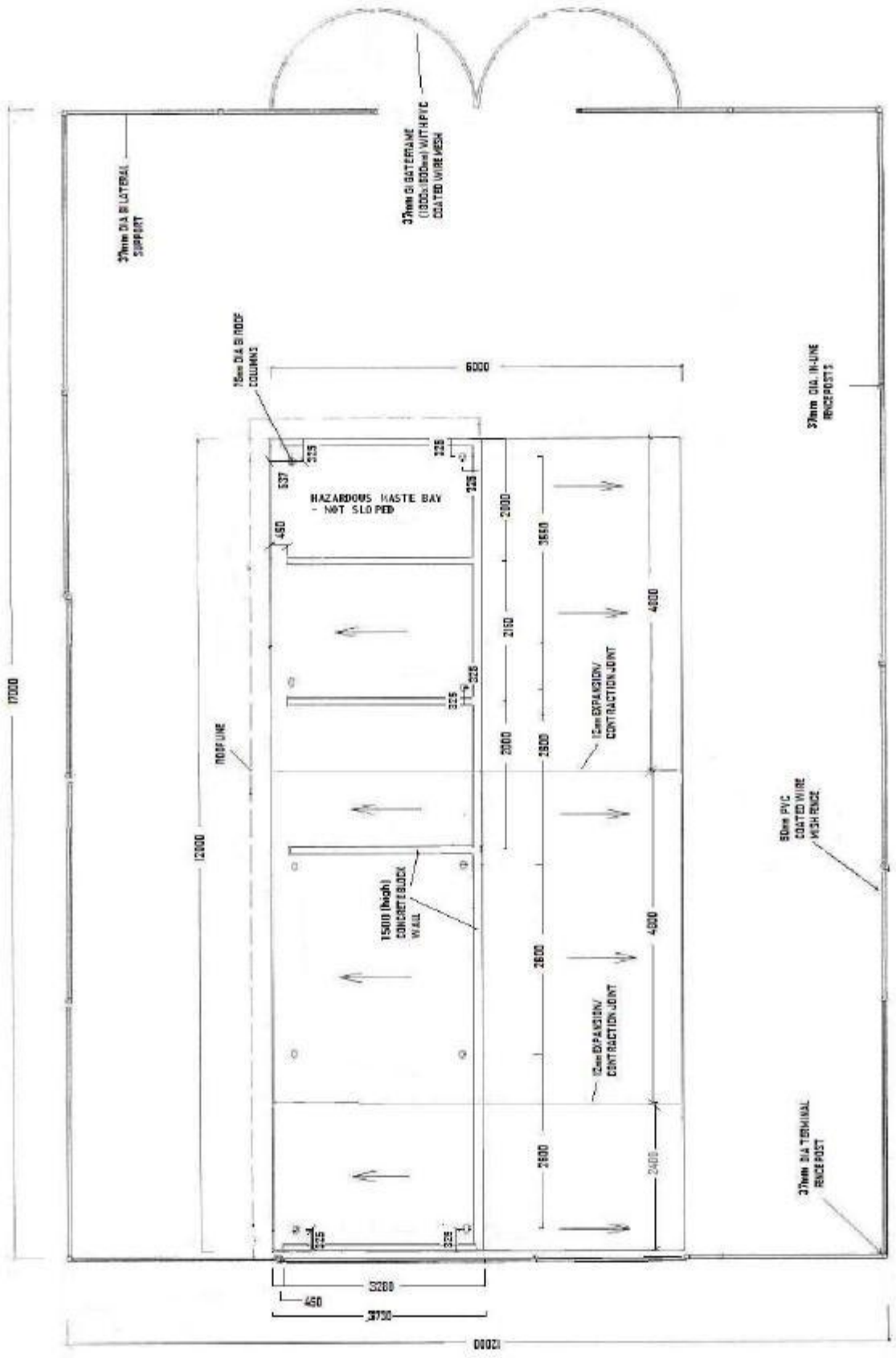


Figure 2.21: 500 person IWMC layout

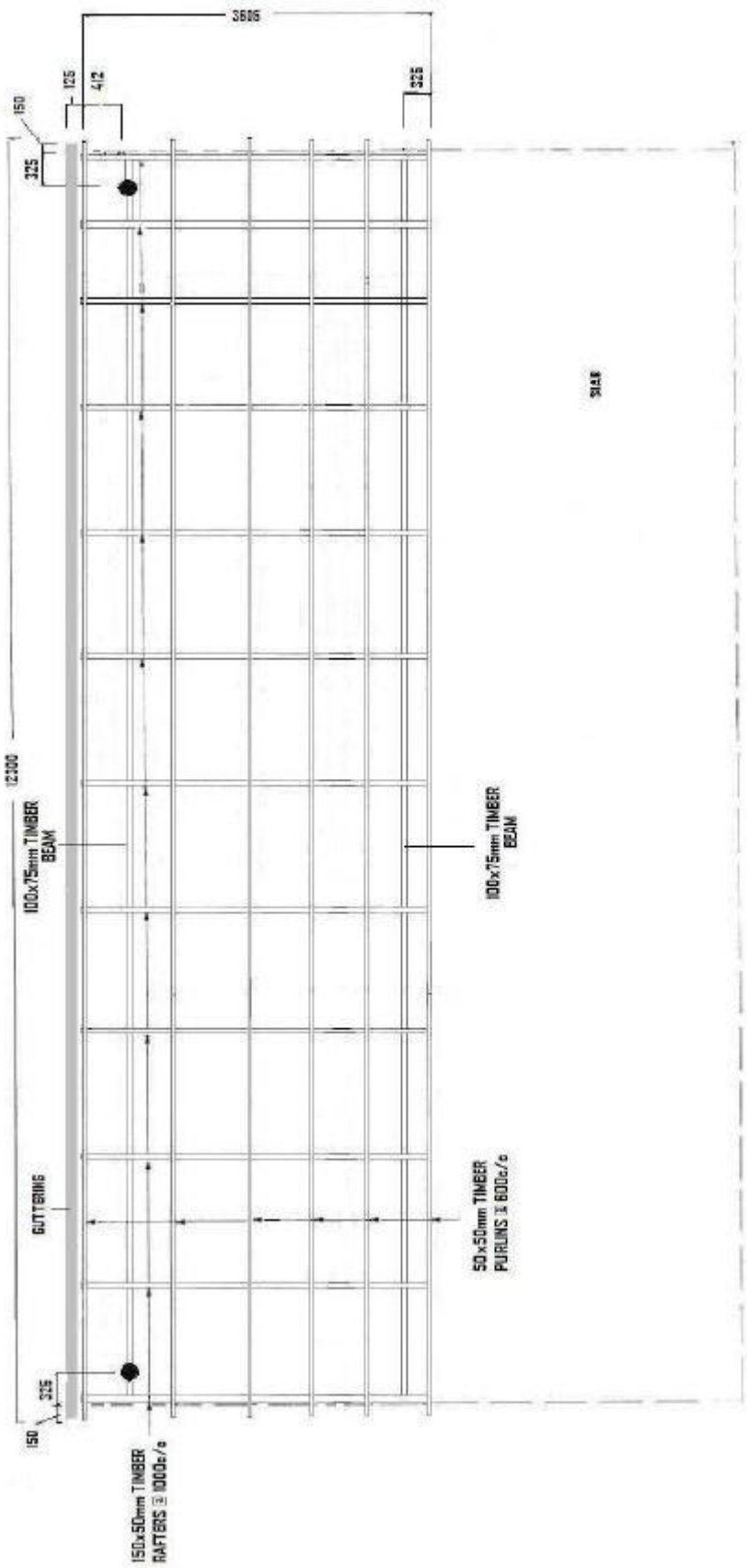


Figure 2.22: 500 persons IWMC Roof Frame

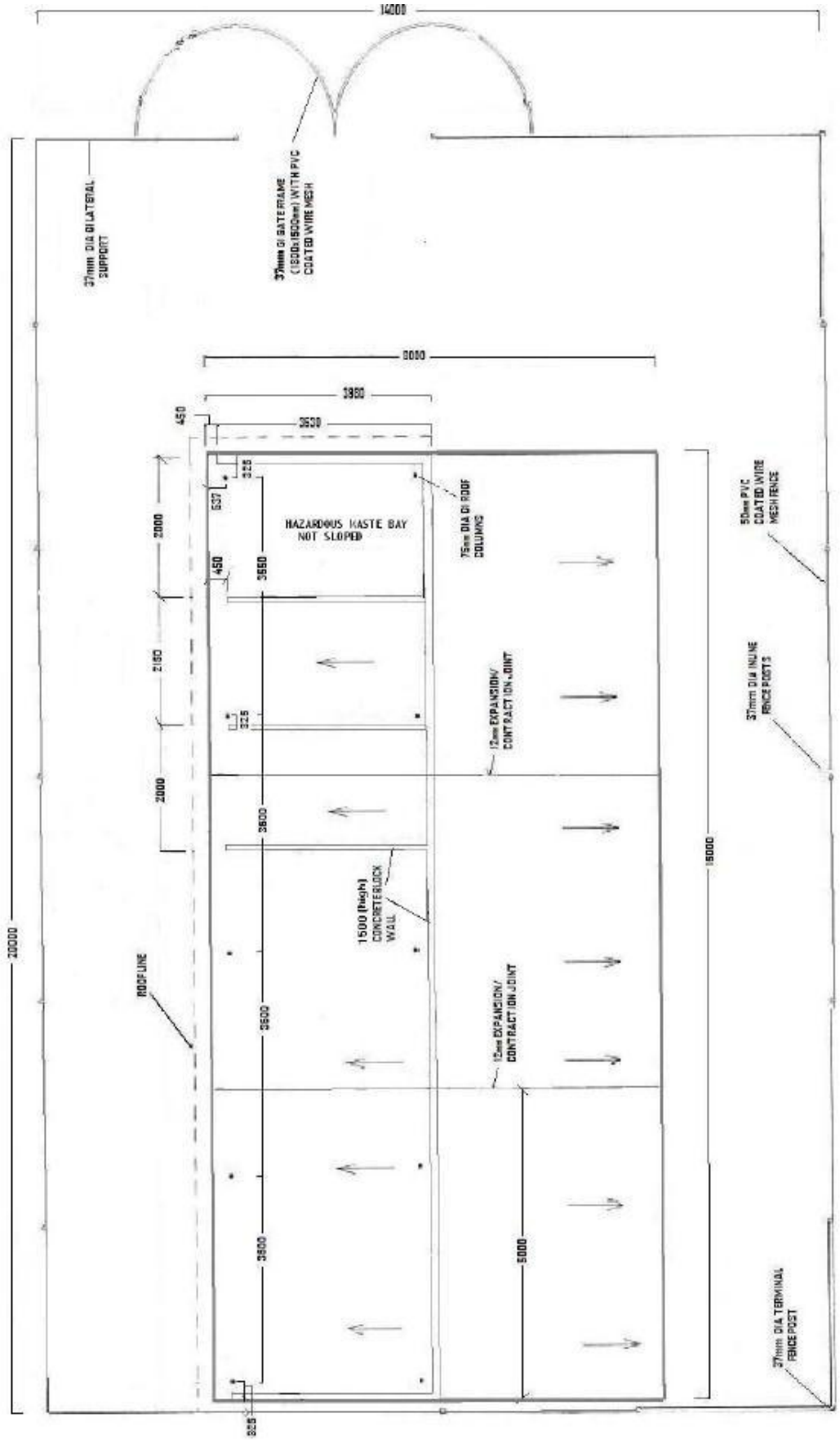


Figure 2.23: 1000-person IWMC layout

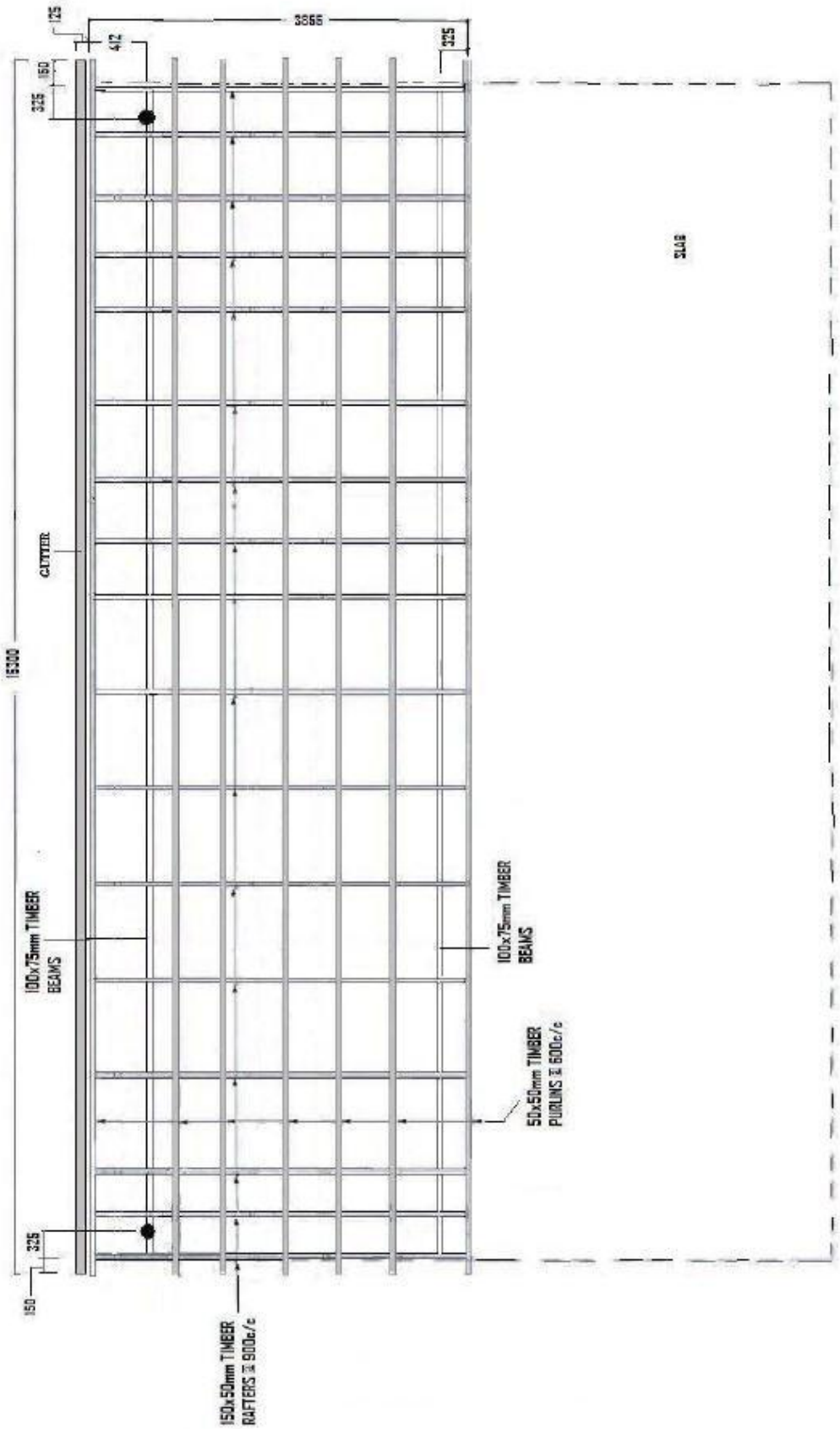


Figure 2.24: 1000-person IWMC Roof Frame

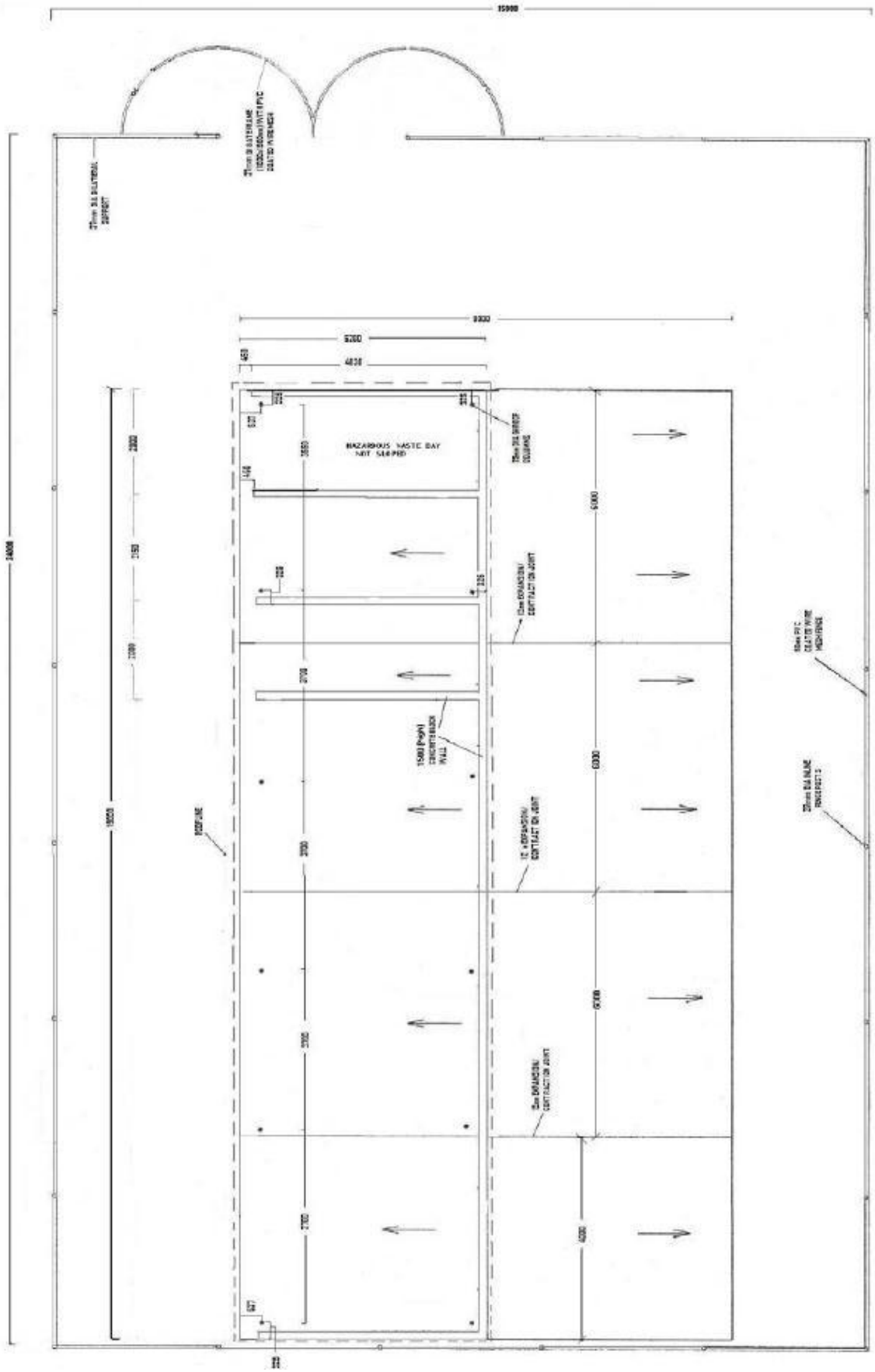


Figure 2.25: 1500-person IWMC Layout

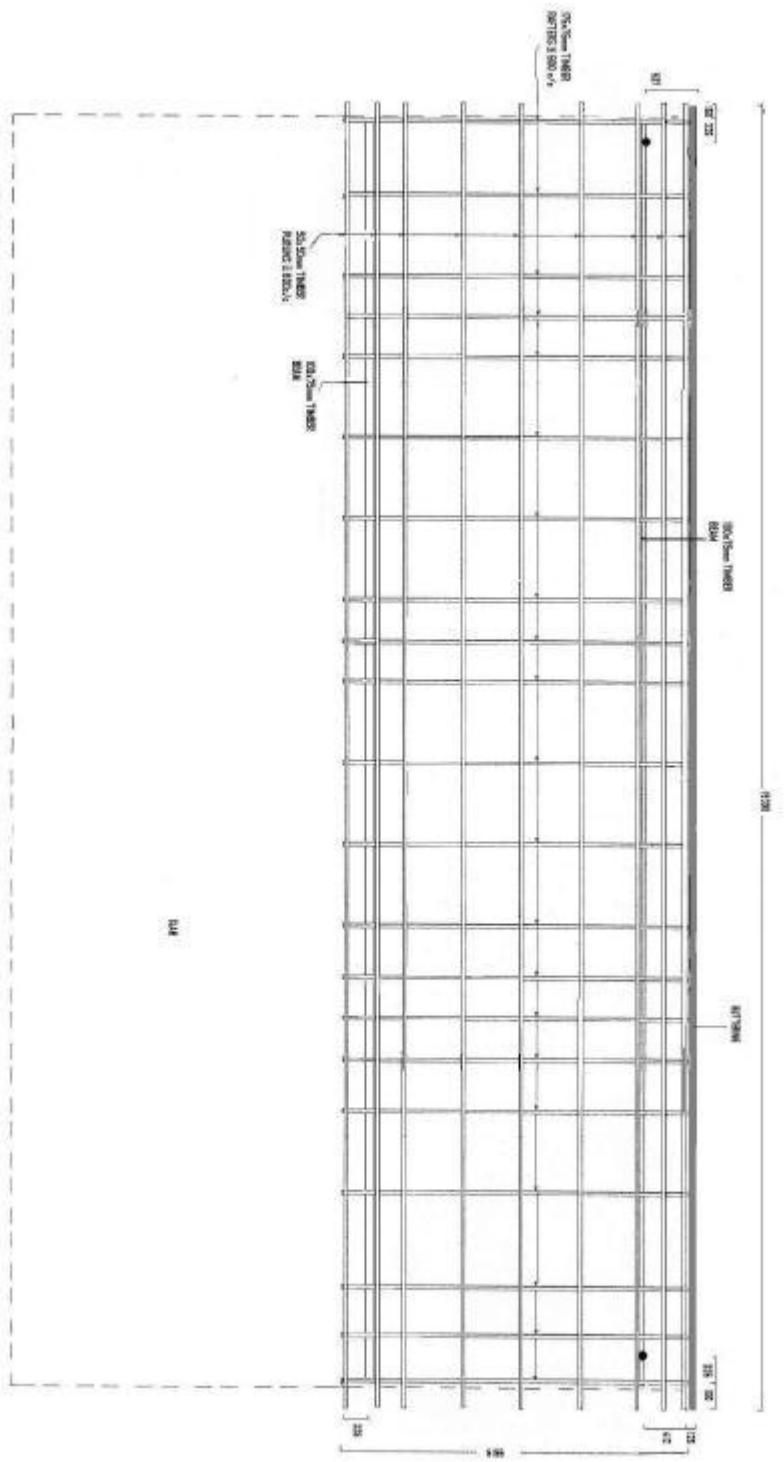


Figure 2.26: 1500-person Roof Frame

REVIEW OF REGULATORY AND INSTITUTIONAL FRAMEWORK

2.4 Republic of Maldives Policies and Legislation

2.4.1 Introduction

The Ministry of Environment, Energy and Water originally held the mandates for protection and preservation of environment. Under a reorganisation of the ministries in December 2008, the responsibility for the environment was taken over by the Ministry of Housing, Transport and the Environment. Subsequently, in January 2011, the ministries were further reorganised, and the Ministry for Housing and Environment took responsibility for the environment. With the next reorganization, the current Ministry of Environment and Energy (MEE) is now responsible in the formulation and regulation of policies, law, regulations and rules on environmental protection and conservation.

The Project will be required to comply with the national legislation. The key aspects of the legislation and policies are described in the following sections.

2.4.1 Regulation on Sand and Aggregate Mining

This regulation addresses sand mining from islands and bird nesting sand bars. Sand and aggregate mining from beaches of any island whether inhabited or uninhabited is banned for protection of the islands. Permissions for sand and aggregate mining from other areas shall be obtained from the relevant authorities. This regulation is applicable as some households depends on sand mining for their livelihood.

2.4.2 Law of Fisheries (No. 5/68)

Coral reef and coastal marine resources are managed by the MFAMR and regulations for the management of reef resources. All types of fisheries and marine activities are permitted and regulated by the MoFAR under this law. This law is applicable as large number of Maldivians depends on fishing as their livelihood.

2.4.3 Tourism Act: Law no. 2/99.

Although the large part of this Law relates to the establishment and operation of Resort Islands, the section 'On Tourist Hotels and Tourist Guesthouses'will be relevant. The clauses of the Act which would be applicable to the establishment of small hotels or guesthouses, the approach favoured by the islanders on Fuvahmulah, are as follows: (The clause numbers are those in the particular sections of the Act).

17. Neither a tourist hotel nor a tourist guesthouse shall be operated in the Maldives except after registering the same at the Ministry of Tourism and after obtaining a licence issued by the Ministry to operate such establishments.

18. A licence to operate a tourist hotel or a tourist guesthouse shall be issued to those establishments that satisfy the following conditions:-

    (a) the building and facilities are in accordance with guidelines made by the Ministry of Tourism;

(b) the services determined by the Ministry of Tourism to be necessary at such an establishment are made available at the tourist hotel or tourist guesthouse;

(c) the registration fee prescribed in section 21 of this Act is paid; and

(d) the establishment is situated on an island determined pursuant to section 4 of this Act for the development of tourism.

19. Where the Government leases any land for development as a tourist hotel or a tourist guesthouse, such a lease shall be made in accordance with the provisions of this Act relating to the leasing of islands or land for development as tourist resorts. Furthermore, the provisions of this Act relating to tourist resorts shall also apply [equally] in respect of tourist hotels and tourist guesthouses.

20. No tourist shall be provided accommodation for payment in any establishment other than a tourist hotel or tourist guesthouse registered and licensed under this Act or a tourist resort or tourist vessel licensed under this Act.

21. Every tourist hotel or tourist guesthouse shall he registered upon payment of a registration fee of MRf 10,000 in the case of a tourist hotel and MRf 5,000 in the case of a tourist guesthouse.

2.4.4 Land

The 2008 Constitution vests all land in the State and bans foreign ownership of land. It is understood that Government is reviewing land-related legislation to bring it into line with the constitution and current development policy. Meanwhile, matters relating to land are governed by the provisions of the Maldivian Land Act and Regulations of 2002, as subsequently amended.

The Act empowers Government to allocate land for five purposes:

- The construction of households and buildings for residential purposes;
- For commercial use;
- For social use;
- For environmental protection;
- For government use.

Under the Act, all Maldivian citizens who do not have a place of residence are entitled to a parcel of land for residential purposes, entitled a "state dwelling". Such parcels are issued by the respective Atoll Office and must not exceed 4,000 ft^2 (372 m^2). The parcel is forfeit if not developed ("settled") within five years. State dwellings are heritable and divisible, down to no smaller than 600 ft^2 (56 m^2).

State dwellings can be privatised by purchase from the government. Conversion to non-residential purposes is possible subject to compliance with land use policy, and a permit. Sales of private land attract a 15% tax.

Buildings, trees and other assets on land belong to the owner of the land or official user of the land, unless third-party ownership can be proven under Shari'ah.

Land for agriculture is allocated to residents by island administrations on an annual renewable basis. The land remains government property. No rent is paid, but the plots are generally small and the system provides little security or incentive to invest in and improve the land[iii]. It is understood that the Ministry of Fisheries and agriculture (MoFA) is preparing an Agricultural Land Act to address these issues, with assistance from the UN Food & Agriculture Organisation (FAO).

When land is required for public projects, it is understood that the legal owner or registered user is compensated on a land-for-land basis, with fixed assets being paid for at fair market price.

According to a recent President's Office Press Release (Ref. No. 2011-374), the Cabinet has established the Maldives Land and Survey Authority. The Authority will conduct surveys and collect and update information on the most beneficial use of lands, lagoons and reefs of the Maldives, and formulate and implement cadastral survey standards.

2.4.5 Gender

The 2008 Constitution bans discrimination on grounds of sex except as prescribed by Islamic Shari'ah. This sits uneasily with the Maldives' earlier commitments to international agreements including the Convention on the Elimination of All Forms of Discrimination (CEDAW) in 1993 and the CEDAW Optional Protocol in 2006 (with reservations on Articles 7 (a) and 16). The Maldives is also signatory to a number of international instruments addressing gender equality including the Commonwealth Action Plans on Gender Equality, and is party to all major human rights treaties, with the exception of the Conventions on the Rights of Migrant Workers and their Families[iv].

A National Policy on Gender Equality was passed in 2006, and as of 2009 was being revised: the National Gender Equality Policy (draft 1) was founded on the fundamental principle of Equality for All, enshrined in the 2008 Constitution. The vision is –a just society where…., women enjoy fundamental rights and freedoms on a basis of equality of men and women….. participate in and benefit from democracy and development both in public and private life‖ (UNDP, 2010). A National Policy on Gender Equality of Women and Men is available from the Ministry of Gender and Family's website, in Dhivehi.

The President acts as the Gender Focal Point for the National Planning Council and is dedicated to gender leadership and the implementation of gender strategies, policies and plans. Gender Focal Points have been established in all line-Ministries to co-ordinate and network leading to a coherent approach to gender mainstreaming in their respective ministries (UNDP, 2010). Formerly, the Department of Gender and Family Protection Services of the Ministry of Health and Family (MoHF) was the lead agency for gender mainstreaming and promoting gender equality in national government, but it is now the Ministry of Gender and Family (MoGF).

Analyses of gender issues in the Maldives are available in, for example, ADB's 2007 Gender and Development Assessment[v] (ADB, 2007), UNDP's 2010 Situational Analysis (UNDP, 2010), and FAO's factsheet on Women in Agriculture, Environment and Rural Production (FAO, undated).

2.4.6 Other Social Laws

Legislation relating to human rights and labour is listed in Table 2.1 below.

Table 2.1: Human Rights and Labour Law

Year	Name	Details
1984	*International Convention on the Elimination of All Forms of Racial Discrimination*	Accession 24 April 1984
1990	*Prevention of Terrorism Act (Act No.10/1990)*	The Act prohibits acts of terrorism, and imposes severe punishment for offenders.
1991	*Convention on the Rights of the Child*	1991 Ratified 11 February 1991
1993	*Convention on the Elimination of All Forms of Discrimination Against Women*	Accession 1 July 1993

Year	Name	Details
2002	*Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography*	Ratified 10 May 2002
2004	*Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment*	Accession 20 April 2004
	Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict	Ratified 29 December 2004
2006	*Human Rights Commission Act (Act No. 6/2006)*	Established the Human Rights Commission as an independent legal entity mandated to protect, promote and sustain human rights in the Maldives, and to assist NGOs.
	Human Rights Commission of Maldives	The Human Rights Commission of the Maldives was first established on 10 December 2003 as an independent and autonomous statutory body by Decree by the President of the Republic of the Maldives. The Commission was later re-established under the Human Rights Commission's Act in 2006. The aim of the Commission is to lead the promotion and protection of Human Rights under the Maldives Constitution, Islamic Shari'ah and regional and international Human Rights Conventions ratified by the Maldives. Although the Human Rights Commission currently focuses mainly on the public sector, the Commission also works with the private sector, specifically in creating awareness on human rights issues.
	Optional Protocol to the International Covenant on Civil and Political Rights (OPICCPR)	Ratified 19 September 2006
	International Covenant on Economic, Social and Cultural Rights (ICESCR)	Ratified 19 September 2006
	Optional Protocol to the Convention on the Elimination of All Forms of Discrimination Against Women	Ratified 13 March 2006
	Optional Protocol to the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment	Accession 22 June 2006 (founding member)
2008	*Employment Act (Act No. 2/2008)*	Specifies the rights and duties of employers and employees. The Employment Act specifically prohibits forced labour, discrimination at the work place, and child labour.

Year	Name	Details
2009	*Pension Act (Act No. 8/2009)*	Mandates upon every employer to enrol all employees on a defined contribution pension scheme.
	Employment Tribunal	The Tribunal was established pursuant to the Employment Act with the objectives of examining and arbitrating legal matters arising in the work environment between the employer and employee and any matters ascribed to the Employment Tribunal pursuant to the Employment Act or any other Act or regulation or under any agreement, in an expeditious and simple manner.
2010	*The Convention on the Rights of Persons with Disability (CRPD)*	Ratified 1 April 2010
	Sexual Harassment Bill [under development]	Defining sexual harassment in work place and assigns responsibilities for prevention of different stakeholders of such acts and sets out penalties for the offenders.
Other	*The President of Maldives Award for Human Resource Development in the Tourism Industry*	The Award was established to encourage hoteliers and resort operators to invest and contribute towards training and development of staff in order to demand for qualified staff within the tourism industry.

Source: FJS Consulting (2010)

2.5 World Bank Safeguard Policies

The World Bank has a number of Operational Policies (OPs) and Bank Procedures (BPs) concerning environmental and social issues, which together are referred to as the Bank's ‗Safeguard Policies'. If, during the development of a project, it is considered that it is possible that a proposed project activity could be the subject of one of the safeguard policies, that policy is considered to have been ‗triggered'. In the subsequent development of the project, that activity must be considered in more detail to determine whether it is actually of no concern or adequate mitigation can be applied to address the concern, or the activity should be removed from the project (or the whole project should be dropped). The sections below address those Safeguard Policies that have been triggered by the project under review, and the actions that have been taken to ensure that the requirements of those policies will be satisfied in the further development of the project.

Safeguard Policies Triggered by the CCA Project	Yes	No
Involuntary Resettlement (OP/BP 4.12)	√	
Indigenous Peoples (OP/BP 4.10)		√

2.5.1 Involuntary Resettlement (OP/BP 4.12).

OP/BP 4.12 – Involuntary Resettlement was triggered because it was considered that some of the potential investments in the wetland areas might lead to the loss of land or structures and/or the loss of access to areas of importance for livelihood support. These issues have been taken into consideration whilst conducting the ESMF, and none of the interventions that have been considered / proposed by the project would cause such problems. Moreover, the screening protocols and mitigation guidelines referred to under OP/BP 4.01 above

will ensure that any interventions considered in future within the project itself will not cause involuntary resettlement. As an ‗insurance' for this issue, an outline Resettlement Policy Framework (RPF) has been provided (see section 4.4.5 below), so that if any resettlement issues should arise they can be resolved satisfactorily.

2.5.2 Resettlement Policy Framework

Introduction

It is not expected that people will be displaced by actions undertaken as part of the projects. Indeed, the avoidance of a need for resettlement is one of the sub-component screening criteria. However, given that the sub-components to be developed, especially integrated solid waste management, cannot be known at the ESMF stage, a Resettlement Policy Framework (RPF) has been provided below as an ‗insurance' that resettlement issues can be addressed in the event that they do arise during project implementation or as a result of technical assistance for SWM after the project completion.

This RPF is generic. The detailed social impacts of individual sub-components cannot be known until the sub-components are proposed and designed. Similarly, it is not possible to include material such as an entitlement matrix at this stage, because that would also be specific to the sub-component concerned.

Broad Principles

This 'framework' aims to outline the principles to be applied in the resettlement and rehabilitation of any project affected persons (PAPs) so that they do not suffer adverse effects from the project and they improve, or at the minimum retain, their previous standard of living, earning capacity and production levels. The resettlement actions should minimise dependency and be sustainable socially, economically and institutionally. Special attention must be paid to improvement of the living standards of any vulnerable or marginalised groups. The broad principles of the policy are as follows:

- Adverse impacts on persons affected by the project should be avoided to the extent possible.
- Where adverse impacts are unavoidable, the PAPs will be assisted in improving or regaining their standard of living. Vulnerable groups will be identified and assisted to improve their standard of living.
- All information related to resettlement preparation and implementation will be disclosed to all concerned, and community participation will be included within planning and implementation.
- Individuals losing land, house or other assets will be consulted for mitigation measures well before the required land is taken.
- Persons affected by the project who do not own land or other property but who have an economic interest in it or will lose their livelihoods (e.g. tenants and squatters), will be assisted as per the broad principles of this policy.
- A valuation exercise will be undertaken in advance of project implementation in order to value any land or assets that may be needed by the project, either temporarily or permanently.
- A census and socio-economic survey of affected communities will also be undertaken.

- PAPs who will permanently lose land or access to land should be offered alternative land if practicable, or financial compensation if not.

- Any financial compensation should be at full present market replacement cost, including all legal and removal fees.

- All replacement land and compensation payments should be provided before the start of any project work.

- Any PAPs losing their homes will be provided with assistance with removal and ongoing rehabilitation.

- If PAPs are to be resettled, the host community, if any, should be consulted in advance and, if needed, specific measures should be provided to address their concerns.

- If necessary, an entitlement framework of different categories of PAPs should be prepared and budgeted for. (However, anyone moving into the project area after a specific cut-off date will not be entitled to compensation or assistance.)

- An appropriate grievance redress mechanism will be established at project level to ensure the prompt resolution of any complaints or disputes.

- All activities related to the planning, implementation, and monitoring of resettlement should include the involvement of women and vulnerable groups.

- All consultations with PAPs shall be documented. Consultations will continue during the implementation of resettlement and rehabilitation.

- If appropriate, a Resettlement Action Plan (RAP) will be prepared by the proponents, including a fully itemised budget and an implementation schedule.

Definitions

The following definitions are used in the documents and/or can be used during the project:

(i). Cut-off Date: The cut-off-date shall be the date of start of the census and socio-economic survey undertaken by the project authority.

(ii). Project Affected Person: PAPs are those who stand to lose all or part of their physical and non-physical assets including homes, productive land, community resources, commercial properties; livelihood; and socio-cultural network.

(iii). Project Displaced Person: A displaced person is a person who is compelled to change his/her place of residence and/or workplace or place of business, due to the project.

(iv). Project Affected Family: A family whose primary place of residence or other property or source of livelihood is adversely affected by the acquisition of land for a project or involuntary displacement for any other reason

(v). Family: A ‗family' is a man and woman sharing a household, along with their dependants including parents and children.

(vi). Vulnerable Person: A person who is poor, physically or mentally disabled/handicapped, destitute, disadvantaged for ethnic or social reasons, an orphan, a widow, a person above sixty years of age, or a woman heading a household.

(vii). Entitled Person: A person adversely affected by the project who is entitled to some kind of assistance as per the project entitlement framework

(viii). Host Community: People living in or around areas to which people physically displaced by a project will be resettled who, in turn, may be affected by the resettlement.

The Process

Declaration of the project and its impact zone

As the first step in the process, the Government of Maldives or the City, Atoll or Island Council will inform the community well in advance about the project, its features and its likely adverse and positive impacts.

Social Screening: Identification and Categorization of Impacts

The purpose of screening is to provide an overview of the nature, scale and magnitude of the issues, in order to determine the need for conducting a Social Impact Assessment (SIA) and preparing a Resettlement Action Plan (RAP). After identifying the issues, the applicability of the Bank's social safeguard policies is established, along with the local regulatory requirements. Based on this screening, the boundaries and focus areas for the SIA, along with the use of specific instruments, are determined.

Social Impact Assessment (SIA)

The project will undertake a survey for the identification of the persons and their families likely to be affected by the project. The survey must include:

Members of families who are residing, practicing any trade, occupation or vocation in the project affected area

Project Affected Families who are likely to lose their house, homestead, commercial establishment, agricultural land, employment or are alienated wholly or substantially from the main source of their trade, occupation or vocation, or who will lose any other immovable property or their source of livelihood.

People losing access to private property or common property resources.

The survey results will be disseminated among the affected community.

Resettlement Action Plan (RAP)

Based on the social impact assessment survey, the project will prepare an action plan to minimise and/or mitigate the adverse impacts as identified during the survey. The draft mitigation plan in the form of a comprehensive resettlement action plan (RAP) will be again disseminated among the affected individuals / community. The feedback received from the affected groups will be incorporated to the extent possible before finalisation of the RAP. The RAP will take into account the magnitude of impacts and accordingly prepare for Bank approval a resettlement plan that is consistent with the above principles before the sub-project is accepted for Bank financing. The cost of RAP implementation will be entirely dependent upon the nature and scale of the social mitigation / compensation required for the subject sub-project.

RAPs should include the following details:

(i). The extent of the area to be taken for the sub-project;

(ii). A list of project affected families and the likely number of persons to be displaced by impact category;

(iii). The extent and nature of land and other immovable property in the affected zone, by family;

(iv). A list of the names of persons whose livelihood depends on the natural resources of the project area;

(v). A list of persons who have lost or are likely to lose their employment or livelihood, or who have been alienated wholly and substantially from their main sources of occupation or vocation consequent upon the acquisition of land and / or structures for the project;

(vi). A list of occupiers, to include tenants and informal occupiers / ‗squatters'.

(vii). Quantified impacts by types of impact and type of affectees

(viii). A list of public utilities and Government buildings which are likely to be affected

(ix). A comprehensive list of compensation and benefit packages which are to be provided to project affected families by impact category;

(x). Details of the extent of land available for resettling and allotting land to the project affected families;

(xi). Details of the basic amenities and infrastructure facilities which are to be provided for resettlement;

(xii). Grievance Redress Mechanism

(xiii). The time schedule for shifting and resettling the displaced families;

(xiv). The ongoing support to be provided to resettled families, including any necessary help in re-establishing their livelihoods;

(xv). Arrangements for monitoring the resettlement process.

Benefits for Project Affected Families

Resettlement and rehabilitation (R&R) benefits must be extended to all the Project Affected Families. The details of such benefits should be defined within an entitlement matrix. The entitlement matrix given below will guide preparation of Resettlement Action Plan (RAP).

Type of Impact	Unit of entitlement	Eligibility	Mitigation measures
Loss of agriculture land	Household	Legal land owner	Compensation for loss of land or land of same size and quality If loss of land is less than 10 % of total land holding, three months of average income as subsistence grant If loss of land is between than 10 to 25 % of total land holding, six months of average income as subsistence grant If loss of land is more than 25 % of total land holding, one year of average income as subsistence grant
Loss of residential land	Household	Legal owner of land	Compensation for loss of land or land of same size and quality
Loss of residential structure	Household	Legal owner of structure; tenants; non titleholders	Compensation for loss of structure Six months of rental allowance at market rate
Loss of commercial structure	Household	Legal owner of structure; tenants; non titleholders	Compensation for loss of structure Six months of rental allowance at market rate
Loss of livelihood	Individual	Employee of commercial	Six months of income

Type oflm pact	Unit of entitlement	Eligibility	Mitigation measures
		structure, labour in agriculture fields; non titleholders; etc	
Loss of community / public structure / facility	Community		Project to replace any structure / facility impacted by the project

3 BASELINE CONDITION OF PROPOSED PROJECT SITES

There are two key areas, Fuvahmulah and Addu within which project activities will be carried out.

3.1 Fuvahmulah

Socio-economic Environment

Population Structure and Migration Characteristics

Population and Growth Rate

According to census 2006, the total population residing in *Fuvahmulah* is 7,636, with 3,557 males and 4,079 females. *Fuvahmulah* population contributed to 2.6% of the total population of Maldives during that period. The registered population data from Fuvahmulah Atoll Council indicates that as of February 2014 the total population of the atoll is 12,006 comprising of 6,060 males and 5,946 females.

Table 4.13 Average Annual Growth Rate, Gn. Fuvahmulah, Census 2006

	Census 2000	**Census 2006**	**Percentage Change in Population (2000-2006)**
Total Population	7,528	7,636	1.43%
Male	3,464	3,557	2.68%
Female	4,064	4,079	0.37%

Source: Ministry of Planning and National Development, census 2000 &2006

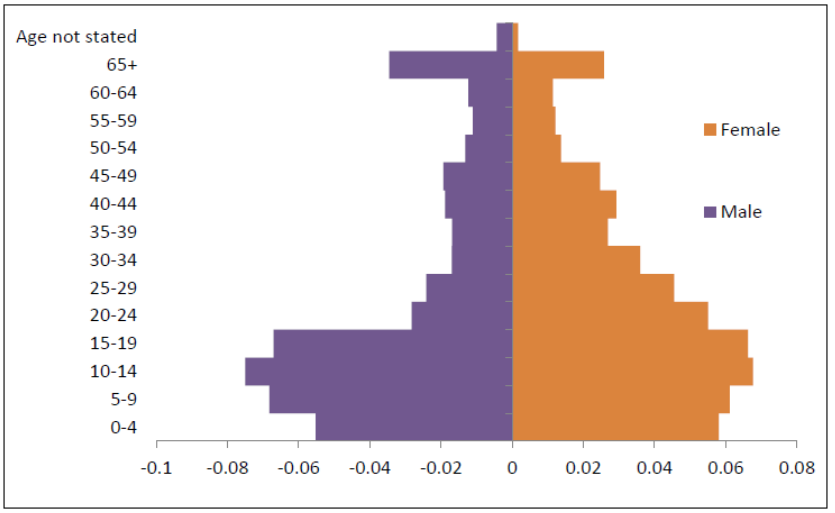
Table 4.13 above shows the average annual growth rate for *Fuvahmulah.* There was a slight positive population growth rate between 2000 and 2006 at a rate of 1.43%. Compared to 2000, the population of *Fuvahmulah* increased by 108 people in the year 2006.

Sex Ratio

According to the census 2006, National Sex Ratio for the country shows that there were more men than women in the Maldives (103 male per 100 females). However in *Fuvahmulah*, population of women out numbered that of men (87 male per 100 female).

Population Structure

Figure 4.15 below is the population pyramid for *Fuvahmulah* in 2006. The most dominant age group for this population is between the ages of 10-14 years. The dependent population is at 45% with 39% children and 6% elderly. The working age population comprises of more than half of the population with 55%.

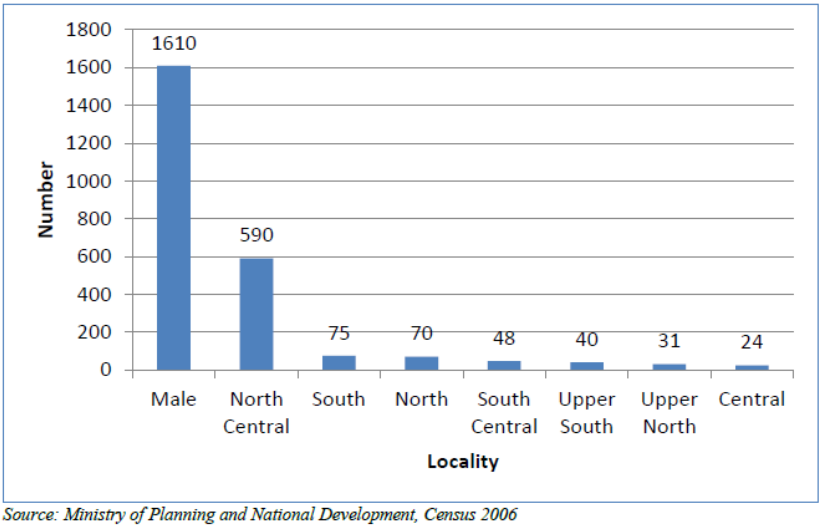


Source: Ministry of Planning and National Development census 2006

Figure 4.15 Population Pyramid of Gn. Fuvahmulah, Census 2006

Migration

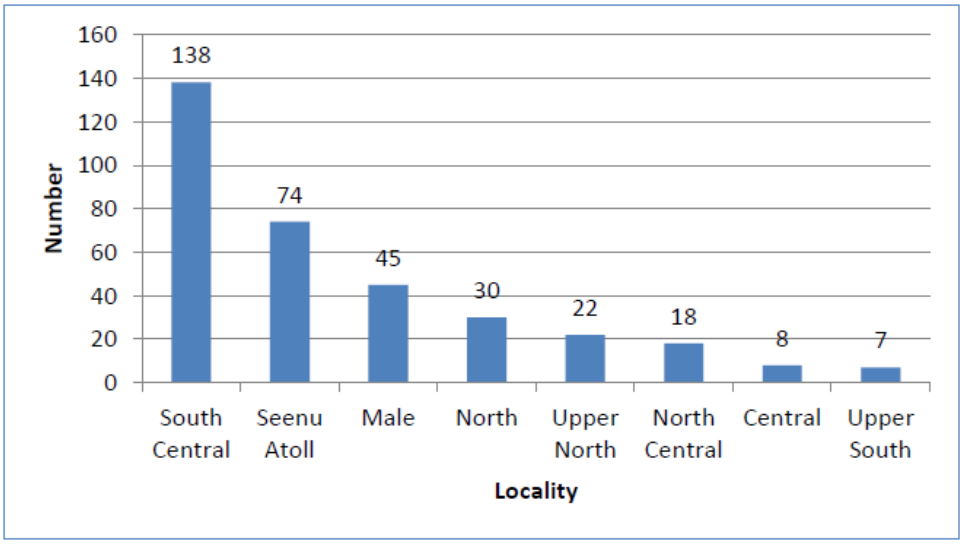
According Census 2006, the registered population of *Fuvahmulah* was 9,705 people, out of which 74% resides in *Fuvahmulah*. From the 26% of persons migrated from *Fuvahmulah*, 17 percent lives in Male'. Figure 4.16 below shows the number of out-migration of *Fuvahmulah* population by place of enumeration.



Source: Ministry of Planning and National Development, Census 2006

Figure 4.16: Out migration of Gn. Fuvahmulah population by place of enumeration

According to Census 2006, there were three main reasons for *Fuvahmulah* population to migrate. 10% of them reported the purpose as for education, while another 10% reported as for employment opportunities. A further 35% reported that they moved because they wanted to live in the island they migrated to. Majority of the people living in *Fuvahmulah* were registered in *Fuvahmulah*, however, 5% of people residing in *Fuvahmulah* were registered in other regions. Figure 4.17 below shows the number of persons residing in *Fuvahmulah*, however were registered in other localities.



Source: Ministry of Planning and National Development, Census 2006

Figure 4.17: In-migration to Gn. Fuvahmulah population by place of registration

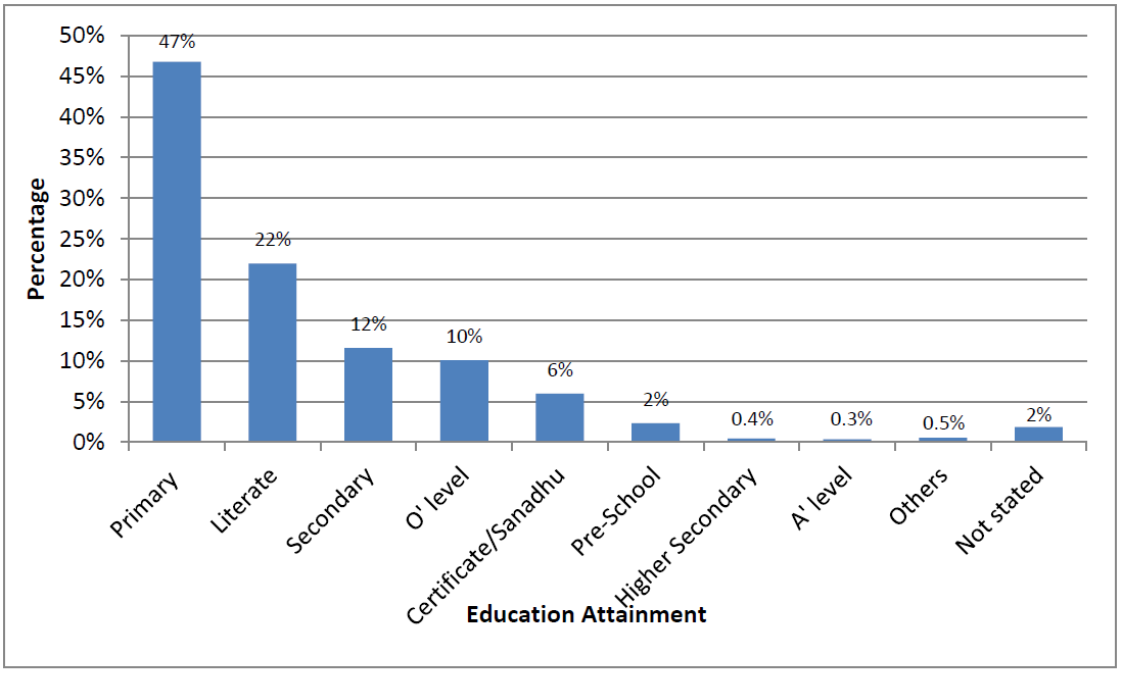
Education

As of March 2010, there were a total of 10 schools in *Fuvahmulah* out of which 5 are government schools, 1 community school and 4 private schools. The 10 schools comprises of 6 pre-schools, 3 primary schools and a secondary school. Gn. Atoll Education Centre, the only secondary school serving the island is the largest education centre in the island. The 3 primary schools of Fuvamulah include Fuvahmulaku School, Madharusathu-Sheik Mohammed Jamaaluddeen and Hafiz Ahmed School. As of March 2010, there were a total of 220 teachers which includes 183 trained and 37 untrained teachers. A total of 2,649 students were enrolled in the island schools and the student transition rate from primary level education to secondary education was at 108% (the rate exceeds 100% due to students' migration from other island schools). According to Census 2006, literacy rate for *Fuvahmulah* is 96% and women have a higher literacy rate (97%) compared to that of men (95%).

Education Attainment Levels

The majority of the population over the age of 6 has obtained primary education (47%). However, there is a huge drop in the number of persons attending secondary education and further. The percent of population who have received secondary education is 12% with 10% completing GCE O'Level examination. While further 6% completed certificate level education, only 0.3% of this population completed GCE A'Level examination. 0.5% of others include education attainment of Diploma level,

Degree and Masters Level. Figure 4.20 below indicates the levels of education attained by *Fuvahmulah* population over the age of 6.



Source: Ministry of Planning and National Development, Census 2006

Figure 4.20: Education attainment rate, Gn. Fuvahmulah, Census 2006

Employment and Economic Structure

Labor Force Participation

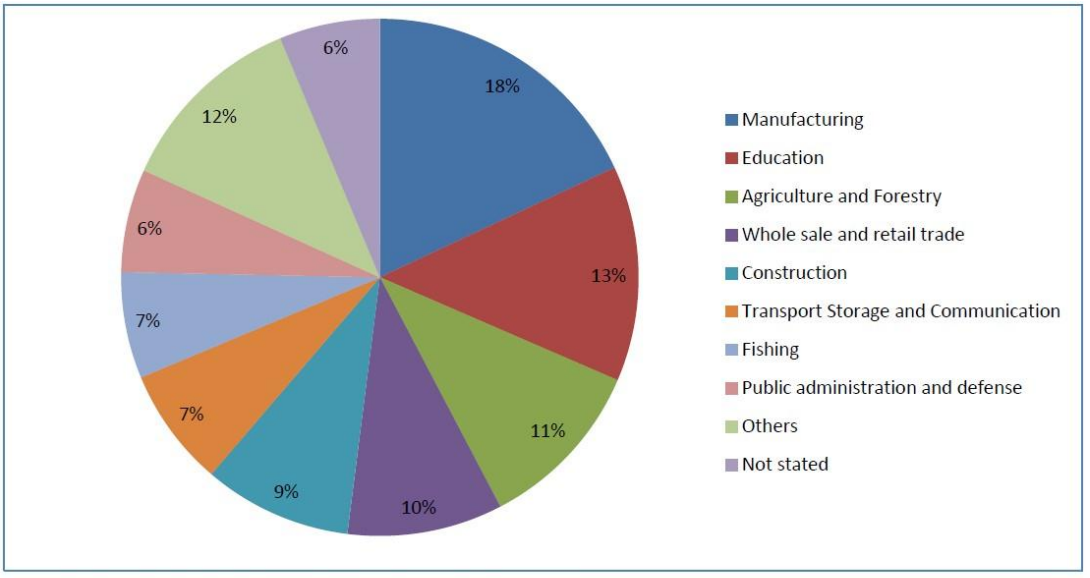
Labor force participation rate for *Fuvahmulah* population over the age of 15 years is 62.1%. More than half of the male population is engaged in the labor force with a rate of 69.1%; while labor force participation rate for women is relatively low at 56.6%.

Unemployment Rate

According to Census 2006, the unemployment rate for the population of Maldives over the age of 15 years is 16.2% while the unemployment rate for *Fuvahmulah* is much higher (25.1%). Overall, unemployment rate is significantly higher among females than that of males in *Fuvahmulah*. The total unemployment rate for men and women is 13% and 36.3% respectively.

Employment by Industry

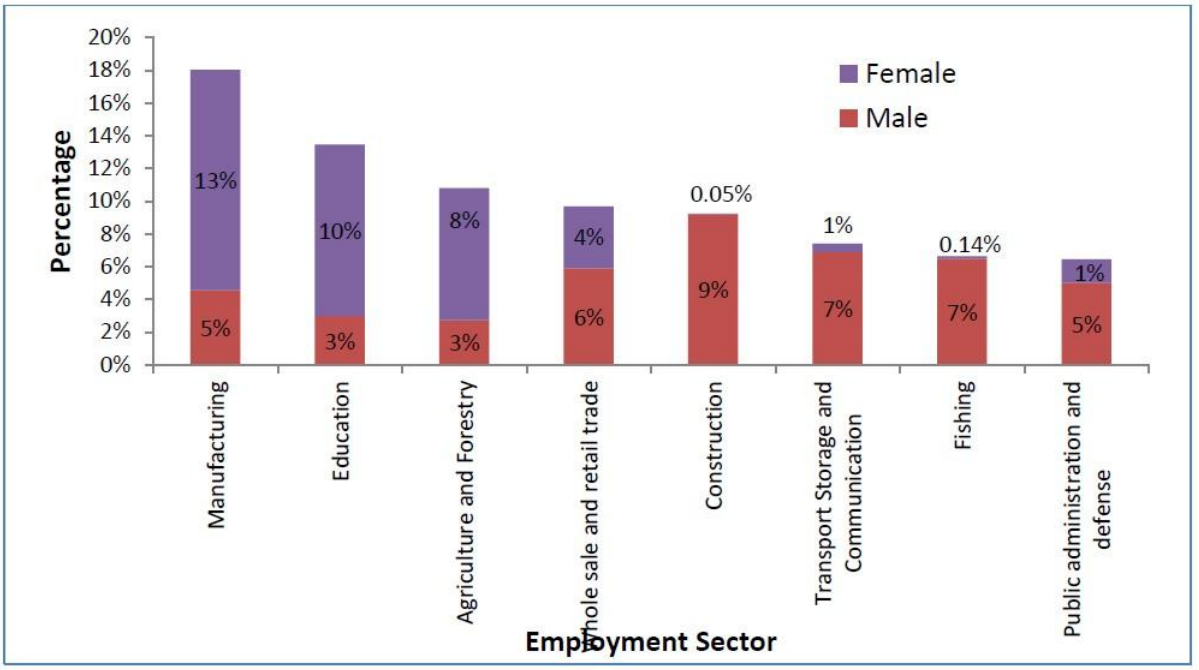
The four most common economic sectors in *Fuvahmulah* include Manufacturing (18%), Education (13%), Agriculture and Forestry (11%), Wholesale and Retail Trade (10%) and Construction (9%). Other active economic sectors also include Transport Storage and Communication (7%), Fishing (7%) and Public Administration and Defense (6%). Figure 4.21 below represents the most common economic sectors in *Fuvahmulah*.



Source: Ministry of Planning and National Development, census 2006

Figure 4.21 Employment by economic activity, Gn. Fuvahmulah, Census 2006

There are variations in economic activities with regard to sex as women and men are engaged in different economic activities. For instance, the percentage of share of women is seen more dominant in manufacturing and education sector. The two most common employment activities for men are Construction, Transport Storage and Communication and Fishing. Female labor participation is the lowest in Construction and Fishing industry while male labor participation is lowest in Education and Agriculture and Forestry. Figure 4.22 below presents the differences in the economic activities with regard to sex in *Fuvahmulah*.



Source: Ministry of Planning and National Development, Census 2006

Figure 4.22 Workforce by industry and gender Gn. Fuvahmulah, Census 2006

Fisheries, Agriculture and Tourism

Fisheries

According to the Ministry of Fisheries and Agriculture there were 98 fishermen in *Gnaviyani Atoll* in 2008. A total of 52 vessels were engaged in fishing including 28 mechanised *masdhoni*, 17 mechanized rowboats and 7 rowboats. Table 4.17 below present the total number of fish catch in *Fuvahmulah* Island in 2006 to 2008, the percentage share and percentage change over the previous year.

Table 4.17 Fish catch, Gn. Fuvahmulah, 2006 - 2008 (In metric tons)

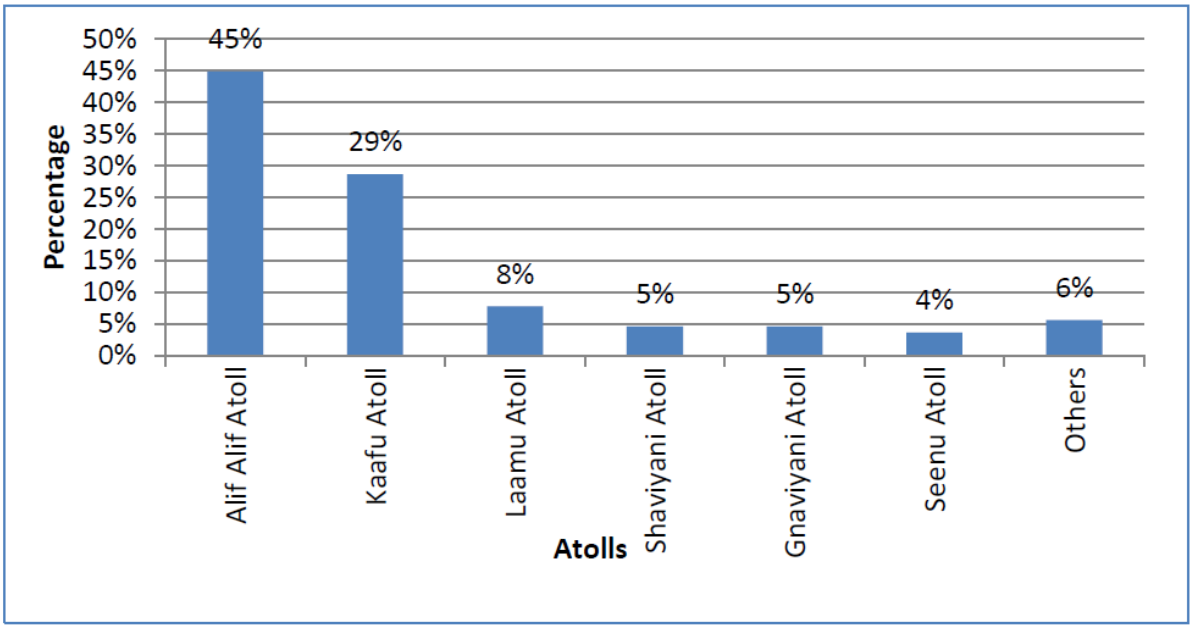
Fish Catch			**Percentage share**			**Percentage change over previous year**	
2006	**2007**	**2008**	**2006**	**2007**	**2008**	**2007**	**2008**
821.06	381.28	764.3	0.45%	0.26%	0.58%	-54%	100%

Source: Ministry of Fisheries and Agriculture, Statistics 2012

According to the table 6-2, there was a huge decline (-54%) in the number of fish catch between 2006 and 2007, however, in 2008 the number of fish catch went up again by 100%. Fish catch in *Gnaviyani Atoll* contributed to only 0.45% of the total fish catch in the country in 2006, 0.26% in 2007 and 0.58% in 2008.

Agriculture

Figure 4.23 below shows the percentage share of agricultural products traded in Male market by atolls in 2009. According to the Ministry of Fisheries and Agriculture, *Fuvahmulah* contributed to 5% of agricultural products traded in Male‘ in 2009 where as in 2008, *Fuvahmulah* contributed to 8% of the agricultural products traded in Male‘ markets.



Source: Ministry of Fisheries and Agriculture, 2012

Figure 4.23: Agricultural products traded in Male’ by Atolls, 2009

From 2005 to 2009, there has been a significant drop of 44% in the agricultural products traded in Male market that are produced by *Fuvahmulah*. Young coconuts, coconuts, bananas, yam, pumpkin, butternut and watermelons are types of agricultural crops produced in *Fuvahmulah*. In 2009, *Fuvahmulah* was the second largest producer of bananas in the Maldives next to *Seenu*
At
oll.

Tourism

Tourist resorts are nonexistent in *Gnaviyani Atoll*, as *Fuvahmulah* is the sole island in the atoll. *Fuvahmulah* is one of the most unique islands in the archipelago of Maldives due to the islands distinct natural features. In 2006, a 120 beds city hotel was leased for development to One and Half Degrees Maldives Pvt Ltd. It was never developed.

Income Poverty

According to the Maldives Vulnerability and Poverty Assessment, the human vulnerability index for *Fuvahmulah* is a little lower than the vulnerability index for the whole country (0.25 for Maldives compare to 0.21 for *Fuvahmulah*). Likewise, income poverty index for *Fuvahmulah* is also lower than that of the country average (0.1 for Maldives compare to 0.04 in *Fuvahmulah*). Hence in general, income poverty is less in
Fuvahmulah compared to the general population of the country. See Table 4.18 below for information on income poverty for Maldives and *Fuvahmulah*.

Table 4.18 Income poverty by locality in Gn. Fuvahmulah, NPA 2004

Locality	2004 Head count ratio, percentage of the population with less than MRV 15 per person per day	2004 Average income of the population with less than MRV 15 per person per day (RF)	2004 Income Shortfall of the population with less than MRV15 per person per day (%)	2004 Poverty gap index of the population with less than MRV 15 per person per day	1997 Human vulnerability Index	2004 Income Poverty Index
Maldives	21	10.6	29	0.06	0.25	0.1
Gnaviyani Atoll	10	10.9	27	0.03	0.21	0.04
Fuvahmulah	10	10.9	27	0.03	0.21	0.04

Source: Vulnerability and Poverty Assessment, Ministry of Planning and National Development, 2004

Health Services

The first Health Centre of *Fuvamulah* officially started its services on May 12, 1973 and since then there has been many developments in terms of the variety of services and infrastructure in the Health Centre. Given the increase in the population of the island and due to the geographical isolation of *Fuvamulah*, the government upgraded the Health Centre to a Hospital on June 11, 2001. Completion work for the new *Fuvahmulah* Atoll hospital building is planned by the Ministry of Health and Family and to be funded by the Public Sector Investment Program 2010- 2012 (Isles, Maldives).

Infant Mortality Rate and Life Expectancy at Birth

In 2004, according to the Maldives Vulnerability and Poverty Assessment II the life expectancy at birth for *Fuvahmulah* population is 75 years, while it was 67 years for the total population of Maldives. Infant mortality rate for Maldives based on the Maldives Vulnerability and Poverty Assessment II was 41 per 1000 live births where as it was only 15 per 1000 live birth for *Fuvahmulah* in 2004. This is a significant improvement in comparison to 1997 statistics where it was 62 per 1000 live births for the Maldives and 34 per 1000 live births for *Fuvahmulah*.

Infra-structure and Accessibility of Services

Households

According to the statistics of Fuvahmulah Atoll Council by February 2014 there were a total 2,722 households in the atoll. From the total households 2096 are used as living quarters while 626 are uninhabited. Total number of households in *Fuvahmulah*, according to Census 2006 is 1332, and 98% of the households were used as living quarters. Other types of households include collective living quarters and mobile units such as boats. Majority of the households in *Fuvahmulah* are occupied by the owner of the households (96%). However, there are a small number of households occupied by renting tenants (0.4%). Currently there are plans for development of 300 units of affordable housing in *Fuvahmulah* (Isles, Maldives).

Access to Household Goods and Services

Majority of *Fuvahmulah* households have washing machines and refrigerators (89% and 65% respectively). However, at the time of Census 2006, only 2% of households had air conditioning. Most of the households have bicycles and motor cycles (66% and 49%). A further 3% of the total households in *Fuvahmulah* also have cars or jeeps for transportation. Telephone and Television services are easily available in the atoll as majority of the households have mobile phone (81%), fixed line (64%) and Television (88%). Satellite services are also commonly used in *Fuvahmulah*. 46% of the households have access to cable TV connection and 24% of the households have access to computer. However, only 7% of households have access to internet and 2% have access to newspapers.

Power

Almost every household in *Fuvahmulah* city have electricity services available. According to Census 2006, 97.6% of households in *Fuvahmulah* had access to electricity. Out of which, almost 100% had their own generators.

Water Supply

According to Census 2006, majority of households in *Fuvahmulah* use rain water as the major source of drinking water (98% of households). Other types of drinking water used in *Fuvahmulah* include mineral water (0.2%), desalinated water (0.2%) and well water (0.1%). However, only 6% of the household use treated water while 94% uses untreated water for drinking. Major methods of treatment used for drinking water included boiling (3%) and filtering (0.5%). In 2005, under the project name _Boafen Hidhumai Mashroou-Phase I)funded by the International Federation of Red Cross and Red Crescent (IFRC), 2500 liters wate tank was provided for 1761 houses in the island.

Cooking

Majority of the households in *Fuvahmulah* use gas as the main source of fuel for cooking (86 %). Other sources of fuel used for cooking include firewood (7%) and oil (4%).

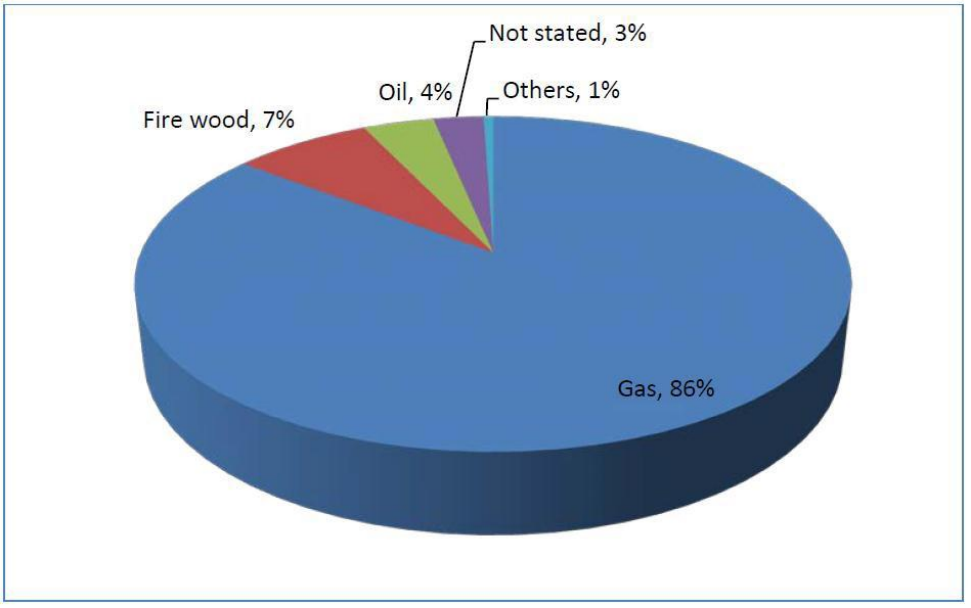


Figure 4.24: Classification of types of fuel used for cooking by total households in Gn. Fuvahmulah, Census 2006

Sanitation Facilities

92% of the total households in *Fuvahmulah* have toilets connected to septic tank. However, a few numbers of households (3%) use reserved compounds of the house (*gifili*) and 1% of household use toilet connected to sea. Currently, there are plans to develop water and sewerage systems in the island.

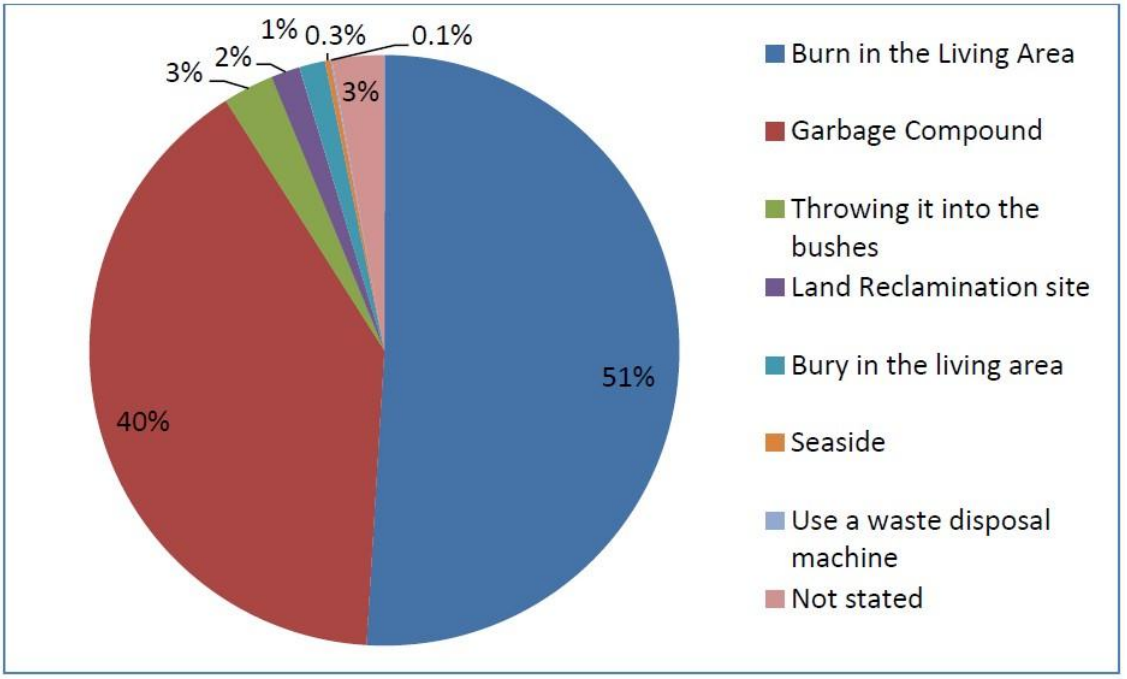
Waste Management

Majority of household in *Fuvahmulah* use the practice of burning in the living area for waste disposal (51%) or Garbage Compound (40%). A few percent of households also throw rubbish in to the bushes, seaside and land reclamation site. Figure 4.25 below indicates waste disposal practices in *Fuvahmulah*. At present, there is a waste site established on the island. However, the sites lacks the necessary equipment, manpower and other resources required to operate efficiently.

Key points arising from a workshop on environmental issues on Fuvahmulah in 2010 were (CDE Consulting, 2010):

- Waste management is among the most serious environmental issues faced by Fuvahmulah.
- No effective system for waste collection or management exists on the island.
- There is no Island Waste Management Centre (IWMC) on the island.
- More than 85% of waste generated on the island is organic waste, mainly green waste; soft green waste such as leaves is generally used as mulch.
- Food waste is sometimes buried in backyards.
- Other waste is dumped all over the island littering the beaches and roadsides.

Note: there is a rudimentary waste collection service operated by Southern Utilities Ltd. under contract to the Atoll Council. Collected and privately-delivered mixed waste is hand-sorted at a small, insecure compound near the main road on the west coast; buut there is no subsequent disposal and the wastes are accumulating.



Source: Ministry of Planning and National Development, census 2006

Figure 4.25: Household classified by way of waste disposal, Fuvahmulah, Census 2006

Transport and Communication

Gn. Atoll *Fuvahmulah* Domestic Airport operations began at the end of 2011. Also, there are plans for the development of *Gn. Fuvahmulah* roads funded by Abu Dhabi. In addition to this, plans are underway for *Gn. Fuvahmulah* harbor breakwater head repairmen funded by Public Sector Investment Program 2010-2012 under the Ministry of Housing and Environment. The two main communication services provided in *Fuvahmulah* are by *Dhiraagu* and *Wataniyya* service centers.

Gender Issues

Although Maldivian law, which is a combination of common law and Islamic *Shari'ah*, discriminates against women in some areas including property rights, inheritance and provision of legal evidence, Maldivian women are among the most liberated in South Asia and the Islamic world (ADB, 2007). However there are many obstacles facing their progress including geographic isolation, limited mobility, personal safety issues and increasing conservatism. These factors hinder access to work and training opportunities in the formal labour sector and the participation of women in the public sphere (UNDP, 2010). For example, women are under-represented in the national parliament with only 5 of the 77 seats held by women, and only 15% of senior officials and managers are women (UNDP, 2010). At the local level this is more pronounced with no women among the 15 Atoll Councillors and only 2 female councillors among the 167 Island Councillors (1 of them in Fuvahmulah Island Council).

Traditionally Maldivian women stayed at home and cared for the household and children. Men went out and earned the household income, typically by fishing. Women processed the catch by cooking and drying. Some fish were consumed in the household while excess catch was sold in the home island and in Male‘. With development in the 1970s and the mechanisation of boats fishermen were able to sell their catches to fish factories, reducing opportunities for fish processing by women.

Since the 1970s the development and expansion of tourism has opened up many new and diverse economic opportunities for Maldivians, but due to cultural norms and pressures women make up just 5% of the tourism labour force (ADB, 2007).

In the areas of education and health services and also jobs in the public sector there is no institutional discrimination (ADB, 2007). A lot of progress has been made in the area of health services, especially maternal and child health services. Access to basic health services is the same among both men and women (ADB, 2007). School enrolment rates are nearly the same for boys and girls in primary and secondary school. However, at the tertiary level cultural norms dictate lower educational attainment for girls (UNDP 2010) since few islands have tertiary schools and young women are now expected to stay at home and not travel to Male' or abroad for studies. Traditionally girls as well as boys used to be sent to Male‘ for higher studies, lodging at homestays (girls predominantly studied nursing and education, limiting their professional employment options). However, with many girls attaining low grades at school and with increasing social risks, only those that can afford to move to Male‘ with their entire family now go there for tertiary and higher education.

Women receive equal pay for equal work although there are fewer women in decision-making jobs, especially in sectors such as finance, tourism and economic development (UNDP, 2010). Women are mostly employed in the public sector and in manufacturing and also account for 70% of employment in the agricultural sector (ADB, 2007). Unemployment is more evident among women (24%) than men (8%) and a lack of childcare facilities makes it challenging for women to stay employed after they have children (UNDP, 2010).

Some commentators consider that as Maldivian society has become more affluent the need for all women to generate incomes has lessened. At the same time, since men are away from home for long periods of time leaving women to care for the family on their own, women's traditional gender role as home managers and child care providers has been reinforced (ADB, 2007). The domestic burden of women is high and there are limited employment opportunities for women in the atolls. The percentage of female-headed households in the Maldives is among the highest worldwide and these households are more disposed to poverty (ADB, 2007): almost half of all households are headed by women as men work away from the islands in Male', the resorts or at sea, and one sixth of women are either widowed or divorced.

There are no data on these topics disaggregated to island level so the position on Fuvahmulah and Hithadhoo remains conjectural. However, the limited available information and personal observations support this generalised analysis. There is some evidence that girls and women on Fuvahmulah have increased personal freedom and mobility compared to Hithadhoo (for example, there is very widespread use of motorcycles by girls and women), which may be due to the island's isolation and freedom from strangers.

Stakeholder Analysis

The main stakeholder categories on Fuvahmulah are listed in Table 4.22 and with some comments on features, interests, concerns, influence etc. The over-riding concern of island leaders is to develop and implement a strategy for development of the island that does not irreversibly compromise the island's natural resources and "way of life", whilst ensuring sustainable and equitable economic benefits for the residents.

Table 4.22: Stakeholder Analysis, Fuvahmulah

Stakeholders	Main Features / Characteristics	Views / Interests	Worries / Fears	Experience in Wetland Management	Power / Influence
National level: MoHE EPA	Line ministry, major responsibilities Environmental regulator	Want to prepare islands for climate change; responsible for land use plans and housing Preparation of practical project; protection of biodiversity; enforcement of regulations	Scale of responsibilities; low capacity especially away from capital; government cutbacks	Limited; held by individuals rather than as corporate knowledge	Significant influence on official planning; little influence on day-to-day decisions on the ground
Island level: Atoll Council Island Council / Ward Councils	Island-level governments with both strategic and day-to-day responsibilities	Strategic development of the island; day-to-day management of services and issues	Inappropriate development; degradation and/or irreversible loss of natural resources; low technical capacity for planning and management	None	Significant, especially under new decentralised approach; limited by lack of budgets and low technical capacity
Local residents	Relatively affluent; many female-headed households; significant gender division of roles; significant generational differences	Want economic development and employment opportunities; youth want more freedom	Social problems due to changing society and expectations; youth disenchantment and unemployment	None, except management of taro fields at edge of wetlands	Little, but personal actions have high cumulative impacts on the wetlands
NGOs and CBOs: Society for Environmental Awareness Others	Depend on a few active individuals	Varies according to organisation - education, health, social services, environmental protection, economic development	Increasingly materialistic society; increased social problems; lack of budgets and technical capacity	None	Potential for influence at local level

3.2 Addu with special reference to Hithadhoo

As many of the proposed activities are concentrated on Hithadhoo of Addu City, the data and related information has been presented in reference to Hithadhoo.

Land Use

Hithadhoo Island Land Use

The existing land use plan and the new land use master plan of Hithadhoo Island is presented in Appendix E. The Socio-economic risk assessment report (UNDP, 2009) summarizes the main features of the present land use as below.

- Hithadhoo is the second largest inhabited island, in terms of its land area, and second largest population centre in the Maldives. It contains large areas of habitable land as well as wetlands. Significant wetland and reef areas have already been reclaimed to accommodate demand for new land.
- The population density of Hithadhoo is 18 persons per hectare.
- The settlement footprint covers 65% of the total habitable area. Hence, a large portion of the land available is currently being used for housing, economic establishments and socio-economic infrastructure on the island.
- Traditionally, the housing plots allocated in Hithadhoo are quite large, with some plots in around 10,000 ft^2. This has left the old settlement areas with large areas of underutilised land. Some of these

plots are uninhabited as well, as their owners have migrated to another islands, namely Male'. Newly allocated plots size has been revised to 3000 ft^2.

- The newly reclaimed land from the reef has become the new industrial and commercial zone of the island. The local harbour is also located in this area.
- There is no Central Business District (CBD) or a central commercial zone on the island. Most establishments are distributed along the main road. The highest spatial concentration is close to the Regional Hospital Zone.
- The key economic infrastructure on the island are the harbour, Addu Link Road, communications infrastructure, commercial port, ice plant and fuel supply. Most of these facilities are located within 100 m of the coastline.
- Majority of the land is utilised for housing and urban services.
- Land allocation in the past did not consider land for economic activities. It was only recently, after land reclamation, that land was identified specifically for commercial purposes. Prior to it, land was only allocated as housing plots and business establishments had to rent or utilise fragmented housing plots. Hence, about 80% of the businesses are established within housing plots.
- Backyard agriculture is practiced across the island and open agricultural plots are located in the northern and southern end of the settlement.
- The development of the Addu Link Road has helped to develop new business establishments along it.

Wetland Area Land Use

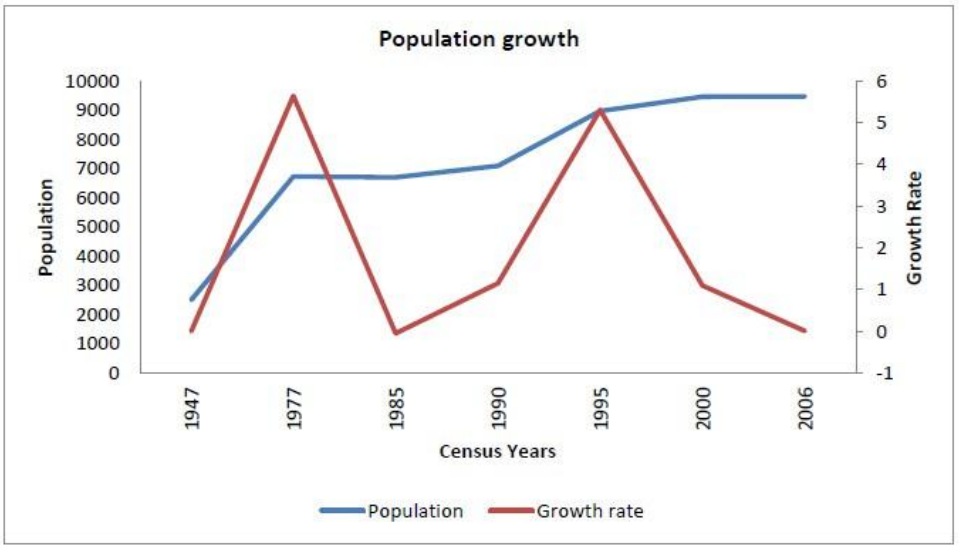
The land use patterns in wetland area are summarized in Appendix F. The following patterns of land use are observed.

- The wetland area is officially a declared protected area and therefore the City Council does not allow any legal construction of buildings or lease for commercial activities, except for agricultural purposes.
- Land has been leased for agricultural purposes in the past but the council has now ceased the activity. Plots already allocated for agriculture continue to utilise them. However, the ownership has unofficially changed for a number of these plots including unofficial subdivisions.
- Access to the farms is through the protected area, which can involve the use of trucks for transportation activities.
- There are a few buildings constructed and being constructed on site, which has been reported to have been constructed for accommodation purposes. However, the Addu City Council maintains that no construction is allowed in the Protected Area, even on the farmlands, except for small sheds.
- The Koattey area is used as a picnic area by locals. The site is accessed using motorcycles and four wheeled vehicles.
- The northern end of Hithadhoo Island reef and the Koattey area is used for bait fishing by locals.

Socio-economic Environment

Demography

The total registered population of Hithadhoo in December 2008 is 14,102. The total enumerated population from Maldives population and housing census of 2006 is reported as 9,465 (Ministry of Planning and National Development, 2008). There are 4,365 males and 5,100 females (MPND, 2008) with a male-female sex ratio of 0.85.



Source: (Ministry of Planning and National Development, 2002, Ministry of Planning and National Development, 2006)

Figure 4.34: Hithadhoo population and growth rates between 1947 and 2006

The annual population growth rate at present is estimated at 0.01 and shows a controlled growth. However, over the last 80 years population growth has varied dramatically peaking at 5.7 between 1947 and 1977, and at 5.4 between 1990 and 1995 (sees Figure 4.34). The first event was related to the presence of the British Royal Air force base and associated economic activity. The second growth is linked to the development of the secondary school (Muhibudhdheen School) in Addu Atoll and the return of number of migrants to Male'. The period between 1977 and 1985, and 2000 and 2006 showed the lowest growth rates. The first instance was related to the closure of the British Base and the rapid emigration to Male'. The second instance is both associated with emigration to Male' and lower birth rate.

Population Structure

The general structure of the population is shown in Figure 4.35 below. The dependent population is at 43% of the population, which comprises of 37% children and 6% elderly. The working age population (between 16 and 45) comprise of nearly half the island population with 44%. The sex ratio of working age population is 0.7 compared to the 1.1 and 1.2 for children and the elderly. As noted above, this reflects the temporary out migration of men for employment outside the island.

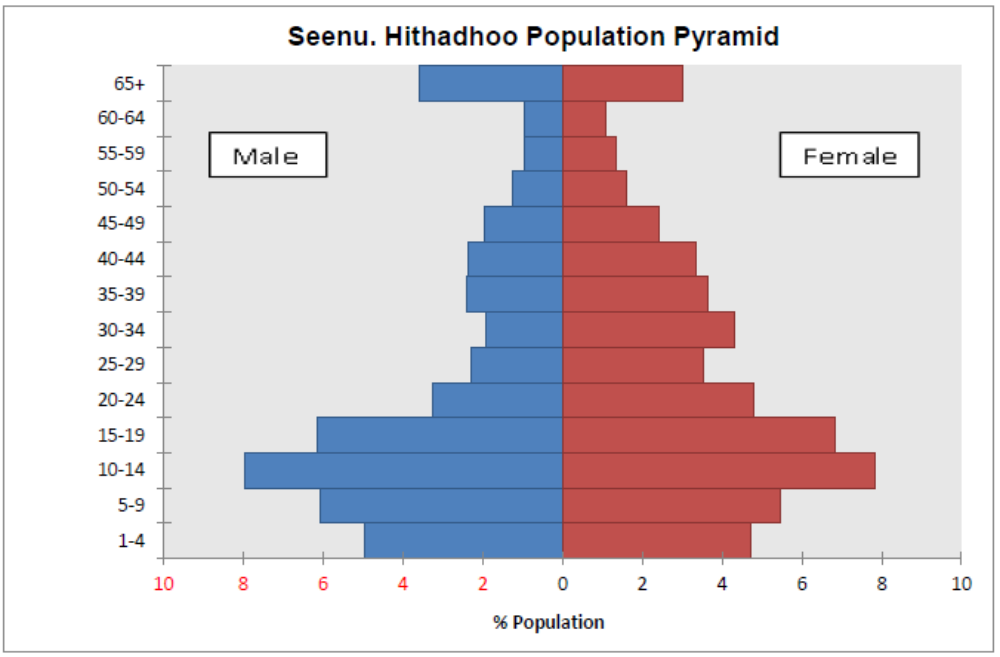


Figure 4.35: Age structure of Hithadhoo population

Migration

The Census 2006 estimates the population born outside Hithadhoo in 2006 at 686 persons (7 % of total population). It shows that most migrants are from the southern atolls - Seenu, Fuvahmulah, Gaafu Alifu and Gaafu Dhaalu Atoll (see figure 4.36 below). In terms of individual islands most migrants appear to come from Fuvahmulah, S. Meedhoo, G.Dh. Thinadhoo and other islands of Seenu Atoll (see figure 4.37). It is also noteworthy that Hithadhoo currently has population born in a number of other islands across the Maldives.

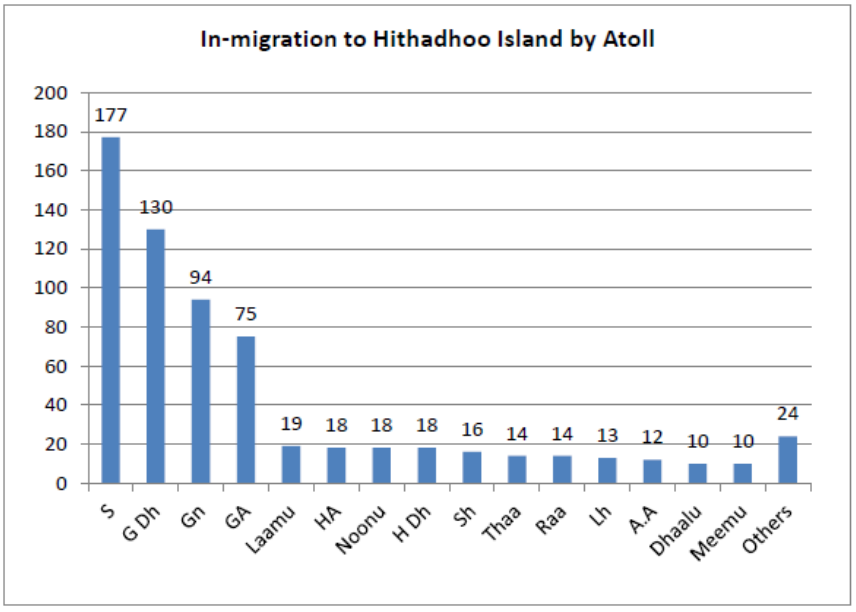


Figure 4.36: In-migration to Hithadhoo – Nationwide migration

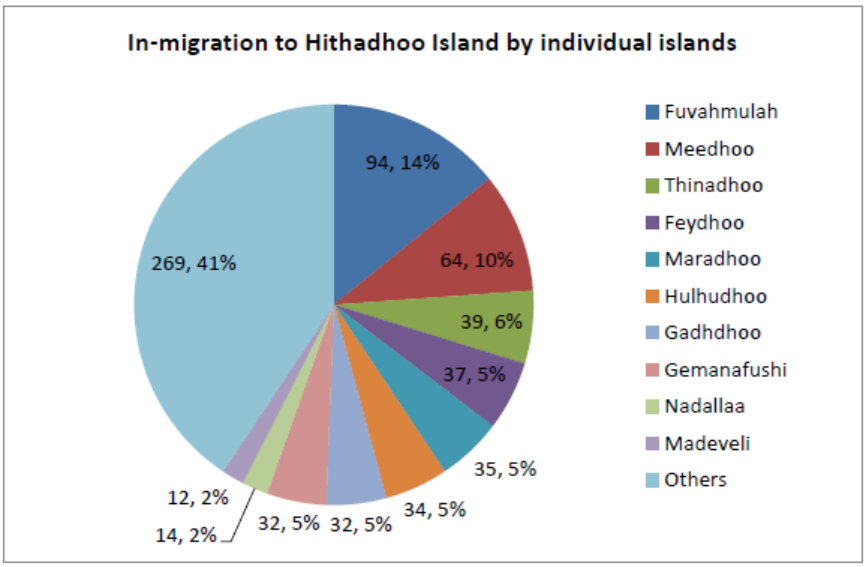


Figure 4.37: In-migration to Hithadhoo– Island level migration

Community Structure

In the Maldives, households are generally based on the extended family system. It is quite common to find the extended family living under one roof. The family authority often rests on the patriarch of the family, usually the eldest son in the family. He carries the responsibility of overseeing the affairs of the entire family when enough experience and maturity has been shown in family duties. A key feature of the island society is that it respects family and communal values. Significant amount of caring is shown towards each other by members of the family and strong bond exists between large family groups. At times of difficulty, they almost always seem to support each other.

Organizations and Networks

Hithadhoo has a number of Governmental and Non-Governmental organizations. The Government level organization is now comprised mainly of the Addu City Council, which is an elected body tasked with undertaking the role of a local government. According to UNDP (2009), there are about 16 NGOs covering a wide range of development and recreational activities at present (see Table 4.32).

Table 4.32: List of Community Organizations, NGOs and their main activities (Source UNDP, 2009)

Organization	Founder	Aim/ Objectives
Addu City Council	Government / elected council	To perform the functions of a local government
Southern Lights Society	Non-governmental	Film and drama production. Music and entertainment. Develop cultural and Dhivehi literary activities.
United Friends Club	Non-governmental	Serve the country in religious and sports related activities.
Hithadhoo Illuminated Stars Club	Non-governmental	Assist in island development activities. Promote and develop sports among youth Create awareness on development and environmental issues.

Organization	Founder	Aim/ Objectives
Dhivehi Ekuveri Zuvaanunnge Jamiyya	Non-governmental	Revival and Enhancement of sports amongst youth. Youth empowerment and assist in projects related to youth health. Environment protection.
Seenu Teenagers Recreation Society	Non-governmental	Promoting sports and sports values amongst youth. Organize sports and recreational activities. Work for protection of environment.
Maavahi		Environmental awareness and protection.
Society of Voluntary Impartment for Education and Women		Work with less disadvantaged children in assisting with education. Work for women‘s development.
Addu Sports Club		Development of sports. Identifying and addressing youth related issues.
Youth Association of Seenu Hithadhoo Initiative		Youth empowerment and development.
Addu Women‘s Development Initiative		Enhance the economic and social well being of women
Parents Association of Addu		Working for promoting good values amongst students. Student development and youth empowerment. Train
Hithadhoo Youth Association		Promoting good social and religious values amongst youth. Youth empowerment Assist in island development activities.
Medhuvalu City United		Promote and enhance sports amongst children and youth Identifying youth issues and social issues and
Take Care		Promote and enhance social, cultural issues Revival and protection of culture. Work for Youth development. Work for children‘s development.
Eedhigali Ornithological Society		Research and study about the birds in Eedhigali area and other protected birds. Study of migratory patterns of birds migrating to
Concept Earth		Environmental awareness and protection.

Housing

The Census 2006 reports the number of households in Hithadhoo as 1486. Some of the existing buildings are vacant, however. The number of inhabited households has grown rapidly following the recent returning populations. The average household size in Hithadhoo is 6.4 persons. The plot size varies and the average size is estimated around 5000 ft^2. The demand for housing plots is increasing rapidly and there is a rapid decline in available land. At present, according to the locals, there is a shortage of land for housing.

Economic Base and System

According to UNDP (2009), Hithadhoo should be considered the largest island economy in the south Maldives. It has the largest population outside Male‘ and enjoys the infrastructure privileges afforded to regionally strategic islands, such as the Regional hospital, secondary schools and commercial port.

Hithadhoo's economy is based four basic sectors: fishing, manufacturing, wholesale and retail trade, and tourism (UNDP, 2009). Fishing is the dominant industry and involves fishing and fish processing activities. Manufacturing activities mainly involve food processing, tailoring and carpentry. Whole sale and retail trade has been considered a basic sector since Hithadhoo is a major re-exporter of various products to nearby islands (UNDP, 2009). Tourism plays a leading role in household income through remittances from temporary migrants in resort islands.

There is no dominant employer on the island, since there no major manufacturing investments on the island. The key employers are the Government (civil service), fishing vessel owners, construction companies and traders.

Hithadhoo's economy is strongly linked to Male', Fuvahmulah and the islands of Seenu Atoll. The presence of the regional hospital and secondary school seems to provide opportunities to expand trade activities targeting temporary visitors from nearby islands. The Addu Link Road plays a significant role in linking the local economy to other islands along the link road (UNDP, 2009).

Employment and Occupational Structure

The total number of economically active population is 3300 (MPND, 2006). Amongst these, 2367 are employed and 933 are unemployed. The economically not active population is reported as 2550 and the labour force participation rate is 55%. The unemployment rate is reported as 28%, indicating the large number of voluntarily unemployed persons on the island. Much of the voluntary unemployment is amongst the female population and students aged 19 and under.

In terms of the employment structure, much of the employment is in public administration (40%), manufacturing (14%) and wholesale and retail trade (13%) - see Figure 4.38 below. Together, these three sectors account for 67% of the employed population. The fishing sector comprises 8% of the working population. Other non-basic service sectors comprise 18% of the working population.

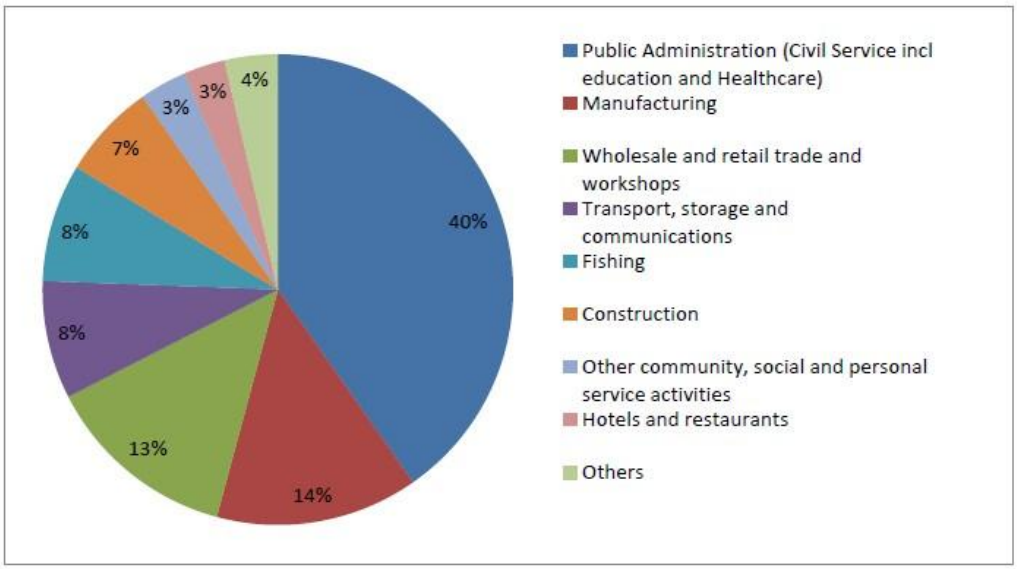


Figure 4.38: Proportion of employment by economic activity

Historical and Cultural sites

The following cultural and historical sites within Hithadhoo Island and the protected area are shown in the map in Appendix H. There are a few ruins and of cultural and historical significance within the protected area but they are note properly documented or researched. Only anecdotal information is available and differs between people interviewed. The main sites of cultural and historical significance within the protected areas area:

- **Ruins of a fort:** located on the northern end of the Protected Area, it has been identified by the British archaeologist H.C.P. Bell in 1922 and reported in his monograph from 1940 (see Figure 4.39).
- **Gravesite next to fort:** No research is available on these graves but locals indicate that Koattey area was once inhabited and the gravesites belong to an ancient cemetery for the inhabitants of the area.
- **Ranin Hanaa Fengandu or the Queen's Pond:** While the formation of this large pond is natural, the placename attached to it indicates that the area was of importance in the past.
- **Light house at Koattey end:** The light house has been linked to the presence of the British in Gan island during World War II.

Figure 4.39: The ruins of the fort and marked grave within the protected area (Source: Hidria/Aquatica)

Agricultural Practices

Agriculture is practiced in a stretch of 8 Ha in the middle of the protected area. Records from the Atoll Council indicate that about 32 plots have been allocated to various individuals on a lease- hold basis. Field surveys were conducted in the area but some plots were not accessible. At least six plots could be readily identified. It was difficult to undertake the field surveys and consultations with farmers working in the area for the following reasons.

- The requests for public meetings were not attended by the farmers.

- The existing farmers are in some cases reported to be not the head lease holder. Tracking the sublease holders has been difficult, as there is no official documentation.

- Some plot owners often do not work or visit the farm, and in some cases do not live on Hithadhoo Island. Only foreign workers were found on some of these farms and they either do not have information about the farming activities or have been told not to communicate with authorities regarding farming activities.

The following sections summarize the findings of a questionnaire survey and interviews carried out with the willing farmers, nearby households, City Council and individual members of the public. Given the

sensitivity of the subject matter (farm related issues were identified as sensitive by Addu City Council), no names were recorded. A total of 37 participant's views were recorded.

Land tenure: As noted above, 32 plots have been officially leased for agriculture in this area. Records show that the 32 plots were leased to individuals from 21 houses (i.e. some houses have multiple plots under individual names). Among these four were lease in 2006, six on 2007, two in 2008 and the rest in 2009. No plots have been leased since 2009 and the first City Council ceased leasing land as this is a protected area. The City Council estimates that a total of 77,850 sq m have been allocated under this process. However only a very few plots have an official handover letter and most plots do not have any documentation.

Crop types: A wide variety of fruits, vegetables and ornamental plants are grown. An inventory of all the trees was not possible as some plots were not accessible. In general the vegetable varieties included, cucumber, tomato, chilli, egg plants, lime, etc.. Fruits included water melon, honey melon, papaya, rock melon etc.

Existing practices: The current practices were observed to be unsustainable in the protected area. Farmers use numerous agrochemicals products (fertilizers, pesticides) that are likely to cause chemical pollution to the groundwater, the soil and the surrounding aquatic and marine ecosystems. In most cases they are not aware of the products they are using and were being used based on word- of-mouth recommendation. None of the products has local language labels and in some cases, lacked English language instructions as well. Usually, the local supplier scribbles some instructions on the side of the bottle with a marker when farmers first buy a product. Water quality results presented earlier in this chapter clearly shows the effects of these chemicals on the groundwater and subsequently on the plants grown here.

Planting and harvesting is adhoc and is based on demand. The most active period is just before Ramazan period where demand for vegetables and fruits increase in Addu City as well as the rest of the country. Almost all produce is sold within Addu City. Composting is not practiced. Farms are separated by fences (made from steel, coconut thatch or tarpaulin) towards the roads. Separation between farms are often based on green fences or lining of plants. The main fertilizer used in ―cow dung‖ imported in packs of 10-20 kg. There are wide variety of pesticides including pyrazoles and organophosphates. There is no safety equipment on the farms. No safety gear is used in handling pesticides and fertilizers. There was evidence that they do not fully comprehend the dangers of these chemicals. Equipment, fertilizers and pesticides are stored in a small shed in most farms. The conditions of these sheds are poor in those surveyed. Waste management methods are poor. All green waste is stored on the side of the farms and are rarely transported out to the waste management centre. The farmers claim that all empty pesticide cartons are disposed to the waste management centre, but empty cans and bottles can be seen littered around the area.

Recreation

The protected area is regularly used for recreational purposes. Nature, landscape and outdoors enjoyment seem to be the most common recreational activities carried out by local people at any time. The most common form of recreation is riding motorbikes up and down Koattey tip. The footpaths around the wetland are also frequently used for walking as well as bike rides. Picnicking is very common during the weekends particularly on the weekends and public holidays. It is generally a family or a group activity. Koattey tip is one of the preferred locations. Recreational fishing is also a common activity on the Koattey tip. The main impacts from these activities the increased waste problem and lack of system to collect and transport waste to the waste site. Most people leave their rubbish behind. In Hithadhoo, there are a few people who are very keen on birds and they regularly visit the kilhi for bird watching and nature photography. There is also an NGO called Hithadhoo Ornithological Society.

Infrastructure Development

A number of major infrastructure projects have been recently completed, are underway or are about to be undertaken. The impacts of such projects on the integrity of the wetlands and their potential effects on flooding have largely received only cursory attention in their respective EIAs. However, some of these

projects have been the subject of Environmental Impact Assessments which contain sections relating to effects of the project on surface water run-off management, flooding and effects on the wetlands.

Addu Link Road

The Addu Link Road is a 14-kilometre section of island road and causeway which links Hithadhoo, Maradhoo, Maradhoo-feydhoo, Feydhoo, and Gan which was constructed in 2001. On Hithadhoo the road passes along the eastern, the inner, shoreline of the island. Informal interviews with residents in the vicinity of the Link Road have commented that the higher level of the road is acting as a barrier to free drainage of surface water during heavy rains. A risk assessment study carried out by UNDP[xv] concluded that the main impacts from human induced activities have come from improper land reclamation on the eastern side of the island. These include lack of consideration for island topography and the capacity of the artificial drainage system established for the Addu Link Road, which has been unable to function properly.

Convention Centre

A Convention Centre is being constructed in the southern part of the Maa Kilhi, within the area shown on the land use plan as ‗future institutional'. It is planned that the Centre will be completed in time for the SAARC Summit to be held towards the end of 2011. An Initial Environmental Examination (IEE) of the Convention Centre was carried out in January 2011[xvi]. As part of the Examination a groundwater assessment was conducted to assess the ambient conditions of groundwater at the proposed project location. Long term available weather data was obtained from the weather station at Gan International Airport. The data sets were used to develop a regional model in ArcGIS to assess the vulnerable areas of the island during both monsoons, thus helping the IEE team to assess the vulnerable areas of the island for flooding. No details of the results of the modelling are presented in the IEE. The landscape design of the Centre calls for it to be surrounded by water, but no details of how this will be achieved or maintained are given in the IEE. The land use plan indicates a future road to the immediate south of the Convention Centre which forms the boundary between it and the wetland.

Paving of Roads on Hithadhoo. Addu City

The paving and improving the condition of the Ghazee Magu has always been a priority of the Government. As Addu City is preparing to host the SAARC Summit end of year 2011, it was decided to pave the Ghazee Magu and Medhe-aari Magu. The two roads had been identified for development for many years by the community of Hithadhoo and other stakeholders. An Environmental Impact Assessment for the proposed paving of the two roads[xvii] has been carried out.

The design consultant submitted and presented to the Ministry two options of asphalt paving *vs* concrete paving blocks for the driving surface at two stakeholder meetings held in August 2010. On both occasions, having considered the pros and cons presented, the Ministry and the stakeholders decided on the option of using asphalt paved surface as the driving surface. An asphalt surface, when compared with a concrete surface, generates relatively low noise, is relatively low cost compared with other paving methods, and has perceived ease of repair. The disadvantages are that is has less durability than other paving methods, less tensile strength than concrete, the tendency to become soft in hot weather and give rise to pollution, in the form of polycyclic aromatic hydrocarbons (PAH), of soil, surface water and groundwater.

The EIA indicates that the surface runoff from the road will be recharged to the aquifer through the use of soakaway pits. The design of the pits has been such as to ensure easy maintenance and to ensure recharge rates match normal rainfall intensities. The design includes an additional system to address the issue of flooding in the event of unprecedented rainfall. This feature, a dry main, would be used in the event of extended rainfall where the ground has become saturated and cannot absorb any more water. The emergency services would connect relief pumps to valve points on the main and discharge the excess water directly into the Eidhigali Kuli and Maa Kuli at either end of the Ghazee Magu. While the scheme proposed for managing runoff and preventing flooding would appear to be feasible, the fine clays generated on the side roads which would be carried onto the main road would be unlikely to be removed by standard filter media in the infiltration pots and would lead to blinding of the aquifer being recharged.

Road Development Adjacent to Maa Kulhi

A road development project to construct two roads which will link the Convention Centre area to Medhe-aari Magu (see Section 10.2.4 for details of plans for improvements to Medhe-aari Magu) is on-going. This will entail constructing two roads within the Maa Wetland thereby creating a ‗box' around the wetland. This project and the two previous projects will create a road system which will extend almost the whole length of the island and, at the time of writing, contain no structures to allow the free flow of water from the west side of the road into either the Maa Kilhi or Fehele Kilhi. It will thereby increase the risk of flooding in the area to the west of the road system.

Sewerage Project.

It is understood that Southern Utilities are investigating the possibility of laying a sewer system on the island. The details of the type of sewer system, whether gravity or vacuum, the level of treatment and route for disposal of the final treated effluent have not been determined. The latter issue is important with regard to the impact of the process on the extent of recharge of the aquifer and hence thickness and quality of the freshwater lens.

4 IMPACT IDENTIFICATION AND PROPOSED MITIGATION MEASURES

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4.1.1.4 Potential social impacts

The potential social impacts of implementation of CBWMP are presented in Table 5.2.

Table 5.2: Preliminary Assessment of Potential Social Impacts and Issues and Recommendations for Mitigation

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
Component 1: Wetland Conservation		
1.1 Community-based wetland management		
(a) Development and Implementation of Community-based Wetland Management Plans (CBWMPs)	• Wetland management is both legally and in terms of residents' perceptions a government responsibility. A project focus on "community-based" planning risks diverting attention away from the government stakeholders who are critical to any form of practical management plan.	• Re-focus this Sub-component on Wetland Management Planning and Implementation rather than Community-Based Planning and Implementation.
(i) Demarcation of wetland areas and mapping of existing resource use in the wetland areas.	• On Fuvahmulah a participatory demarcation exercise has just been completed by the EPA in cooperation with councillors and residents, in connection with identification and adjustment of the boundaries of the two wetlands, which have been declared as protected areas. This exercise has raised awareness and provided information. • Adjustment of the declared boundaries may be necessary if the approved Land Use Plan is adjusted to remove the current proposal for perimeter roads to be built within and re-define the existing wetland areas. • Demarcation provides certainty to local residents and users, provided they have full information. • Existing resource use is almost entirely (a) recreational, and (b) agricultural (taro): see Section	• Ensure that mapping and demarcation are fully coordinated with the EPA and the protected area gazette process. • Review the Land Use Plan to consider deleting the proposal to build roads within and around the wetlands. • Ensure that any future protected area zonation and management plan allows continued use of wetland edges for taro.

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
(ii) Sensitization and awareness building activities to engage the key stakeholders in the participatory process.	• These activities are essential to ensure an effective planning process and local "ownership" of the results (necessary for institutional sustainability).	• Use inclusive techniques to engage the stakeholders in the planning process, including operating through active NGOs such as SEA and within the educational system.
(iii) Prevention of unplanned reclamation, illegal waste dumping, contamination of surface water, unsustainable harvesting of mangroves and other activities which are detrimental to the wetlands.	• See comments under (v) below.	• See comments under (v) below.
(iv) Implementation of one CBWMP, for example:		
• Controlling solid waste disposal	• At present there is relatively little use of the wetlands for dumping solid waste, but construction of the roads shown on the approved Land Use Plan would dramatically change access and probably result in significant pollution. • Waste management can only be effective if tackled on an island-wide basis, which cannot be done within the scope of this project. There is no mandatory system for the collection and disposal of any form of solid waste. Collection, treatment and disposal processes are rudimentary.	• Ensure the wetland management plan includes a strategy to limit new road access to the wetlands. • Include waste dumping in the plan's information, education and communication campaign.
• Creation of green belts	• Assuming that this means the creation of a special use zone around the wetlands and/or the planting of trees, no negative impacts are foreseen - unless taro growers are displaced.	• Ensure that any wetland zonation allows for continued use by householders of established taro field.

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
• Zoning	• The EPA's current protected area demarcation and declaration exercise assigns both wetlands to two IUCN protected area categories[xix], mostly IV (Habitat/species management area) but with core areas of 1a (Strict nature reserve). Management of Category IV areas aims to protect identified habitats and species, generally with active management and without sustainable resource use. If the protected area boundaries include some taro fields, then there will be a theoretical possibility of loss of use if zoning does not permit continuing agricultural use. • Discussion with concerned EPA staff indicates that the formal protected area boundaries will *exclude* the taro fields which ring the wetlands.	• Ensure that the wetland management plan allows for continued agricultural use existing taro fields. • As a hydraulic and biological system, the wetlands include the taro fields. Management plans should encompass these perimeter areas as well as the inner areas of the wetlands. If formal protected area status is extended to cover the whole of each wetland system, an appropriate IUCN category would be VI (Protected area with sustainable use of natural resources).
• Fencing	• Fencing is intended to exclude the public from access to certain areas (or under certain circumstances, as a water safety feature). It would have no negative social impact if it is installed and maintained as a result of a transparent and participatory planning process.	• Ensure that fencing is only installed after transparent and participatory planning, is intended to control an identified behavioural issue, and is regularly inspected and maintained.
• Regulating cropping	• See comments under "zoning" above.	• See comments under "zoning" above.
• Regulating sand mining	• Not relevant to this project on Fuvahmulah since there is no sand mining from the wetlands.	-

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
• Preventing contamination of surface water	• It is assumed that this refers to (a) contamination from cess pits and septic tanks, and (b) contamination from agrochemicals. • Prevention of contamination from sewage is a very large task, outside the scope of this project (it is understood that a centralised sewerage system for the whole island has been designed and will soon be installed). • Few if any chemicals (either fertilisers or pesticides) are used on subsistence taro and there are no data on water contamination from the taro fields on Fuvahmulah. Pesticides are used (and misused) by farmers in areas away from the wetlands. Any controls would have social benefits through reducing hazards to both users and consumers, but the scientific resources to follow up on this topic are unlikely to be available within the scope of the project.	• In the wetland management plan(s), include as a medium term activity research on water quality and cooperation with MoFA on improving pesticide use and safety.
• Preventing unsustainable harvesting of mangroves	• Not relevant to Fuvahmulah since there are no mangroves in the interior freshwater wetlands.	-
• Other	• Dhandimaghi Kilhi is an important, safe freshwater swimming resource for residents. Improvement of the existing access point would bring many benefits, especially but not only to children learning to swim.	• Include, as a priority, design and implementation of minor works to improve the attractiveness and safety of the existing access point to Dhandimaghi Kilhi (e.g. parking area, picnic tables, safe steps into water, hard bottom underwater for, say, 20 m from access point)

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
(b) Pilot on eco-tourism on Fuvahmulah	• "Ecotourism" is defined by The International Ecotourism Society (TIES) as "*Responsible travel to natural areas that conserves the environment and improves the well-being of local people*". It has a high social content and is not the same as nature-based tourism. • There is *no* current potential for off-island wetland based tourism on Fuvahmulah, even when the airport is completed. • Any tourism development on Fuvahmulah would be dependent on branding the island and marketing the new brand, which would have to be significantly different from other tourism options in the Maldives (for example, home-stays to experience "the real Maldives"). • Both Councils on Fuvahmulah have requested the development of a tourism vision or concept.	• Revise this activity to focus on development of a tourism concept for the island based on a realistic assessment of the domestic and international tourist markets in relation to existing and possible attractions on the island.
(i) Development of basic infrastructure for eco-tourism (nature trails, observation hides, interpretation centre, visitor convenience services).	• Disappointment if facilities are built but economic benefits from tourism do not materialise (see comments above). This scenario is considered likely in the absence of an identified tourist market and business plan - and a full clean up of the island to remove all solid waste.	• See comment above.
(ii) Training of local community nature guides.	• This should only be done as part of a comprehensive tourism development package, otherwise the training will be wasted and false expectations raised.	• See comment above.
(iii) Supportive communications (IEC programmes and materials).	• See comments above.	• See comment above.

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
(c) Documentation of Best Practices on Community-based Wetland Management		
(i) Development of best practice notes on community based wetland management based on experience and lessons from this project and others in the Maldives.	• See comments at 1.1 (a) above on the validity of the community-based wetland management concept. • Best practice research from other locations is necessary as an input to the management planning exercise.	• Consider study tours to other wetland and/or protected area management sites and projects in the Maldives for key individuals from Fuvahmulah, as part of the planning exercise.
(ii) Review of existing policy documents through a stakeholder consultation process to identify scope for strengthening them from the perspective of community involvement in wetland management.	• This sub-activity refers to the National Wetland Management Strategy and Action Plan (NWMSAP), 2003 (draft). Carrying out a stakeholder consultation process merely to identify a scope for strengthening the document, but not to actually improve the document itself, is a very low target.	• Consider revising this sub-activity to include an actual revision of the 2003 draft.
(iii) Dissemination workshops.	• Dissemination workshops are useful if the product is practical and the target audience able to use the knowledge gained. The project timescale is very short, and it may not be possible to draw significant lessons drawn from project implementation before the end of 2012.	• Ensure that resources are available for independent, objective, review of the project at least six months before it terminates (i.e. June 2012), so that lessons can be documented and a dissemination process designed and implemented.

Project Component and Anticipated Intervention	Social Issue and/or Potential Impact of Intervention	Preliminary Recommendation for Mitigation or Other Comment
1.3 Strengthen Local Government Capacity on Mainstreaming Climate Change Considerations.		
(a) Capacity building on climate change adaptation.		
Develop and deliver a training module for local councils on climate change adaptation through a training of trainers approach.	Local government is going through a period of rapid change as a result of decentralisation and democratisation. Climate change adaptation is an important strategic topic with implications for all aspects of planning, design, construction and operation or urban and municipal infrastructure and housing. Councils are overwhelmed with responsibilities and have low technical and implementation capacity.	The training modules must be practical and fit directly into local government processes.

4.1.2 Hithadhoo

4.1.2.1 Development and Implementation of Community-based Wetland Management Plan (CBWMP) for the Maa-Fehele wetland system including updating of existing Eidighali and Koattey Management Plan.

There was no formal Management Plan for the Eidighali and Kottey protected area at the time the CCTF I was prepared. During the CCTF I implementation, CBWMP was prepared and Social Impact Assessment (SIA) was conducted. Findings and recommendations of the SIA are presented below:

Impacts on Sand miners: As noted in the previous chapter, there may be some loss or reduction of income for sand miners, who use the protected area beaches for sand mining. This activity is already illegal and is one of the prime concerns of the local population regarding the misuse of the protected area. The fence and gate planned under this project is being installed under this project is specifically being installed at the request of the locals to prevent illegal sand mining and waste dumping. Nonetheless, the closure of the protected area will have some short-term loss of livelihood for sand miners. However, all miners will have access to all other legal sites in Addu City.

Mitigation Measures

- It is recommended to undertake alternative skills development training for those miners willing to participate. This activity can be conducted as a series of workshops or single extended workshop based on demand.
- It is also recommended to consider employing the affected sand miners during construction stage and possible extension during operation.

4.1.2.1.2 Potential Adverse Impacts during Operational Phase and Suggested Mitigation Measures

Damage to vegetation and disturbance to fauna: The increased visitors to the site may leads to unintended damages to the vegetation along the footpaths and trails due to visitor activities. Visitors straying away from the main trails could trample and damage vegetation as well.

There may also be damage and disturbance to sensitive flora and fauna by those straying out of the established trails.

Disturbance to fauna during the use of proposed boardwalk and viewpoints is possible especially on birds and crustaceans. The boardwalk is constructed in an area where crab activity may be high seasonally.

Improper waste disposal at the protected area has always been a problem and the proposed low and green fencing may not solve the problem. These are waste dumped from the nearby houses. Waste thrown by visitors may also be a problem in the short-term.

Mitigation Measures

- Development of rules and regulations for the use the protected area.
- Application of rules through better enforcement capacity and monitoring.
- Conducting mandatory guided activity for tourists.
- Installation of signs and awareness posters.
- Information sessions at the visitor centre.
- Regular clean-up of the trails and other parts by rangers and Visitor Centre staff.

Other Social impacts: The project mainly has beneficial public impacts (see next section), and has

been formulated with the participation and input of a large number of stakeholders and community members (see Chapter on stakeholder consultations). In general the public would like to see that vehicle access is controlled to prevent dumping waste and illegal sand mining. Their preference is for a strong fence. Some also had reservations about activities in the farming area that can be considered beyond farming such as construction of buildings. They wanted such activities to be restricted. However, there are groups in the community which may have grievances against some of the measures proposed under the project. They are:

- Sand mining will be ceased in the area. This has positive and negative affects; the sand miners will have grievances due to the lack of access. However, since sand mining is already illegal in the protected area, there may not be any official complaints.

- Poaching will be ceased. Some youth groups may have grievances to this aspect indirectly through expressing frustrations at other aspects of the project such as controlled access.

- Access control to the site, particularly vehicle access control, may have grievances from some sections of the community in the short-term. In particular, the farmers will require the use of vehicles to transport the produce. Access to certain parties may lead some individual to claim unfairness. Use of motorcycles is very common by youth to visit the Koattey area during free time and late afternoons. Control of motorcycles may attract a substantial number of grievances towards the project

- Limits to farming practices such as the conversion to organic farming may be met with resistance from farmers.

Mitigation Measures

- Public workshops and awareness programmes to inform as much of the public as possible about the management regimes implemented in the Protected Area.
- Post the rules and regulations of using the protected area outside the visitor centre for public to view.

4.1.2.1.3 Potential Significant Positive Impacts during Operational Phase

The project mainly has beneficial impacts on the community. The most significant of these positive impacts are:

- Increase in direct and indirect employment opportunities. Direct employment opportunities in the form of Visitor Centre staff, rangers and guides will be available. Indirect opportunities for craftsmen, women (crafting, food processing and cleaning), traditional artists and small retail businesses will be available, once the ecotourism activities attract foreign tourists.

- Better management of natural resources and prevention of illegal activities within the protected area.

- Preservation of the protected area for future generations.

- Indirect benefits of tourism activities on the island.

- A better recreational area.

4.2 Preliminary Assessment of Impacts Associated with Solid Waste Management and Proposed Mitigation Measures

4.2.1 Introduction

Solid waste remains the most visible environmental and social threat to the tourism industry. The management of solid waste is especially challenging in the Maldives, where waste generation due to high incomes and more than 100 tourist resorts much exceeds that of many other small island states. With a highly dispersed population spread across numerous islands, there is little scope for harnessing scale economies and the costs of delivering services are high. A high population growth rate, a large influx of foreign workers and the execution of extensive infrastructure projects has meant that land space available for the disposal of waste is now extremely limited, and that accordingly there is an urgent need for the waste stream to be minimized through incentives for resource recovery such as recycling and composting. Finally, the fragile marine atoll ecosystem requires that special attention should be given to the choice of waste management technology and system design to mitigate adverse impacts, which adds to cost implications. To address these risks and challenges, stringent criteria need to be applied for evaluating the potential impacts of the selected site(s) for SWM, the choice of engineering, technological and management solutions for minimizing the environmental and social impacts in the Maldives. This meant prior to site-specific ESIA is conducted, it will be necessary to seek the willingness of inhabited island communities to participate, selection of technologies and site through Best Practicable Environmental and Social Option exercise and establishment of technical and feasibility of proposed options.

It is emphasized that options available in other South Asian countries for example will not be apllicable due to the country‘s geographical setting and other social-economic and environmental factors unique to the country.

There are two main options to the project, either a development or a no-development alternative. The development option is highly justified since it is a high priority in the Government‘s policy to develop a regional facilities due to serious environmental impacts associated with the present waste disposal in the small island communities. Consequently, a no-development option of the no SWM can be disregarded due to government policy, demonstrated impacts of not managing solid waste and its link to the sustainability of Maldive‘s key economic sectors, particularly tourism and fisheries. Assuming there has been no government policy; the no-development option means severe health hazards to island communities, rapid degradation of ecosystem integrity and significant negative impact on the economy of the Maldives.

4.2.2 Alternative Analysis

The proposed project is intended to provide technical assistance to an environmentally sound and economically feasible regional solid waste management system in Addu City and Fuvahmulah, which is currently underserved by proper waste management facilities. Taking account of the Maldives‘ dispersed geography and fragile ecology, the project would be implemented at multiple levels. A plociy decision is already in place that it is necessary to process the waste to some extent at the island level to reduce the residual to be disposed and a regional facility will be necessary with appropriate technology options for final processing or disposal depending on the conditions of the site slected for the facility. Final disposal at the currently existing centralized facility in Thilafushi is not considere to be viable due to cost of transportation. Within this context, the following processing steps have been identified for the proposed interventions of the project;

First, the upgrading of Island Waste Management Centers (IWMCs) will provide adequate facilities for the island communities to reduce the volume of waste requiring final disposal by sorting, recycling, and composting. The residual waste will be temporarily stored in a safe and environmentally responsible manner in the IWMC. Second, a technical assistance will be provided to undertake a strategic options strudy for integrated SWM specifically focused on building and managing Regional Waste Management Facility (RWMF) in a site with compatible land use that will serve as the destination for residual waste from the IWMCs and participating resorts. Detailed

assessment of current and future needs and technology choices for waste management will be cartried out as part of the study. Alternate sites and technologies will be weighed, keeping in mind cost and sustainability. Recognizing the significance of the country‘s natural capital and reputation as an unspoiled tourist destination, environmental factors will be given high priority over economic considerations in determining both the location and design of the system.Community consultation, communication and involvement are for this component and are essential to the successful operation of IWMCs.

On the long-term (beyond the project period), all the above will be supported by allied services such as community programs, waste transfer and transportation facilities, technical assistance and financial systems, all of which will be subject to government regulations and guided by stringent environmental criteria. The facilities will be designed and built in accordance with the national standards set by EPA to reduce the risk of contamination from solid waste. Special attention will be paid to healthcare waste and toxic waste that will require special handling and management. Detailed assessment of environmental and social impact assessment will be carried out. Polluter Pays Principle and fee for services are the main government policies for ensuring a sustainable waste management system. Recognizing that waste management is a municipal service, government will ensure incentives and subsidies are provided where necessary.

Waste Management Options. Based on previous experience on developing intergrated SWM through MEMP has demonstrated the importance of following elements when selecting waste management options:

- Collection and transportation

- Processing (overall):

  Energy recovery (incineration, bio-methanation, refuse derived fuel, gasification and pyrolysis);
  Recycling;
  Composting (Windrow, in-vessel).
  Disposal:
  Landfill;
  Land reclamation.

- Processing (site-related):

  Island level processing
  Processing at a regional facility
  Recyclable Management

- Management of the facility(ies) including institutional mechanism and cost recovery

4.2.3 Island Waste Management Centres

The Island Waste Management Centres will serve as a focal point for island waste management activities. The successful completion of island based management plans, and activity based environmental assessment screening and/or scoping processes will be the trigger to move onto the construction of the Island Waste Management Centres, provision of equipment and implementing island based waste management activities.

A generic design of an IWMC consists of a concrete pad, covered waste storage bays, guttering, a rainwater harvesting tank, a chain link fenced enclosure with lockable gates. The solid waste generated by the island communities is brought to the IWMCs where it will be separated into recyclables, hazardous wastes, and residual waste requiring final disposal. The separated wastes will be stored in respective waste storage bays for regular collection and transport to the RWMF. The footprint of the individual IWMCs are based on the population size on

the island and land area available as described in Table 5.X. However, for islands where specific activities are identified, the final footprint for the IWMCs will be determined by the scale and extent of the activity proposed. Adverse environmental impacts arising from the construction and operation of IWMCs are not likely to be significant.

Table 5.16: IWMC Footprint

Population	Footprint m^2
<=500	204
>500<=1000	280
>1000<=1500	360
>1500<=2500	532

This Framework describes processes to engage the community in constructing, operating and maintaining IWMCs. In accordance with the agreements reached within the Government island offices are required to form an Island Waste Management Committee, consisting of one participant for the Island Development Committee, one participant from the Women's Development Committee, one participant from the island office and two community participants. The Island Waste Management Committee, with support from the island office, is responsible for informing the community, advertising and evaluating bids submitted by community enterprises, NGO's or private sector contractors, and providing construction oversight for IWMC construction. Standard equipment lists and specifications have been prepared for islands based on population size. However, equipment will be provided based on specific community expectations as detailed in the Island Waste Management Plans (IWMPs). Additional equipment may be made available to support specific activities proposed in the IWMPs.

4.3 Preliminary Assessment of Impacts Associated with Coral Reef Monitoring and Proposed Mitigation Measures

4.3.1 Introduction

The Marine Research Centre (MRC) is alredy doing some coral reef monitoring in Addu Atoll under the National Coral Reef Monitoring Framework (NCRMF). The coral component under the CCA project will include the following sub-components in addu atoll and other selected sites elsewhere:

- Training and capacity building of the relevant stakeholders

[3] IDA financed Vandhoo RWMF is expected to be commencing its operations around second quarter of the calendar year 2015. Thilafushi rehabilitation and management of waste reaching the facility are expected to commence soon with the signing of the rehabilitation work to the Indian Company Tatva that was facilitated by the IFC.

- Setting up baselines at the new sites (in addition to the existing 5 sites) monitoring of coral reefs
- Refininging and improving performance of the web-enabled technology platform (referred to as _the Coral Reef Monitoring Framework‘)
- Experience exchange workshops targeting national and international stakeholders (selected small island nations)
- Dissemination and policy inputs (recommendations) on coral reef resouces management.

It is that implementation of this component will have relatively little adverse impact on the environment, and no social safeguards issues are anticipated. However, some physical impacts on corals could occur if insufficient care is taken during the monitoring work, so the component was included within the ESAMF study. It should be noted that no grievances were raised by partnering resorts during the WCCM Project under CCTFI.

As practiced during CCTF I, the field monitoring will be undertaken by qualified professional resort divers, which greatly simplifies the project work, in that it reduced the need for diver training and largely eliminate safety concerns since the divers will already be trained in good environmental diving practices.

During CCTF I appropriate environmental, social and safety guidelines to be followed during the coral monitoring activities, including measures to mitigate any likely adverse impacts were developed based on existing internationally accepted guidelines from respected institutions. CCTF II will also follow the same measures and principles.

4.4 Due Diligence Principles

This Environmental and Social Management Framework (ESAMF) considers and incorporates principles of due diligence that will be applied during project preparation and implementation in managing potential environmental and social risks that may be encountered. The key due diligence principles are as follows:

Principle 1: Review and Categorisation. All physical interventions will be subject to a social and environmental review and shall be categorized based on the magnitude of potential impacts and risks in accordance with environmental and social screening criteria.

Principle 2: Social and Environmental Assessment. As per the GoM regulatory requirements, where necessary Initial Environemental Evalautions (IEEs) or Environmental and Social Impact Assessments (ESIAs) will be undertaken to address, as appropriate, the relevant social and environmental impacts and risks. The Assessment will also propose mitigation and management measures relevant and appropriate to the nature and scale of the proposed project as described earlier.

Principle 3: Applicable Social and Environmental Standards. The Social and Environmental Assessment will refer to the applicable World Bank Operational Policies and Environmental Health and Safety (EHS) Guidelines, as well as policies and standards of the GoM. The Assessment will establish the project's overall compliance with, or justified deviation from, the respective World Bank Operational Policies, Performance Standards and EHS Guidelines where applicable. The Assessment will address compliance with relevant Maldivian laws, regulations and permits that pertain to social and environmental matters.

Principle 4: Environmental and Social Management System. For all physical activities, an Environmental ands Social Management Plans (ESMPs) and monitoring indicators will be developed which addresses the relevant findings, and draws on the conclusions of the sssessments. The ESMPs will describe and prioritzse the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the assessments. These actions will be costed and reflected as part of the contractual documents of the civil works contracts.

Principle 5: Consultation and Disclosure. For all activities affected communities will be consulted within a structured and culturally appropriate manner. If principle project activities or subproject activities are assessed to have significant adverse impacts on affected communities, the process will ensure their free, prior and informed consultation as a means to establish whether those activities have adequately incorporated affected communities' concerns. In order to accomplish this, this framework as well as all other safeguard instruments will be made available to the public by the borrower for a reasonable minimum period. The process will be documented and account will be taken of the results of the consultation, including any

actions agreed resulting from the consultation. For projects with adverse social or environmental impacts, disclosure will occur early in the Assessment process, and on an ongoing basis.

Principle 6: Grievance Redressal Mechanism. To ensure that consultation, disclosure and community engagement continues throughout project implementation, a grievance redressal mechanism will be established, scaled to the risks and adverse impacts of the project or subproject, as part of the management system. The grievance redressal mechanism will allow for concerns and grievances about the project's social and environmental performance raised by individuals or groups from among project-affected communities to be received and to facilitate resolution of their concerns and grievances.

Principle 7: Monitoring and Reporting. All SMPs will be monitored based on the monitoring schedule identified in the SMP by the relevant responsible party. The Environmental and Social Coordinator will be responsible to ensure the monitoring activities have taken place including his/her monitoring and consolidate monitoring report is prepared bi-annually.

Principle 8: Training. Training to ensure project staff, staff of civil contracts and other parties who would play a role in managing social impacts will be necessary to ensure successful implementation of this SMF. Necessary budget should be allocated to carry out the training plan.

4.5 Framework Structure

4.5.1 Screening

At the national level, screening is the process by which proposed developments are reviewed to determine the level of social assessment to which they should be subjected, which could range from none at all up to a full Social Impact Assessment (SIA). At the project level, screening is the process of reviewing a proposed activity against a checklist of factors to determine whether it is likely to have adverse environmental effects, and if so, what mitigation measures should be applied. The present SMF is largely concerned with the project level, but some notes are provided on national screening for completeness.

Project Level Screening

At the project (component) level, proposed sub-component activities need to be subjected to screening to determine whether they should be subject to Social Review. (This is a simple review, by the component team, of the likely implications of the activity, to determine whether it is acceptable, and if so, whether any particular mitigation measures should be applied.). The objective here is to provide a level of social review that is appropriate to the small scale of the sub-component activities, i.e. without the need to conduct a SIA.

All island waste management activities proposed in the IWMP will be the subject of an environment and social screening as the key management tool for identifying and assessing risk of environmental and social impact. An outcome of the above environmental and/or social reviews will, in most cases, be the development of Social Management Plans (SMPs). Where there are little or no environmental or social issues the proposed activities may move to implementation.

Social Standards and Guidelines

Screening will identify proposed sub-component activities that may have adverse social consequences, and which therefore need careful review and identification of mitigation measures. The next step of management is the application of Social Standards and Guidelines to those sub-components that screening finds to be applicable. They include both management guidance and possible mitigation measures, as outlined in the paragraphs below.

The application of these guidelines will require appropriate judgement and balance by the component implementation team. For tasks that are relatively small and simple, it may appear to be over kill to introduce lengthy guidelines and formal training. The danger is that if such arrangements are perceived to be unnecessarily complex, the workers concerned will simply ignore them. A balance will therefore be needed that ensures protection of the environment by providing an appropriate level of engagement with the workforce.

Management of Land

- Topsoil must be removed and stored for future use, before any further excavation work.
- In the case of temporary land take in agricultural areas, the positions of all walls, fences and hedges should be recorded, and they should be replaced at the end of construction.
- All land used temporarily during construction must be restored to its pre-construction condition.
- Cut and fill volumes must be planned to minimise the generation of spoil.
- Spoil from excavation must only be disposed of in planned spoil disposal sites that have been approved by the EPA; specifically, excavated spoil must not be dumped in wetlands or lagoons or on agricultural land. Completed spoil heaps must be profiled, covered in topsoil and grassed to maintain stability.
- All excavations below ground level should be bunded to prevent water inflow or outflow.
- Water pumped out of excavations should be passed through a settlement facility before disposal.
- The use of heavy machinery should be minimised to avoid soil compaction.
- Arrangements must be made for the halting of work and the consultation of specialists from the National Museum, in the event that any potential archaeological remains are uncovered during excavation.

Community Facilities

- Consultation is required with neighbouring communities before the start of construction, to identify any notable features or issues of local concern.
- Features that are to be protected during construction (cemeteries, mature trees, wells, etc) should be marked with brightly coloured tape.
- Excavation works below ground level in the vicinity of settlements should be marked with posts and tapes for safety.
- Temporary bridges or diversions must be provided wherever existing footpaths, tracks or roads are to be cut by construction works.
- Temporary water supplies are to be provided where either an existing water source is to be interrupted by construction, or access to the existing supply is severed.

Health & Safety

- All employed construction workers must be given a medical examination (including sight and hearing tests) before being accepted for employment. This must be repeated annually. The results of these medical examinations must be kept by the contracting company.
- All employees must be given printed information on the health implications of their work and how to avoid problems. This should incorporate advice in the field of sexually transmitted diseases (STDs), including HIV / AIDS.
- All construction workers must be given H & S training.
- All construction workers must be provided with a set of appropriate personal protective clothing and equipment (e.g. hard hat, hard boots, leather gloves, ear defenders and dust mask). Workers are required to wear appropriate protective equipment before being allowed on active construction sites.
- A „permit to work‘ system is to be instituted for all work at hazardous locations, e.g. working over water or in boats.
- All excavations below ground level should be marked with posts and tape.
- Drinking water, toilet and washing facilities must be provided at each active site.
- Each active site must be equipped with a comprehensive First Aid kit and eyewash bottle.
- All construction vehicles must carry a fire extinguisher and first aid kit.
- All (legal) toxic or hazardous materials (e.g. water chlorination agents) must be stored in a locked, waterproof, ventilated enclosure.
- All compressed gas bottles must be stored, chained in the upright position, in a locked ventilated enclosure.

- International occupational health standards must be applied to all contractors‘ workplaces. Contractors should consult the World Bank Environment, Health and Safety Guidelines.

Social Impact Assessments (SIAs)

All ecotourism and drainage activities will require full-scale SIAs carried out as per the national regulation. Only new construction of IWMCs will require SIAs. In the case of this project since only improvements to the existing IWMCs is necessary, only SMPs will be adequate.

Social Management Plans (SMPs)

All physical sub-projects/activities will prepare SMPs that will describe and prioritizes the actions needed to implement mitigation measures, corrective actions and monitoring measures necessary to manage the impacts and risks identified in the screening assessments, SIAs. A generic terms of reference for ESMP is provided in Appendix M.

Measures and actions that address identified impacts and risks will favor the avoidance and prevention of impacts over minimization, mitigation wherever technically and financially feasible. Where risks and impacts cannot be avoided or prevented, mitigation measures and actions will be identified so that the activities operates in compliance with applicable national laws and regulations etc., and meets the requirements of relevant World Bank standards.

Physical Cultural Resources – protection and chance find procedures

If any person discovers a physical cultural resource, such as (but not limited to) archeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the Contractor shall:

1. Stop the construction activities in the area of the chance find;
2. Delineate the discovered site or area;
3. Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible authorities take over;
4. Notify the Supervising Officer who in turn will notify the responsible authorities immediately (within 24 hours or less);
5. Responsible authorities are in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by archeologists. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values used by the GoM;
6. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
7. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
8. Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the physical cultural resource.

Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the physical cultural resource. The Supervising Officer must have capacity to manage the processes in the plan. At a minimum, expert opinion should be sought from government agencies or specialist consultants for the following:

Institutional Arrangements

Currently, the PMU has an Environmental and Social (E&S) Coordinator who will continue to play a central role of managing both CCTF phases I and II safeguards requirements. He/she will report to the Project Manager and will work closely with the Wetlands Coordinator; Solid Waste Management Coordinator and Coral Reef Monitoring Coordinator. The E&S Coordinator will be responsible for ensuring the overall implementation of environment and social plans and will also liaise with other agencies, contractors and engineering supervisors at the island level to implement safeguards mitigation measures, monitoring and evaluation of implementation and report on compliance and status of performance indicators. The field level responsibilities to monitor and report on safeguards will lie with the Conservation Officers that will be located in Fuvahmulah and Addu. The E&S Coordinator will take the leadership to orient staff and implementing partners of the SAMF and how to operationalize it on the ground. The Conservation Officers at the island level will also be first level of contact for any grievance / feedback for the community.

Engineering staff or consultants that will be assigned will also ensure the necessary mitigations measures identified in the SMPs are implemented by the contractors. In addition, contractors will be responsible for the implementation of the respective ESMPs and will be required to prepare a method statement for approval by the E&S Coordinator to be submitted through the engineer to the activity.

Monitoring efforts should include the following:

- Regular inspection to determine compliance with the stated management measures with respect to excavation, spoil disposal, wetland protection, treatment and revegetation of land, etc.
- Regular inspection to determine compliance with mitigation measures with respect to community facilities, disturbance, land acquisition, etc.
- Regular inspection to determine compliance with defined truck routes.
- Sampling and analysis of any construction site drainage water discharges.
- Noise monitoring at active construction sites near to housing or noise sensitive receptors (e.g. school, hospital).

A final monitoring report should be prepared at the end of construction. This will be a social audit, which will report that the construction has been completed in full compliance with the respective SMP. If necessary, it will identify any remaining social problems that need to be addressed before final payments are released to the contractors.

The project is not a social development project except in terms of capacity building for local government and, to the extent possible, in the community. The only social indicator identified in the project's results framework is "Participation of Local Councils and community stakeholder groups in decision making on wetland management". In this case participation can be measured by (i) minutes of meetings where decision are taken concerning the wetlands, and (ii) the attitudes and perceptions of stakeholders towards the project and project activities and products, determined through interviews and focus groups.

No gender-specific negative impacts of project activities have been identified, and therefore it is not considered necessary to develop any specific gender-related indicators. This assumes that the project implementing staff apply normal best practice to the design of the participatory planning process, workshops etc. to ensure the inclusion of women as well as men and to target communication messages appropriately.

Grievance redress

A three tier grievance mechanism, prepared and tested under CCTFI WCCM, will be established which will be accessible to all community members. The Island Council will be the first level of contact for any aggrieved person. The Community Advisory Board developed under CCTFI WCCM will be further strengthened and complaints received by the Island Council will be sent to the Community Advisory Board for advice as appropriate. In case the aggrieved person is not satisfied, he or she can approach Ministry of Environment and Energy. The E&S Safeguards Coordinator in the PMU will be the contact person in MEE. In case the issue is not resolved, the aggrieved person has the option of approaching judiciary. In cases where vulnerable persons are unable to access the legal system, the Attorney General´s office will provide legal support to the vulnerable person(s). The PMU will assist the vulnerable person(s) in getting this support from the Attorney General´s Office. The PMU will also ensure that there is no cost imposed (such as for travel and accommodation) on the aggrieved person if the person belongs to the vulnerable groups. The verdict of the judiciary will be final.

The project specific Grievance Mechanism is summarized below:

Tiers of Grievance Mechanism	Nodal Person for Contact	Contacts, Communication and Other Facilitation by Project	Timeframe to address grievance
First Tier: Island Council /(Community Advisory Board)	Island Council is the first level of contact in case of any grievance. Once the Community Advisory Board has been created, it will be the first level of contact in specific grievance related to	• In the Administration Area of the Protected Area there will be an Information Board listing the names and contact telephones. • In the Administration Area of the Protected Area it will be taken one public meeting with pre-decided schedule organized unless every three months.	15 days

	the management of the protected area or any other issue related to land; access and adverse impacts on the community.		
Second Tier: Ministry of Environment and Energy (MEE) – ESDD of the Project Management Unit (PMU).	For wetland protection, will forward the grievance to the ESDD Coordinator of the PMU.	• Only after exhausting the first and second tiers. • Website advertisement, public notices in print media. • The aggrieved person can attend the hearing by PMU in person. The ESDD Coordinator will be responsible to ensure that there is no cost imposed (such as for travel, etc.) on the aggrieved person if the person belongs to the vulnerable groups. • Further, the project will assist the vulnerable aggrieved person if such a person is requested to attend the hearing in person.	60 days
Third Tier: Judiciary Power / Assistance to Vulnerable Persons beyond the Project's Grievance Redress Mechanism	Judges will remain as an option for an aggrieved person and/or community in case that the others tiers haven not been effective.	• Only for vulnerable person(s) as per the grievance mechanism of the project. • Only after exhausting at least both of the second and third tiers of the grievance mechanism.	As per established judicial procedures

4.8.7 Communication Strategy & Consultation Plan

The project's communication strategy should be aimed at:

(i) managing resident's and other stakeholders' expectations: this is a small project with a very short timescale; it will not bring physical solutions to problems such as flooding, and will not provide significant employment or generate significant economic opportunities although there will be some support for protected wetlands linked environmentally friendly livelihoods;

(ii) generating inclusivity in the planning process by emphasising that the planning process will develop solutions to real problems rather than just create a heavier workload for the administration;

(iii) there is a real issue of youth disaffection on the islands (e.g. under-attainment in education because of a "what's the point" attitude; unemployment; increasing drug use) and there are constraints on the quality of environmental education in schools; the project could make a small contribution to both aspects.

The project team lead by the E&S Coordinator has undertaken number of consultations during the project preparation and summary of the consultations are provided in Appendix N. Further consultations will be included as part of number of consultancies for wetlands conservation, coral reef monitoring soild waste management and and mainstreaming climate change into island development planning during implementation. These will be duly documented in the repective outputs of the consultancies. In addition, the technical coordinators, E&S Coordinator and the Conservation Officers will undertake continuous consultations with stakeholders and report as part of monitoring.

4.8.8 Training

Training will be provided for the Conservation Officers on how to monitor and report on environmental and social safeguards requirements by the E&S Coordinator. They will be also provided training on the use of Grievance Redressal mechanism, consultations and reporting.

All contractors‘ are expected to disseminate and create awareness within the workforce ESMP compliance, and any staff training necessary for their effective implementation. Where contractors do not have existing environmental staff, E&S Coordinator and Conservation Officers will make arrangements for adequate capacity-building within the workforce to be involved.

Where construction work is to be undertaken by community members, training should be provided by the E&S Coordinator and Conservation Officers of the project team. That training should consist of an introductory talk, dissemination of the guidelines, and an on-site talk prior to the start of each new task within component implementation.

5 GENDER DEVELOPMENT FRAMEWORK

5.1 Status of women in Maldives

The gender assessment carried out by Asian Development Bank in 2007 points out that despite Maldivian women being among the most emancipated in South Asia and the Islamic world, there are concerns related to the fact that few women actually participate in the labor market, that the share of female-headed households is amongst the highest worldwide, and that female-headed households are especially vulnerable to poverty.

The Human Development Report, 2013 shows that Maldives has a GII value of 0.357, ranking it 64 out of 148 countries in the 2012 index. In Maldives, there is no institutional discrimination along gender lines in access to education and health services or for jobs in the public sector. School enrollment rates for girls and boys are almost the same and are very high (at 94% for primary and 55% for secondary school) as are the adult literacy rates (98%). Women are employed in the government and in manufacturing, and they account for 70% of active persons in agriculture. Despite all this, in Maldives, 6.5 percent of parliamentary seats are held by women, and 20.7 percent of adult women have reached a secondary or higher level of education compared to 30.1 percent of their male counterparts. For every 100,000 live births, 60 women die from pregnancy related causes; and the adolescent fertility rate is 10.2 births per 1000 live births. Female participation in the labour market is 55.7 percent compared to 76.8 for men.

The ADB study of 2007 points out following gender related issues:

- Gender gaps persist in various aspects of social development due to stereotypes and limited opportunities for women to work outside the home.
- The female employment participation rate has declined from 60% in 1978 to 21% in 1995—from one of the highest in the region to one of the lowest in the world.
- Divorce is very common in the Maldives and the divorce rate remains high despite the introduction of the codified Family Law in 2001.
- The Maldives has one of the highest rates of female-headed households in the world, at 47%. Almost a quarter of these had no income-earning member, with only 21% economically active in the week preceding the census.
- Malnutrition is a major contributor to complications and mortality of women during childbirth, and underweight babies. Women are also at risk during complicated pregnancies due to the lack of affordable transport to atoll referral hospitals or the capital in the case of complications experienced while giving birth.
- The Maldives has a legal system that is a combination of common law and *Shariah* provisions. The main areas where women face legal obstacles to their participation in development are property rights, inheritance and provision of legal evidence. In *hudood* offenses, a woman‘s word does not carry the same weight as a man‘s in a *Shariah*-based court of law, therefore in cases of sexual offense, it is a man‘s word against a woman‘s, with onerous provisions for presentation of evidence such as medical documentation of injuries.
- Violence against women is a serious problem which is largely ignored by the legal system, with recent Government reports estimating that one in three Maldivian women aged 15-29 had experienced some form of physical or sexual violence at least once in their lifetime.
- The rules of inheritance favour men, as they are defined in terms of the person‘s relationship to the deceased, and assume that men will provide maintenance for women automatically.
- Gender discrimination exists in the realm of public service and politics. Only 15% of the legislators and senior officials in the Maldives are women.
- The government is the largest employer in the Maldives, and employs 62% males and 38% females. Females however make up 54% of temporary government jobs and are concentrated in the education, health and welfare sectors, whereas males dominate in the services sector and the senior ranks of the public service. Women are also under-represented in positions of political leadership. There are four women in the

cabinet of 22 (13.6%), 6 women in the Majlis out of 50 (12%) and 11 women in the Special Majlis out of 113 (9%).

5.2 Gender Development Framework

Gender Development plan is being designed under the project as part of ESMF which will help analyze gender issues during the preparation stage of sub project and design interventions. At the sub project level, gender analysis will be part of the social assessment and the analysis will based on findings from gender specific queries during primary data collection process and available secondary data. The quantitative and qualitative analysis will bring out sex disaggregated data and issues related to gender disparity, needs, constraints, and priorities; as well as understanding whether there is a potential for gender based inequitable risks, benefits and opportunities. Based on the specific interventions will be designed and if required gender action plan will be prepared. The overall monitoring framework of the project will include sex disaggregated indicator and gender relevant indicator.

The participation of beneficiaries and focus on poverty reduction are two other key determinants of the effectiveness and sustainability of any project. Any project must address the constraints on women's participation in project both at design stage as well as during construction. The project must also focus on the linkage between gender and poverty, by identifying, for example, households headed by females and those households' special needs. An adaptive, learning, and process-oriented approach works better than a blue print approach; continuous dialogue between the executing agency and the beneficiaries is therefore important. Project beneficiaries are likely to have a stronger sense of ownership when the project gives them enough time, design flexibility, and authority to take corrective action. In this way, they find it easier to incorporate their earlier learning and negotiate with project staff and service providers. Therefore, a mechanism must be built into the project to allow such two-way interactions between the beneficiaries and the service providers. Therefore gender analysis will be an integral part of the initial social assessment at the screening stage itself.

The GD framework outlines the specific issues linking with corresponding strategies and activities which will be given due consideration in the project. This will ensure women's participation in the value-chain in order to benefit from project activities. The major tools are used to identify and deal with gender issues in the project cycle: gender analysis, project design, and policy dialogue.

Gender analysis should be an integral part of the initial social assessment at the screening stage itself. The issues identified can be scaled up during the feasibility and detailed analysis can be carried out during the DPR stage.

The project designs should be gender responsive based on the gender analysis, and should be included in the DPR The findings and recommendations from the gender analysis during project planning and feedback from beneficiaries during implementation must be discussed thoroughly to determine the need for further action.

Suggested Gender Development Plan for the project is presented below.

Gender issues	Strategy	Proposed activities
Lack of awareness	Awareness campaign about the project for the community focusing on the vulnerable group including women.	Formation of women groups around specific project areas. Share information about the project benefits with local community.
Low Level of literacy	Support functional literacy campaign and develop extension programmes to take the benefits from the project as per the needs of illiterates.	Undertake literacy programs as built- in activities coordinated with literacy programmes. Develop the implementing strategies to communicate real time information specifically for economically weaker section.

Gender issues	Strategy	Proposed activities
		Develop audio-visual aids and documentary for training programs about the project for illiterate women groups
Excluded from Opportunities and because of social boundaries as a result low level of participation in decision making process	Rapport building with Women Development Office at District or local level involving them in Programmes Gender sensitization to all stakeholders including project entities. Ensure Women's participation during meetings, project implementation and monitoring .	Carry out meetings and interaction programme with and orientation to women in the community. Conduct leadership training for women members of commodity groups.
Lack of knowledge on and access to technical knowhow	Promote need based technical awareness and support services.	Organize training on technologies Provide opportunities of exposure or study visit to women's group to develop their leadership capacity
Disparity in Wages	Accord Priority Employment to women in project generated construction activities. Promote equal wages for equal work	Inform women groups regarding proposed construction works. Identify women interested to work; assess their skills and involve them as per their capabilities. Monitor women wage rate and do the needful to ensure wage equality for similar type of construction works. Inclusion of the above elements in the contractors' document.

Please refer to Appendix O for Social Action Plan including Socio-Economic Baseline Studies (BSES); Social Impact Assessment; and Preparation of a Resettlement Action Plan (RAP).

APPENDIX A: TOPOGRAPHIC FEATURES OF FUVAHMULAH

APPENDIX B: LAND USE PLAN OF FUVAHMULAH

APPENDIX K: GENERIC ESMP TOR

Objective and Scope of Preparation of Environmental and Social Management and Monitoring Plan (ESMP)

In order to ensure short and long term environmental impacts that would arise due to improvement and rehabilitation work (to be described in the first section based on the sub-project/activity), an ESMP plan will need to be developed as per the scope presented below and in accordance with the ESAMF of the Project:

1. *Identification of impacts and description of mitigation measures:* Firstly, Impacts arising out of the project activities need to be clearly identified. Secondly, feasible and cost effective measures to minimize impacts to acceptable levels should be specified with reference to each impact identified. Further, it should provide details on the conditions under which the mitigatory measure should be implemented (ex; routine or in the event of contingencies) The ESMP also should distinguish between type of solution proposed (structural & non structural) and the phase in which it should become operable (design, construction and/or operational).
2. *Enhancement plans:* Positive impacts or opportunities arising out of the project need to be identified during the preparation of the check list and Environmental Assessment process where applicable. Some of these opportunities can be further developed to draw environmental and social benefits to the local area. The ESMP should identify such opportunities and develop a plan to systematically harness any such benefit.
3. *Monitoring programme:* In order to ensure that the proposed mitigatory measures have the intended results and complies with national standards and donor requirements, an environmental performance monitoring programme should be included in the ESMP. The monitoring programme should give details of the following;
    - Monitoring indicators to be measured for evaluating the performance of each mitigatory measure (for example national standards, engineering structures, extent of area replanted, etc).
    - Monitoring mechanisms and methodologies
    - Monitoring frequency
    - Monitoring locations
4. *Institutional arrangements:* Institutions/parties responsible for implementing mitigatory measures and for monitoring their performance should be clearly identified. Where necessary, mechanisms for institutional co-ordination should be identified as often monitoring tends to involve more than one institution.
5. *Implementing schedules:* Timing, frequency and duration of mitigation measures with links to overall implementation schedule of the project should be specified.
6. *Reporting procedures:* Feedback mechanisms to inform the relevant parties on the progress and effectiveness of the mitigatory measures and monitoring itself should be specified. Guidelines on the type of information wanted and the presentation of feedback information should also be highlighted.
7. *Cost estimates and sources of funds:* Implementation of mitigatory measures mentioned in the ESMP will involve an initial investment cost as well as recurrent costs. The ESMP should include costs estimates for each measure and also identify sources of funding.
8. *Contract clauses:* This is an important section of the ESMP that would ensure recommendations carried in the ESMP will be translated into action on the ground. Contract documents will need to be incorporated with clauses directly linked to the implementation of mitigatory measures. Mechanisms such as linking the payment schedules to implementation of the said clauses could be explored and implemented, as appropriate.

The format to present the ESMP in a matrix is provided below:

Stage	Activity	Environmental Issues	Mitigatory measures	Locality	Frequency of / Implementation Application	Cost	Implementation Responsibility	Monitoring Responsibility	Monitoring Frequency	Implementation Progress
Pre-construction / design / planning										
Construction										
Operational										

Important to note the following when using this template:

The EMP that will be prepared should have all sections in place, except the last column on Implementation Progress

What go in as the EMP to the bid and contract documents of construction contractor is the sections highlighted in blue, as Implementation Progress is not relevant at the time of bidding and Operational responsibilities would lie with the council.

Any activity that may be identified as the responsibility of design engineers should not be part of the EMP that goes into the bid and contract documents of construction contractors

Important to note: The consultant is responsible to ensure the ESAMF requirements are taken into consideration in the designing of infrastructure.

The ESMP Presentation

The ESMP should follow the same sequence as the tasks described above including the ESMP matrix provided above.

Consultant Qualifications

The design consultant team should include an expert with at least 8 years of experience preparing environmental management and monitoring plans for infrastructure construction, improvement and rehabilitation, costing of mitigation measures and preparing contractor clauses necessary to capture ESMP implementation needs.

Reporting and feedback schedule

All submissions related to the assignment should be submitted to Project Management Unit, as hard copies and electronically. The duration of the consultancy is x months. During the final submission of the ESMP report, if changes requested during the draft report stage have not been incorporated in a satisfactory manner to the client and the World Bank, the consultant will be required to work further on the document until it is considered satisfactory.

APPENDIX L - STAKEHOLDER CONSULTATIONS

Introduction

The Government of Maldives (GoM) is receiving support from the World Bank-managed Climate Change Trust Fund (CCTF) to deal with adaptation and mitigation of climate change. A multi-donor Maldives CCTF was established in December 2009 with the aim to build a climate resilient economy and society in Maldives through adaptation to climate change as well as mitigation for a low carbon development path. The total resources pledged by the European Union and the Government of Australia were US$10.3 million. Three projects that have been implemented under the CCTF so far include: (i) Wetlands Conservation and Coral Reef Monitoring for Adaptation to Climate Change project (WCCM) (P128278); (ii) Clean Energy for Climate Mitigation project (CECM) (P128268); and (iii) AASWM pilot project (P130163). All the three projects are planned to end on November 30, 2014. The EU expressed its intention to support the second phase with a supplemental contribution of EUR 3.85 million. With support from CCTF second phase (CCTF-II), GoM proposes a project named Climate Change Adaptation (CCA) Project in the southernmost atolls (Addu/Seenu and Gnaiviyani) to undertake an integrate approach to respond to climate risks while ensuring environmental sustainability in a select geographical area. It is envisaged that this comprehensive approach of combining natural resources management and SWM may create synergy and establish a self-sustained system.

The proposed development objective of CCA Project is to demonstrate climate adaptive planning and management through the adoption of a multi-sectoral approach in Addu and Gnaviyani Atolls.. The key intermediate result indicators for the project will be:

Establishment of a Protected Wetland Management system for Hithadhoo and Fuvahmulah to provide ecosystem-linked benefits to the community.

Strengthened coral reef monitoring framework (monitoring protocols and CoralDatabase) for improved management and decision making.

Improved capacity of Atoll/Island Councils of Hithadhoo and Fuvahmulah on atoll/island level SWM.

Increased awareness and capacity on mainstreaming climate change adaptation in island development planning in Atoll/Island Councils.

The project has five components: (1) wetland conservation; (2) coral reef monitoring; (3) development of an Island level integrated solid waste management system; (4) mainstreaming climate change into island development planning and (5) Project Management that have been proposed by GoM for financing under CCTF II.

Stakeholder consultation meeting

Project‘s Environment and Social Safeguard coordinator held consultation meetings with Atoll council and local community of Gn. Fuvamulah and Addu City for the purpose for project preparation and development of Environment and Social Assessment and Management Framework for CCTF phase II. In these meetings E&S coordinator gave a brief of CCTF phase II and all the activities related to project. And with the experience for CCTF phase 1, Grievance Redress mechanism was discussed.

Meeting with Fuvamulah Atoll Council

Location: Atoll Council office

Participants:

1. Mr. Abdulla Falah Shareef – president of Fuvamulah Atoll Council
2. Mr. Hussain Saeed – Atoll Council Member

3. Mr. Ahmed Isam – Atoll Council Member
4. Mr. Ahmed Mujthaba – Atoll Council Member
5. Ahmed Mohamed – Director at Atoll Council
6. Mr. Rifath Naeem – E&S coordinator
7. Ms. Hawwa Rasheed – Wetland Facilitation Officer

Discussion Points:

The Environment and Safeguard Coordinator gave a brief of the project and summary of the proposed ESAMF to the participants.

Regarding the pre-feasibility study for regional waste management, council highlighted that waste management is a very big concern and council is faced with lots of challenges to have a sustainable waste management system in the island. Also council feels there have been enough studies done on the subject and council and the locals are fed up with repeated surveys done regarding the topic. President of Atoll council likes to see more on ground actives for proper management of the waste rather than another study. President proposes that the bank look into the previous studies.

President of the Atoll council requested World Bank to see if there is any possibility to include more drainage work in the CCTF two. He highlight that drainage is a very big concern, and there is much to be done to address the whole drainage issue.

Regarding the coral reef monitoring component, even thou there is no dive school in the island at the moment with the introduction of guest house tourism in the island, there are going to be many dive schools opening soon. Since Fuvamulah is one of the least studied reefs among the inhabited islands in the Maldives, this will be a very good opportunity for the island. Council also request to give priority for locals when selecting participants for training.

Council is happy with the Environment and Social Grievance Mechanism used on CCTF one and council had no issue of using the same Environment and Social Grievance Mechanism in CCTF II as in CCTF I. Council request that apart from Atoll Council office, complain forms made available in Island Council offices in Fuvahmulah.

Council expressed their gratitude to the donor agencies for the financial help. Also raised concern that big portion of CCTF funding goes to Hithadhoo project and they feel Fuvahmulah is left out.

Meeting with local community and Community Advisory Board (Fuvahmulah)

Location: Atoll Council office

Participants:

1. Mr. Hussain saeed Atoll – CAB Chairperson
2. Mr. Mohamed Liraar – President of Miskiymagu Council
3. Mr. Abdulla Nasir – president of Hoadhadu Council
4. Mr. Khalis Shareef – president of Dhiguvaandu Council
5. Mr. Ali Waseem Hussain - president of Funaadu Council
6. Ms. Aishath Ali – Women's development committee
7. Mr. Faizan Faiz – Volunteer
8. Mr. Abdulla Ibrahim – Volunteer
9. Mr. Ibrahim Hassan – president of dhadimagu zuvaanuge jamiyya
10. Ms. Shuau Shareef – School
11. Ms. Aminath Sima – School

12. Mr. Ali Waseem Hussain
13. Mr. Rifath Naeem – E&S coordinator
14. Ms. Hawwa Rasheed – Wetland Facilitation Officer

Discussion Points:

The Environment and Safeguard Coordinator gave a brief of the project and summary of the proposed ESAMF to the participants.

Members of the community raise concern about the capacity of the contractor for the CCTF one and requested more involvement of the community.

Regarding the waste management studies plan for the CCTF II, it was highlighted that waste is one of the biggest challenges faced by the community, and so far numerous number of surveys and studies have been conducted by the government. Islanders have been waiting for a waste management project for a long time.

Everyone agreed that more drainage work is needed for the island, the work that been carried out in CCTF one is not enough to solve the flooding issue in the island. Community request if it‘s possible to include an island level drainage project for CCTF II.

It was highlighted that many community consultations have been taken place so far, and public opinions are collected in all these consultations but the projects that community get don‘t reflects with the opinions and request from the community. World Bank was requested to reflect on these suggestions from local community as same level as the policy level decisions. Islanders feel that they should have a bigger saying on project on their island rather than the ministry.

Community was informed that Environment and Social Grievance Mechanism used on CCTF I will be used for CCTF II. Community had no issue with the current mechanism.

Attendance Sheet

Meeting with public

Venue: Atoll council Date: 10/9/2014 Time: 13:30

Name	Designation	Office/ Sector	Contact Number	E-mail	Signature
Aishath Ali	Member	W.D.C	7412272	aishal-jj@hotmail.com	[signature]
Khalis Shareef	councillor	Dhigurandu Council	7792476	khalis@dhigurandu.gov.mv	[signature]
Hussain Saeed.	Councilor.	Atoll council	7771232	hussain.saeed@fuvahmulah.gov.mv	[signature]
Abdulla Nasir	Councilor	Hoadhadu council	7793234	naasa303@gmail.com	[signature]
Mohamed Limaan	Councilor	Miskiymagu Council	7981626	[illegible]@hotmail.com	[signature]
Faizan Faiz	Volunteer	school	7873059	faizcanfaiz01@gmail.com	[signature]
Abdulla Ibrahim	MRDC[illegible]	MRDC	7782290	[illegible]@gmail.com	[signature]
Ibrahim Hassan	president ~~[illegible]~~	Dhadhimago Zuvaanunge Jamiyya	7783731	note8929@gmail.com	[signature]
Ali Waseem Hussain	F. President	Funaadu council	7786237	aliwaseem@gmail	[signature]
Shuau Shareef	Volunteer	School	9103077	backinnup@gmail.com	[signature]
Aminath Sima	Volunteer	School	9768527	anthsima@hotmail.com	[signature]

Meeting with Addu City Council

Location: City council

Participants:

1. Mr. Abdulla Sodiq – Mayor
2. Hussain Hilmy – council member
3. Aishath Moosa – Admin officer

Discussion Points:

The Environment and Safeguard Coordinator gave a brief of the project and summary of the proposed ESAMF to the participants.

Mayor expresses its gratitude to all the donor agencies and World Bank. He is happy with the works that been carried about in CCTF I. He highlighted with some of the challenges the project have been facing which have delayed the work. But in overall he is satisfied with the project activities.

He highlighted that some of the issues that delayed the project was due to lack of communication with PMU and City council. He explained the importance of proper communication between PMU and the City Council as council are responsible to answer any questions raised by the local community, so it real important that City council is in loop for all the communications regarding the project. And requested we all should learn from our experience from the CCTF I, so that we can finish the CCTF II without any hiccups.

Mayor was pleased to hear that all the eco-tourism work planed in CCTF one, including visitor center will be continued in CCTF II. He added that they already have stated to see the positive output of the project; local community is showing a lot more interest in the area and supporting the conservation efforts. He also mention that still some illegal activities such as sand mining and waste dumping take place, and requested that we should put more effort to manage the protected area.

Regarding the regional waste management pre-feasibility study that will be taking place in the CCTF II, Mayor Feels that there is no need for a study as there have been number of studies and survey done in the Atoll so far. He continued saying that these studies are very recent and was carried out by CDE (who is also the CCTF I WCCM ecotourism ESIA consultant). Addu City Mayor requested if it was possible to use above mention waste management plan and relocate the funds for visitor center.

Council is happy with the Environment and Social Grievance Mechanism used on CCTF I and council had no issue of using the same Environment and Social Grievance Mechanism as CCTF I in CCTF II. Even though no grievances were officially reported there have been some issues and City Council was able to resolve these issues without many difficulties.

Meeting with local community and Community Advisory Board (Addu City)

Location: City Council

Participants:

1 Mohammed Fulhu – Ranfaru
2 Ahmed Aslam – Hiyaa, Hithadhoo
3 Ahmed Naeem –
4 Ibrahim Rasheed – Loojan , Hithadhoo
5 Shakeeb Ahmed
6 Aishath Ibrahim – Golden house

7 Fathmath Haneefa - Bilimaguge
8 Mariyam Shafiya – Saushan
9 Aminath Zeena – Noomaraage
10 Mohammed Zihan Zuhair –
11 Mohammed Lisam – Kudhehimaage
12 Shafiulaa Ibrahim – Dhoshalhamaage
13 Juvaria Ali – Marin gold
14 Nasrath Nasir – Freelife
15 Javaazaa Mohammed didi – Ahsheyrige
16 Mariyam Mohamed – Mirazge
17 Fathmath Didi- Karusathu
18 Fathmath Zubair – Nanreethige
19 Ahmed Habeeb- Dhonalhamaage

Discussion Points:

The Environment and Safeguard Coordinator gave a brief of the project and summary of the proposed ESAMF to the participants

Participants talked in length with communities experience with donor funded projects, most of the time community have been let down, and due to past experience big proportion of the locals are skeptical about the project. But members attended the meeting highlighted that they have high hopes for Ecotourism works that are to be carried out in Hithadhoo Protected area. Participants were pleased that all the eco-tourism activities that were planned in CCTF are going to be continued in CCTF II.

Participants request World Bank and PMU to monitor the works more closely; mostly due to the past experience for such projects. Road development project, Addu convention center project and many other development works that were carried out for the SAARC summit were repeatedly mentioned and communities are very much frustrated about the low quality of workmanship in these projects.

Participants request that project should arrange an easy mechanism for the public to get information about the project activities. Public interest in the area is increasing day by day and more people like to know what‘s happening in the protected areas. Also request that project includes more outreach programs.

Regarding the regional waste management pre-feasibility study, it was highlight that waste management is a really big environment and health issue faced by the islanders. And current waste management center does not have capacity to manage the waste and much waste is dump into sea and different parts of the island.

It was noted by the participants that there is a big need for awareness regarding all project components. At the moment very small number from community have information about the works carried out in the protected area. Participants requests for a copy of wetland management plan and information about the livelihood opportunities and limitations that may come with implementation of the protected area.

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[illegible]	9713666	[illegible]	[illegible]	5
[illegible]	7990304	[illegible]	[illegible] CAB	6
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[illegible]	9635613	[illegible]	[illegible]	8
[illegible]	7717241	[illegible]	[illegible]	9
[illegible]	9712741	[illegible]	[illegible]	10
[illegible]	7946835	[illegible]	[illegible]	11
[illegible]	7625701	[illegible]	[illegible]	12
[illegible]	7873274	[illegible]	[illegible]	13
[illegible]	7857879	[illegible]	[illegible]	14
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[illegible]	7902223	[illegible]	[illegible]	21

APPENDIX M: TERMS OF REFERENCES FOR SOCIAL ASPECTS

ToR for Social Action Plan, Socio-Economic Baseline Studies; Social Impact Assessment; and Preparation of a Resettlement Action Plan

I INTRODUCTION AND OBJECTIVES

About the project

The social action plan (SAP) has three main objectives

a. to present the project area and the impacts of land acquisition for project civil works on the people who own properties to be acquired, live on the land to be acquired, and/or derive their income from the land or enterprises operating on the land to be acquired.
b. to present the entitlement policy for compensation and assistance to people affected by the project.
c. to present an action plan for delivery of the compensation and assistance outlined in the policy, to the persons identified as entitled to such assistance; plan for gender development and indigenous people development plan as and when required.

II SCOPE OF WORK

Social Impact Assessment

The social impact assessment will be carried out for the project that will require (i) involuntary taking of private or government land leading to either (i) loss of livelihood and / or sources of livelihood (ii) displacement including those who are non- titleholders; (iii) adverse impact on common property resources. The objectives of the Social Impact Assessments are

- to provide the minimum information on social impacts as part of the preliminary screening of the project site.
- to verify the legal status of the land required; document existing structures, land plots, and other physical assets at the project site to establish a cut-off date for entitlements in accordance with the policy as given in ESMF, identify project affected persons including those who are vulnerable,
- to provide the socio-economic baseline information required for preparation of the entitlement framework.

Preliminary Screening: The consultant shall make initial visits to the site under consideration for project. Coordinated with the other screening exercises being undertaken (environmental, techno-economic), an assessment shall be made of the potential magnitude of social impacts, Any major social impact issues such as large scale resettlement, relocation or impact on habitation, loss of livelihood, acquisition of private land and impact on vulnerable groups shall be identified. Areas with no or minor social impacts shall be identified as part of analysis of alternatives.

Following the site selection, a verification exercise shall be undertaken. The verification shall establish the legal boundaries of the site, and identified current usage of the land in terms of squatters, land encroachments, fixed and movable structures, trees and wells, etc.

Census and Socio-economic baseline information: The consultant will collect census information. Consultant will also carry out socio-economic survey. The census and socio-economic survey shall gather information on the various categories of losses and other adverse impacts likely under the project. The losses shall be categorized according to type. These losses will vary based on the local context.. The survey may include but not be limited to:

Types of impact and number of PAPs against each impact type such as:

(i) Loss of land and other productive resources attached to land such as residences, commercial structures, trees, etc.
(ii) Loss of livelihood and / or sources of livelihood
(iii) Temporary loss of assets, livelihood or sources of livelihood
(iv) How project will impact women differently – on livelihood, displacement, access to resources, etc
(v) loss of structures, temporary of fixed, within or outside of ROW.
(vi) loss of access to public services (roads, water supply, irrigation, schools, medical facilities, shops).
(vii) loss of access to forest or protected areas;
(viii) loss of access to common property resources, and
(ix) disruption of social, cultural, religious, or economic ties and networks.

Furthermore, census and socio-economic survey shall identify potentially affected populations, with special attention to vulnerable groups such as women-headed households; households below poverty line; etc. The census survey information shall include but not be limited to

(a) demographic characteristics (age, sex, marital status, literacy level, peer relations, numbers, and categories of affected people)
(b) settlement pattern.
(c) main and secondary forms of livelihood including specification of the resource base, seasonal and permanent use of resources including land based of salaried employment for different household members, labor mobility and migration, the importance of informal networks and labor exchange patterns and the potential impact of disrupting these patterns, skill base, training need assessment for livelihood enhancement income through various sources, expenditure pattern, economic vulnerability, asset base,
(d) status of access to market, health facilities, banking, communication, etc
(e) if any persons have already been displaced, information on them should be collected for two time periods at the time of displacement and at present

As part of the socio-economic survey, an assessment shall also be made of what is the likely replacement value of the various assets lost is based on the following considerations

(a) entitlements to affected persons shall be based on replacement value.
(b) as part of this assessment, consultations and discussions shall be held with a representative number to the different categories of affected persons, to assess their views on what constitutes fair compensation or assistance, their preferences for resettlement actions, and reactions towards the project and
(c) a suitable methodology shall be developed to classify different types of assets, and the measurements taken to determine quantities of losses, i.e different types of land use, land categories, tree, crops, structures, businesses etc, and the unit of measurement such as area of land, number of trees, floor area or other measurements for houses etc.

The survey shall form the basis for the full base line socio-economic survey to be undertaken subsequently of all project affected persons (PAPs). The survey instruments must be pretested in field before full survey is initiated.

Reporting. The findings from the Social Impact Assessment shall be presented in a report. The information collected shall be gender segregated. This shall include

- Baseline information on socio-cultural and economic parameters of the project area
- assessment of current land acquisition practices, their appropriateness and potential impacts for this project.
- estimates of the type of losses expected as a result of the project, broken up in categories of commercial, cultivated, homestead, enumeration of structures, trees and other assets
- identification of the categories of affected persons, bases on the identified losses, and estimates of their numbers.

- it is important to analyze the data in such a way that the report captures the likelihood that some persons may lose different kinds of assets. Therefore, the number under each category is not mutually exclusive and in identifying different person‘s losses and entitlements, provision must be made for recording and compensation for more than one.
- the status of squatters and encroachers, if any.

Based on this information, consultant will finalize the RPF and entitlement framework provided in ESMF.

SOCIAL ACTION PLAN (Including RAP, IPDP and GAP)

Preparation of Resettlement Action Plan

The information collected during the Social Impact Assessment shall form the basis for preparing a Resettlement and Rehabilitation Action Plan (RAP). The RAP should contain at a minimum the following section

(a) Summary findings from the Social Impact Assessment
(b) Summarized description of applicable legal framework of Country and Bank‘s policies and

Entitlement framework. The RAP should clearly bring out why and how laws and policies are applicable and what measure has been taken in the project to address them.
(c) Data on expected impacts and numbers and categories of affected persons.
(d) Consultation and participation arrangements, of RAP and other stakeholders and framework for continued consultation during implementation stage
(e) Mitigation measures
(f) Gender action plan
(g) Institutional arrangements, including grievance procedures.
(h) Implementation procedures
(i) Timetable of activities, with Gantt charts showing the various elements of the plan, coordination of land, contracting, and construction,
(j) Monitoring and evaluation of land acquisition and resettlement process.
(k) Budget and costs,

II. Preparation of Gender Action Plan

The consultants will carry out Gender analysis as an integral part of the social assessment at the screening stage itself. The issues identified can be scaled up during the feasibility and detailed analysis can be carried out during the DPR stage. The project designs should be gender responsive based on the gender analysis, and should be included in the DPR The findings and recommendations from the gender analysis during project planning and feedback from beneficiaries during implementation must be discussed thoroughly to determine the need for further action. Listed below are the key action points:

General Checklist
- Identify key gender and women‘s participation issues.
- Identify the role of gender in the project objectives.
- Prepare terms of reference (TOR) for the gender specialist or social development specialist of the client
- Conduct gender analysis as part of overall Social Assessment.
- Draw up a socioeconomic profile of key stakeholder groups in the target population and disaggregate data by gender.

- Examine gender differences in knowledge, attitudes, practices, roles, status, wellbeing, constraints, needs, and priorities, and the factors that affect those differences.
- Assess men's and women's capacity to participate and the factors affecting that capacity.
- Assess the potential gender-differentiated impact of the project and options to maximize benefits and minimize adverse effects.
- Identify government agencies and nongovernmental organizations (NGOs), community-based organizations (CBOs), and women's groups that can be used during project implementation. Assess their capacity.
- Review the gender related policies and laws, as necessary.
- Identify information gaps related to the above issues.
- Involve men and women in project design.
- Incorporate gender findings in the project design.
- Ensure that gender concerns are addressed in the relevant sections (including project objectives, scope, poverty and social measures, cost estimates, institutional arrangements, social appendix, and consultant's TOR for implementation and M & E support).
- List out major gender actions.
- Develop gender-disaggregated indicators and monitoring plan.

III. Public Hearing of Resettlement Action Plan:

The consultant will assist project authorities in conducting public hearing on an advanced draft RAP. The draft RAP should be presented at a public hearing at island level for soliciting comments from potentially affected persons and other community members. The RAP will be finalized after taking into account the proceedings of public hearing.

IV. Disclosure of Social Action Plan:

The consultant will also assist project in disclosure of draft SAP documents including RAP, and GAP in all major affected settlements and at island and country level. The disclosure will be in local language and minutes of the meeting will be annexed in the final SAP documents.

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