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Environmental Management Framework

Marine Conservation and Climate Adaptation Project

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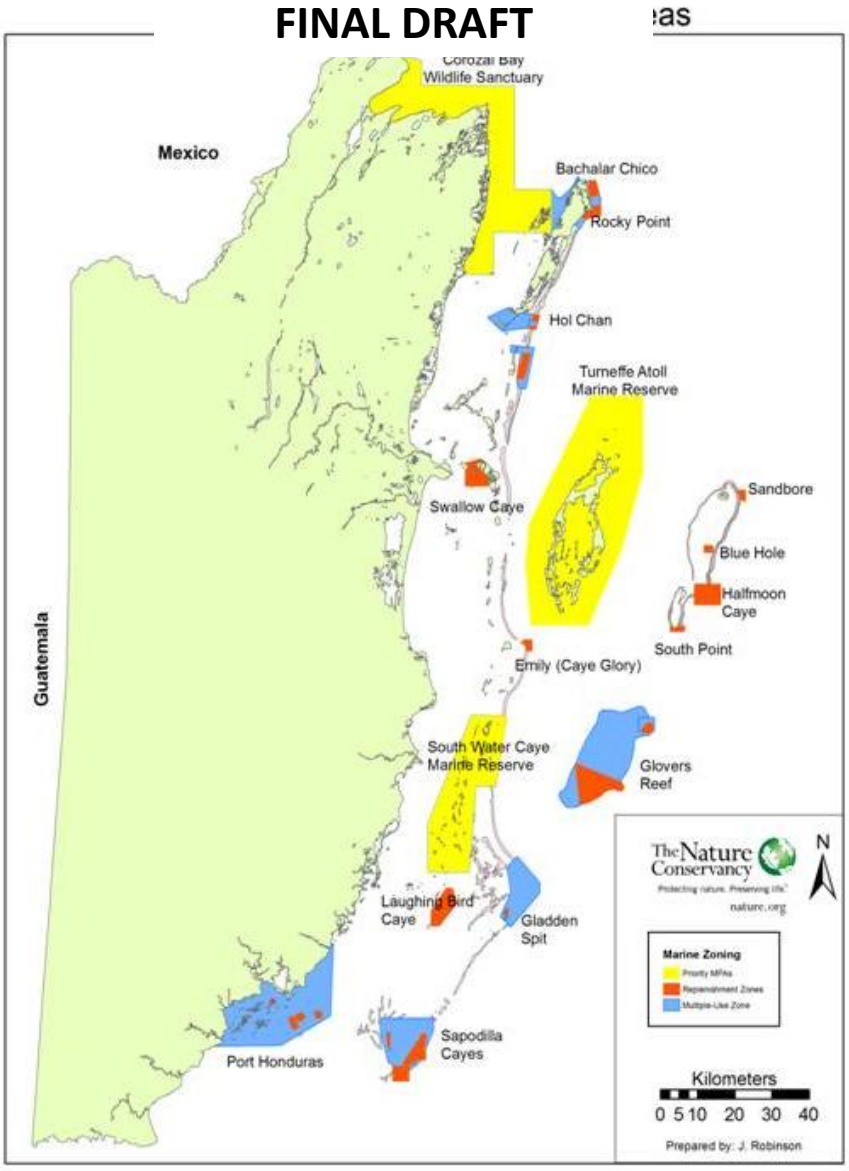
FINAL DRAFT



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FOREWORD

The Ministry of Forests, Fisheries and Sustainable Development (MFFSD) with fiduciary assistance from Protected Areas Conservation Trust (PACT) as the National Implementing Entity (NIE) and the World Bank as Multilateral Implementing Entity (MIE), proposes to implement the Marine Conservation and Climate Change Adaptation Project (MCCAP) in the coastal areas of Belize. The objective of the proposed MCCAP is to implement priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System and its productive marine resources.

Given the role of the World Bank as the MIE and the potential impact of the project on Belize's marine environment, the application of relevant safeguard policies is required during the implementation of the project especially in relation to Natural Habitats. This Environmental Management Framework (EMF) allows PACT and the MFFSD to guide, steer, advise, monitor and supervise key environmental considerations related to the MCCAP. The EMF aims at covering all issues of importance for different types of eligible sub-projects during all stages of the project cycle. Consequently, as need be, the EMF will be revised and adjusted to cover any lessons learnt or emerging aspects during project implementation; by its nature, it is meant to be a living document subject to continuous improvement. All changes in the EMF are subject to approval by the World Bank.

The key specific objectives of the EMF are to present:

- A basic description of the project;
- A basic environmental characterization of the MCCAP intervention areas;
- A diagnosis of the legal framework related to the environment theme in the different sectors that the MCCAP will support, and the institutional framework that will be involved during the project cycle;
- Assessment of potential adverse environmental issues or impacts commonly associated with alternative livelihood projects and the ways to avoid, minimize or mitigate them;
- Establishment of clear procedures and methodologies for environmental planning, review, approval and implementation of sub-projects to be financed under the MCCAP; and
- Specification of roles and responsibilities and the necessary reporting procedures for managing and monitoring environmental concerns arising from MCCAP sub-projects.

The EMF is intended to be used by PACT, MFFSD and the Fisheries Department and all concerned with, and in any way an active participant within, the MCCAP in Belize. The preparation of the EMF included engagement with key stakeholders. The report of the consultation with stakeholders is included at Annex 1. All other players directly involved in the execution of any subprojects within the MCCAP will be made aware of the key EMF contents before embarking on any implementation activity. The EMF must be used in all subprojects that PACT and MFFSD undertake under the MCCAP in order to improve their environmental management during the project cycle.

DEFINITIONS

Project Cycle: Means the complete process of the project life cycle, which includes project identification, pre-feasibility study, feasibility study, project design, construction, operation, and closure.

Development Project: Means projects, activities and different objects existing or being newly undertaken and which involve the use of natural resources and create direct and/or indirect impacts on the environment and/or the society.

Development Project Owner/Proponent: Means any natural person, juridical person or organizations that have the permission to study, explore, design, construct and implement a project. A project owner may come from the private sector, public/government sector or be an organization responsible for a development project.

Environmental Authority: Authority responsible for management and inspection of assessment work of impact on environment and society; in Belize, this authority is vested in the Ministry of Forest, Fisheries and Sustainable Development (MFFSD) and specifically the Department of Environment (DOE).

Project Screening: Means determination of proposed project types on whether it would be necessary or not for them to proceed with initial assessment of impact on environment and/or society or detailed environment impact assessment.

Scoping for TORs: Means process of determination of essential impact that requires an environmental study; collection of necessary data to prepare a report on environmental impact assessment. The DOE will inspect and approve both the TORs and the final EIA.

Environmental Management Framework (EMF): An EMF provides guidance to the project executing agency for Environmental Assessment (EA) procedures consistent with both the World Bank as well as the Belizean procedures. It describes an EA process that should be followed in implementing the World Bank project. The Environmental Assessment Process needs to be consistent with both the Belizean and World Bank Environmental Assessment procedures. The EMF forms a part of the project's Operational Manual. Generally, a good EMF describes the steps to be taken in the EA process and for each step; it specifies what must be done, who is responsible, and when it must be done.

Environmental Impact Assessment (EIA): Means the process of study and prediction of positive and negative impacts on environment and/or society together with determination of appropriate measures to protect against and mitigate the impact on environment and/or society from projects and different development activities.

Environment Management Plan (EMP): Means a plan stipulated in the EIA or other level of an environmental assessment to define environmental protection and impact mitigation measures; responsibilities and schedule for implementation; monitoring plan and assessment of actual impacts on environment from the project that must be done, including sufficient budget planning for environmental activities required during construction stage, operation and project termination.

Environmental Monitoring: Means monitoring and evaluation of different development projects, including implementation of EMPs in accordance with agreed and officially approved processes and defined environmental quality criteria.

Environmental Safeguard Policies: The World Bank's environmental and social safeguard policies are a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. The effectiveness and development impact of projects and programs supported by the Bank has substantially increased as a result of attention to these policies. Safeguard policies have often provided a platform for the participation of stakeholders in project design, and have been an important instrument for building ownership among local populations.

ACRONYMS

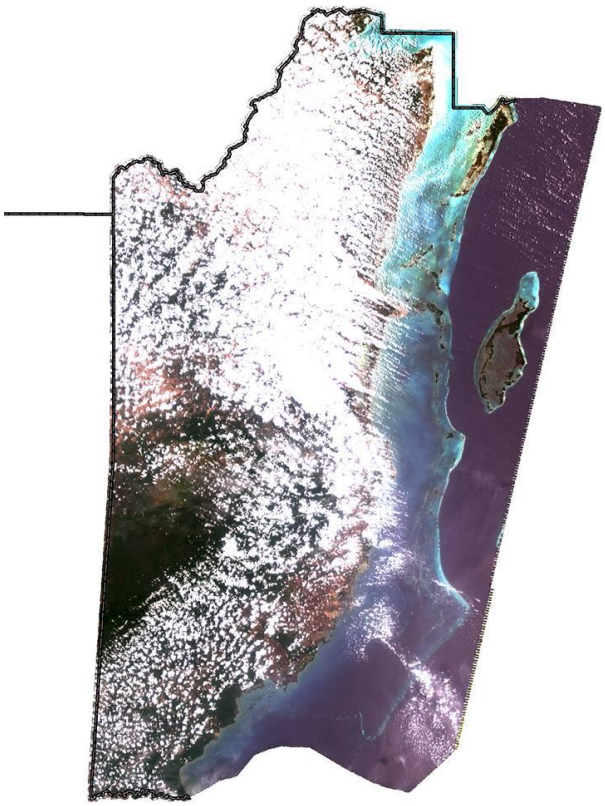
ALIDES	Alliance for Sustainable Development
BAHA	Belize Agriculture Health Authority
BTB	Belize Tourism Board
CBWS	Corozal Bay Wildlife Sanctuary
CZM	Coastal Zone Management
CZMAI	Coastal Zone Management Authority and Institute
DOE	Department of the Environment
DRM	Disaster Risk Management
EA	Environmental Assessment
ECF	Environmental Categorization Form
ECP	Environmental Compliance Plan
EFR	Environmental Final Report
EFUR	Environmental Follow-up Report
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EPA	Environmental Protection Act
FAO	Food and Agriculture Organization of the United Nations
FD	Belize Fisheries Department
GDP	Gross Domestic Product
GOB	Government of Belize
ICZM	Integrated Coastal Zone Management
IPCC	Intergovernmental Panel on Climate Change
IPMP	Integrated Pest Management Plan
IUCN	World Conservation Union
LLES	Limited Level Environmental Study
MCCAP	Marine Conservation and Climate Adaptation Project
MDGs	Millennium Development Goals
MFFSD	Ministry of Forests, Fisheries and Sustainable Development
MIE	Multilateral Implementing Entity
MNRE	Ministry of Natural Resources and Environment
MPA	Marine Protected Area
NEAC	National Environmental Appraisal Committee
NEMO	National Emergency Management Organization
NIE	National Implementing Entity

NMS	National Meteorological Service
NPAPSP	National Protected Areas Policy and System Plan
NPAS	National Protected Areas Secretariat
NPASP	National Protected Areas System Plan
PACT	Protected Areas Conservation Trust
PCB	Pesticides Control Board
PESF	Project Environmental Screening Form
PF	Process Framework
PIAG	Project Implementing Agency Group
PSC	Project Steering Committee
SACD	Sarteneja Alliance for Conservation and Development
SEA	Strategic Environmental Assessment
STO	Senior Technical Officer
SWCMR	South Water Caye Marine Reserve
TAMR	Turneffe Atoll Marine Reserve
TRIGOH	Tri-national Alliance for the Gulf of Honduras
UNDP	United Nations Development Project
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCC	United Nations Framework Convention on Climate Change
WB	World Bank

1. INTRODUCTION

1.1. NATIONAL SETTING

This project will be executed in Belize, a small country in Central America. The National Development Framework 2030 vision[1] for Belize states that "Belize is a country of peace and tranquility, where citizens live in harmony with the natural environment and enjoy a high quality of life. Belizeans are an energetic, resourceful and independent people looking after their own development in a sustainable way."



1.1.1. PHYSICAL LOCATION

Located in Central America, Belize lies between 15° 52' and 18° 30' North Latitude and 87° 28' and 89° 13' West Longitude, and is bordered by Mexico in the north and west, Guatemala in the west and south, and the Caribbean Sea to its east. Belize has a land area of 8,866 mi^2 (22,963 km^2), including over 1,000 small islands known as cayes. The total national territory, including the territorial sea is approximately 18,000 square miles (46,620 km^2) and its coast extends for 168 miles (280 km). With a population of just 327,719 (2012 est.)[2], it is the least populated country in Central America (Statistical Institute of Belize, 2011).

Belize's total land mass is divided into six (6) administrative districts, namely Corozal and Orange Walk (North), Belize (East and Central), Cayo (West and Central), and Stann Creek and Toledo (South). Topographical features divide the country's landscape into two main physiographic regions. The most visually striking of these regions is distinguished by the Maya

[1] Horizon 2030
[2] http://www.indexmundi.com/belize/demographics_profile.html

Mountains, dominating the central and western parts of the country rising to 1,124 m above sea level (3688 ft at its highest point), and the associated basins and plateaus that dominate all but the narrow coastal plain in the southern half of the country. The second region comprises the northern lowlands, along with the southern coastal plain. Approximately 69% of the country remains under natural vegetation cover with 39.1% of its terrestrial area is protected forest (much of it incorporated into the Mesoamerican Biological Corridor).

Despite its relatively small size, Belize is home to the largest barrier reef in the Western Hemisphere, second in size only to the Great Barrier Reef of Australia. Belize's reef system forms part of the Mesoamerican Barrier Reef System and has seven of its sites designated as World Heritage Site status by UNESCO in recognition of the group's extremely rich biodiversity and consequent global importance. The country is also endowed with a rich and diverse flora and fauna, comprising of at least 1,014 native species of vertebrates and 3,750 species of plants. The flora and fauna form parts of various ecosystems which are characterized in 65 Terrestrial classes, 14 Marine classes, 7 Agriculture/silviculture/mariculture classes, 6 Mangrove classes, 3 Inland water classes, and 1 urban class (Forest Department, 2005).

As a measure to protect its biodiversity and ecosystems, Belize designated 94 protected areas covering 34.9 % of the country's total land area, while the marine protected areas represent 10.6% of the country's total territorial waters (Land Information Center 2009).

1.1.2. GEOLOGY

Belize's continental shelf underlies the entire coastline and extends 15-40 km seaward from the coast. It is a complex underwater platform of Pleistocene limestone rock that ends abruptly on top of a prominent northeast-southwest fault, the first of three, running parallel to the coast, forming an escarpment that drops off to a depth of approximately 1km. An extensive reef system developed upon the rim of this escarpment, forming the Belize Barrier Reef (Rath, 1996). The second ridge supports Turneffe Atoll, and the third, Lighthouse Reef and Glover's Reef Atolls, then extending southward to eventually underlie the Barrier Reef south of Gladden Spit and South Water Caye Marine Reserve. Beyond this, a further two deeper ridges fall into the Cayman Trench that reaches depths of up to 7.5 kilometers[3].

[3] Wildtracks 2009

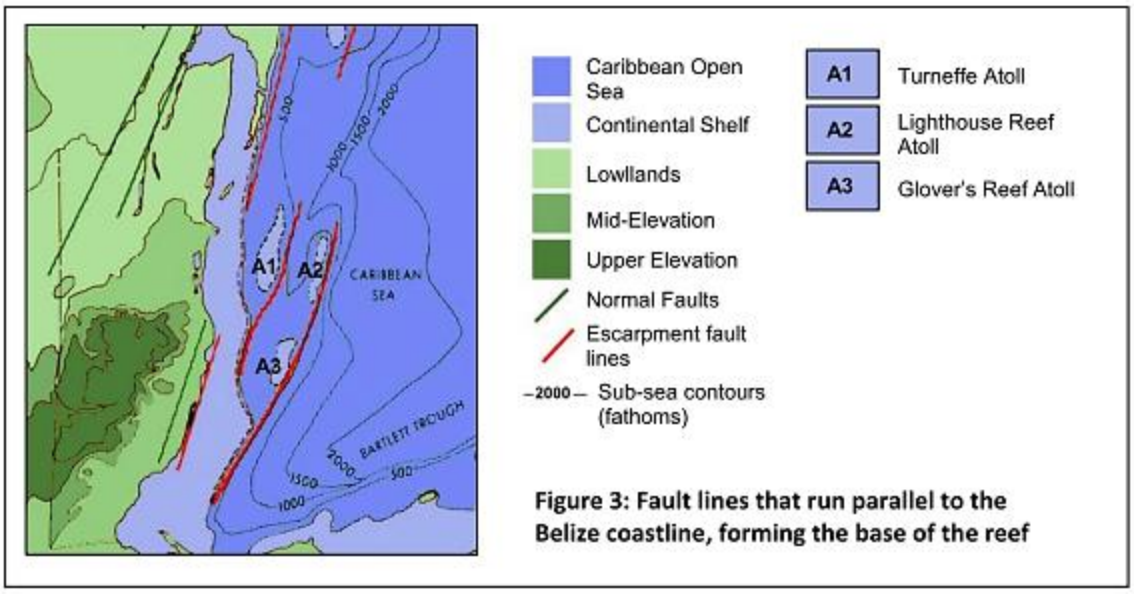


Figure 3: Fault lines that run parallel to the Belize coastline, forming the base of the reef

Source: Wildtracks 2009

1.1.3. CLIMATE

Belize's climate is classified as being tropical to extra-tropical, which is attributable to the intrusion of cooler continental air from the north during winter months facilitated by the large landmass of neighbouring Mexico. The climate is characterized by marked wet and dry seasons separated by a cool transitional period and temperatures ranging from 21 to 32 degrees Celsius. The annual mean humidity is 81.1%. Northern Belize supports and average annual of about 60 inches, rainfall rises to 150 inches in southern Belize. This dramatic increase is the result of the orographic effect of warm moist tropical air moving in from the east and rising over the Maya Mountains that increases the intensity of the rainfall. Approximately 60% of the annual rainfall occurs in the rainy season which begins in Toledo in mid-May and moves northward to Corozal by mid-June. The average temperature in Belize is approximately 80 degrees Fahrenheit with average highs of 85° and a mean low of 73°. On average, 12 cold fronts cross the country each year lowering temperatures into the 40s.

Belize's climate is influenced by three large global/ regional climatic systems inclusive of the Atlantic Ocean Climatic System, the Pacific Ocean Climatic system and also periodically by changes in the North American weather systems.

The global average surface temperature has increased by 1.4 degrees Fahrenheit from 1850 to 2005 and the rate of rise is increasing. In the last 30 years this warming has been widespread across the globe but it has been greatest at the higher northern latitudes. Initial studies for Belize have uncovered an alarming find in that the temperature in Belize is rising faster than the global average (Belize Meteorology Office). The Intergovernmental Panel on Climate Change (IPCC) estimates the rate of global temperature rise per decade has been 0.23 degrees Fahrenheit for the past 50 years and 0.32 degrees for the past 25 years. The rate of increase in Belize for the past 40 years has been 0.40 per decade along the coast and 0.45 in the interior, exceeding both the global 50-year and 25-year trends. Belize is the 8th ranked country from 167 for climate risk, according to the World Bank.

1.1.4. HYDROLOGY

Belize has a total of 18 major river catchments with another 16 sub-catchments, which drain the

Maya Mountains and discharge into the Caribbean Sea. Boles (1999) identifies 16 principal watersheds which he roughly grouped into six main watershed regions based on general characteristics of topography, geology, soils, rainfall and land use. These watershed regions include: the Northern Watershed Region, the Northeastern, the Central, the Southeastern, the Southwestern and the Southern Watershed Region.

The renewable internal freshwater resources per capita (cubic meters) in Belize were 48.02 thousand cubic meters in 2009, according to a World Bank report, published in 2010. This is down 3.2% from the 49.6 thousand cubic meters reported in 2008. In additions to the countries rivers, numerous freshwater and brackish water lakes or lagoons are across the country's low lying coast.

Groundwater is a vital source for freshwater in rural Belize, where almost 95% of the freshwater supply comes from groundwater (Rural Water Unit, Ministry of Rural Development). It is important to note however that the existing groundwater aquifers and their annual recharge rate have not been adequately quantified. Belize's actual use of total renewable water sources is 1%.

1.2. ENVIRONMENTAL ISSUES AND TRENDS IN BELIZE'S COAST

Belize faces increased threats of land degradation and environmental degradation primarily associated with the expansion of agriculture, housing, and tourism; the current economic situation poses even greater challenges in maintaining a healthy environmental and natural resource base.

1.2.1. LAND RESOURCE MANAGEMENT/LAND USE MANAGEMENT

There is no single answer to the issues of land management and planning. The perceived problems range from the reducing availability of land resources, insecure land ownership, conflicts on land ownership, inaccuracy of land surveys, environmentally unsafe developments, agricultural development on unsuitable soils, housing development on unsuitable (wet, swampy, or mangrove) sites, inequitable distribution of land resources and the illegal squatting on privately held and government held land. These are some of the issues, which continue to be high on the list of matters requiring resolution at a countrywide level. However, Belize has certainly made some goods strides by developing and endorsing a national land use policy and planning framework for land resource development. It is expected that this land use policy will guide Belize towards an environmentally and socially responsible use of land resources.

The coastal zone of Belize displays the highest concentration of development in the country. Although the greater proportion of the population lives in coastal areas, development is not limited to residential activities. Rapid industrial and agricultural expansions have occurred in this zone, some causing negative impacts on the ecosystem, while some may not prove to be sustainable because of the nature of the area. The last decade has seen a rapid increase in both the number of tourism-related development projects, and the growth of the aquaculture industry, particularly in the proliferation of shrimp farms. There have been a number of initiatives designed to manage the Belize coastal zone. Comprehensive research and monitoring programmes for coastal and marine resources have been developed and continue to be developed, and the Government of Belize (GOB) has developed national capabilities to ensure

sustainable harvesting and processing of fisheries. Belize is also in the process of finalizing an integrated coastal zone management (ICZM) plan that will aid sustainable management practices along Belize's coast. The ICZM Plan was completed in 2013, and is awaiting the approval of Cabinet. Such approval is expected by the end of November 2014.[4]

1.2.2. MANGROVE COVER

In terms of Belize's mangrove cover - which includes not only of mangrove 'forest' but also scrubs and savannas, among others - was reported to be 3.4% of land cover (78,133 ha) of which 25.5% of this occurred in the offshore areas (Zisman, 1990). In 2006, Cherrington reported that 3.3% remained accounting for 67,194 ha. The areas offshore had the larger decrease in population (3.79%) while on the mainland the decrease in population was 1.07%. In total, there was an approximately 11,939 ha loss with almost equal amounts (50%) resulting from human activity and storm damage. Analyzing Landsat images from various sources in 2010, Cherrington et al., determined that 74,684 ha of mangroves were still intact, these were later validated by Cho-Ricketts and Cherrington in 2011. Thus the average annual loss of mangroves from 1980–2010 is estimated at 135 acres of mangrove per year lost due to human activity, much of which is associated with tourism developments occurring in coastal areas.

1.2.3. COASTAL AND MARINE RESOURCES

Coastal and marine ecosystems (in particular the Belize Barrier Reef system) are very important to the Belize economy (BTB 2010). The reef is functionally integrated into the social and macro-economic picture of the nation where it contributes significantly to employment, food security, GDP, foreign exchange earnings, and is really the basis of the country's national fishing industry and to a large part of tourism, accounting for 22% of all tourist visitations.

The Belize Barrier Reef System contains an intact ecosystem gradient ranging from the terrestrial to the deep ocean, including littoral forest, wetlands, and mangrove ecosystems to seagrass beds interspersed with lagoonal reefs to outer barrier reef platform and oceanic atolls. This ecological gradient provides for a full complement of life-cycle needs that support critical spawning, nesting, foraging, and nursery ecosystem functions. Maintenance of these ecological and biological processes can help ensure that Belize has robust and resilient reefs.

The value of reef and mangrove related fisheries, tourism and shoreline protection services has been estimated at around US $395 - $559million (Cooper et al 2007). In addition, in terms of national employment, reef related tourism is believed to employ 20% of Belize's national workforce" (Wade 2012).

Species such as the spiny lobster, shrimp, and queen conch are in demand both on the local and foreign markets. These species are the main targeted species harvested by local fishermen as a main source of income. These species, although sold locally, are primarily harvested for the export markets. Export statistics are indicating that the spiny lobster, shrimp, and queen conch are possibly being exploited beyond sustainable thresholds. To address the situation, Belize has recently amended its fisheries legislation (Living Aquatic Resources Bill) which will help to address the issues of dwindling stocks and smaller sizes once it is enacted.

[4] Personal communication with Vincent Gillett, CZMAI CEO (November 6, 2014)

Recently, oil exploration has raised various issues of concern about possible impacts to the marine environment, namely Belize's most precious natural resource – the Belize Barrier Reef. Much concern has centered on the possible devastating impacts an oil spill could have on Belize's very sensitive marine ecosystem whereby it could destroy the tourism and fishing industry and by extension the entire Belizean economy. The Belize Coalition to Save Our Natural Heritage, a recently formed group of concerned civil society organizations, is advocating a ban on all offshore oil drilling and a ban of all oil exploration and exploitation in protected areas.

1.2.4. WATER RESOURCES

Due to its geographic location, low population, relatively high level of forest cover, and 18 different water catchment areas, Belize is said to have one of the highest volumes of freshwater availability per capita in Latin America (National Meteorological Service, 2010). However the value for renewable internal freshwater resources per capita (cubic meters) in Belize stood at 48,019 as of 2009. Over the past 22 years this indicator reached a maximum value of 91,324 in 1987 and a minimum value of 48,019 in 2009, indicating a steady decline over the years (See Figure 1.5).

Presently however, increases in demand due to expansion in the agricultural, industrial and tourism sectors along with a growing population and accompanying water pollution and watershed destruction make it imperative that urgent attention be given to the proper management, use and understanding of the freshwater resources. The National Integrated Water Resource Management Policy (2008) highlights that there is a need to conduct a proper and comprehensive assessment of water resources and develop baseline of water quality for the various uses of water.

1.2.5. POLLUTION

Pollution of Belize's natural environment has three main sources: solid waste disposal, industrial effluents and unsustainable agrochemical input. Environmental contamination is also directly related to the contamination of water resources as a point source of pollution. Contamination of natural systems can also come from anthropogenic sources, such as the removal of vegetation cover and urbanization.

Belize has no heavy industry and has remained relatively free of industrial contamination. However, significant contamination has resulted from the sugar processing industry in the north, which has contaminated the New River and potentially the northern marine environment. In the south, the citrus and banana industries has contaminated (to a certain extent) the Stann Creek River and offshore marine environment. Heavy metal contamination has been detected at the mouth of the Belize River and along the Haulover Creek (Gibbs & Guerra, 1996), although the source of this contamination has not been scientifically ascertained. However, this type of contamination has been determined to be transported largely by river sediments. Dredging activities and use of dredged material as a source of fill in low-lying areas may result in the transportation of contaminated sediment to coastal sites.

It is widely accepted that nutrient enrichment of water bodies comes from various non-point sources, including agriculture run off, sewage, and sediment and silt loss due to deforestation. Agrochemical use in Belize is extensive. Agrochemicals are used in most industries undertaking agriculture and farming practices.

Some activities occurring as a result of urbanization or commercial activities have direct impact on watersheds. Logging, mining, residential development and agriculture lead to erosion and siltation of streams and waterways, which may impact the surrounding environment. Land clearing of slopes and on the edges of waterways contribute to soil loss, siltation and transportation of dust to residential and other areas.

1.2.6. REGIONAL AND TRANSBOUNDARY ISSUES

In terms of transboundary issues, Belize has signed several important agreements on biodiversity, including the Central American Convention on Biological Diversity Protection and the protection of Priority Protected Areas of Central America, the Alliance for Sustainable Development (ALIDES) signed in 1994, the Tri-national Alliance for the Gulf of Honduras (TRIGOH), and the Tri-national Alliance for the Selva Maya. These initiatives assist in the reduction of land-based sources of marine pollution, and sustainable development of transboundary regions in order to reduce the level of degradation to the coastal and marine environment, including the Belize Barrier Reef System.

Belize is participating in the Gulf of Honduras initiative, which is a tri-national initiative involving Guatemala and Honduras and has as its focus the use of technologies to combat environmental degradation from maritime transport and improve navigational safety to avoid casualties in the area.

1.2.7. CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC) has identified that Belize is one of those countries most vulnerable to the adverse impacts of climate change due to the following key features of the country: (i) long, low-lying coastline; (ii) over 1,060 small islands; (iii) second-longest barrier reef in the world and 17,276 km2 of forest cover, each of which support fragile ecosystems; and (iv) the fact that the country is very prone to natural disasters, especially hurricanes (GOB, 2002). Belize is ranked 8th from 167 countries for climate risk (World Bank). Its relatively small population is exposed to the impacts of major storm systems on an average of once every three years equating to over 50 strikes since formal record keeping began in 1871 (Belize CPR profile-UNDP, 2009).

Given that approximately one half of Belize's population are concentrated in coastal population centers, and that the country's economy is highly dependent on commodity exports and tourism, the nation's economic and social exposure becomes significantly increased when one considers the compounding effects of climate change. While tropical cyclones have historically inflicted the greatest damage, a major threat is recurrent flooding due to storm surge, heavy and /or persistent rainfall and the altering of natural drainage and sink systems. Recent hydro-meteorological events have resulted in significant losses to the country's productive sectors. The vulnerability of concentrated populations in exposed areas such as in Belize City (Belize City is home to approximately one third of the country's population) is exacerbated by inadequacies in housing and support infrastructure, and environmental fragility, in part a result of its location, climate, and topography.

The 2007 Vulnerability Assessment of the Belize Coastal Zone detailed a range of possible effects, based on the scenario developed by the National Meteorological Service (NMS). According to the study, the major impacts predicted on biophysical resources will be from sea level rise, increased sea surface temperatures, changes in weather patterns and increased storm

activity. Corals are the most susceptible to increased sea surface temperature and frequent storm events. Corals will be lost due to bleaching, disease and physical damage. Mangroves and seagrass beds will be most susceptible to changes in weather patterns and storm events that will result in physical damage and changes in biological processes such as reproduction. Mangroves are expected to retreat sequentially to maintain their position within the ecosystem. Coastal areas, beaches and cayes will be most susceptible to increasing sea levels and increase in storm events. These areas would suffer from inundation, erosion and storm surges. The socioeconomic impacts will be from loss of habitat and coastal areas which in turn will directly affect the tourism and fisheries industries.

1.3. NATIONAL POLICY RESPONSES

The drivers of economic growth and prosperity and the pressures they exert on the natural resources and the environmental integrity of a country are normally counteracted via national policies and institutional responses, which aim to strike a balance between both. Such is even more important within coastal environs.

Contributing to the conservation framework of Belize is a number of laws designed to protect wildlife and national heritage. Enforcement of these laws are carried out by specific regulatory agencies such as – the Fisheries Department (Aquatic Resources Bill), the Forest Department (Mangrove Regulations), Department of the Environment (Environmental Protection Act and development regulations), and Geology and Petroleum Department (dredging, mining and oil exploration). The Coastal Zone Management Authority and Institute, as mandated under the CZM Act, supports these efforts by carrying out monitoring, planning and coordination to ensure that activities within the coastal zone are sustainable. These laws are discussed later in this document as they pertain to the EMF for the MCCAP.

1.3.1. COASTAL AND MARINE RESOURCES

The Fisheries Department (FD) is the primary national authority responsible for the monitoring and management of Belize's coastal and marine resources and is responsible for the administration of the Aquatic Living Resources Bill which focuses on ensuring the sustainable management of the fishing industry and allows for the establishment and management of marine and coastal protected areas. To ensure the conservation and sustainable exploitation of the spiny lobster, shrimp, and queen conch, the Fisheries Department applies restrictions as they relate to size, harvesting seasons, and production quota. The Fisheries Department has also introduced recent legislation to improve and enhance the status of key species identified as being threatened. Regulations were enacted to totally protect herbivores such as the *Scaridae* and *Acanthuridae* families. These species were deemed as being extremely vulnerable to fishing and are very important to the general health of the barrier reef and species associated with it.

The Belize Aquatic Resources Bill also makes provision for the designation on marine reserves to assist in the management, maintenance and sustainable yield of fisheries resources. Permits for sustainable extraction, research, education, and marine recreational tourism are allowed.

As a result of the multiple uses and increasing demand for coastal lands, the Government of Belize (GOB) passed the Coastal Zone Management (CZM) Act in 1998 to address issues such as rapid development, over-fishing, and population growth. The Act was enacted to promote sustainable development of the coastal areas and associated marine areas through coordination of existing legislation affecting coastal resources and through the building

of capacity and expertise to manage coastal areas. The Coastal Zone Management Authority and Institute (CZMAI) under the CZM Act, was tasked with developing a national integrated coastal zone management plan (ICZM) for Belize. The CZMAI has been making good strides with respect to this. A final version of the Plan was completed in 2013, and awaits Cabinet's approval, which is expected by the end of November 2014.[5] It is expected that the ICZM Plan will help to ensure environmental sustainability in Belize's coastal areas.

The Belize Environmental Protection Act (EPA) provides guidelines and regulations for any undertaking that may, in the opinion of the Department of Environment (DOE), have a significant environmental impact in order to ensure "the protection and rational use of natural resources…."[6] The Act grants the DOE broad regulatory and enforcement authority for the prevention and control of environmental pollution, conservation, and management of natural resources, and environmental impact assessment (EIA). All development activities in country must first be granted environmental clearance from the DOE as mandated by the EPA. The DOE is also responsible for mandating the Environmental Impact Assessment (EIA) and Environmental Compliance Plan (ECP) processes.

The Geology and Petroleum Department, as mandated by the Mines and Minerals Act and Petroleum Act, provides management oversight for all dredging, mining and oil exploration initiatives in country. A license must be received from this department prior to embarking on any of these initiatives. These initiatives are also required to go through the environmental clearance process managed by the DOE.

1.3.2. WATER RESOURCES

An Integrated Water Resource Management Policy has been accepted by Cabinet. In 2011 the GOB enacted the National Integrated Water Resources Act which will require much support in the implementation of its objectives. This law provides for the management, controlled allocation and the sustainable use and protection of the water resources of Belize. It also provides for the establishment of a National Integrated Water Resources Authority to coordinate and assist in regulating the water sector.

Support will be required in the strengthening of the institutions to more adequately address the objectives of the integrated water resources policy and legislation and to better manage this most important resource which in Belize is often taken for granted and is very much undervalued. An Integrated Water Resource Management project funded by the UNDP and European Union will assist in helping to achieve equitable allocation, capacity development, and implementation of integrated approaches to water resources management through adaptive water governance to reduce poverty and vulnerability, sustain and enhance livelihoods and protect environmental resources.

1.3.3. DISASTER RISKS AND CLIMATE CHANGE

Responding to Belize's climate vulnerabilities requires making simultaneous advances on adaptation, disaster risk reduction, environmental sustainability and poverty reduction. This requires an integrated approach which addresses the underlying causes of disaster risk, seeks to improve preparedness for future disasters, and ensures integration and alignment with national

[5] Personal communication with Vincent Gillett, CZMAI CEO (November 6, 2014)
[6] EPA (Rev. Ed. 2000-2003)

developmental programmes and Millennium Development Goals (MDGs) with respect to the environment. Belize's disaster risk management framework is principally framed by the Disaster Preparedness and Response Act of 2002, which established the National Emergency Management Organization (NEMO). NEMO's formal mandate is to coordinate the general policy of the government related to the mitigation of, preparedness for, response to and recovery from emergencies and disasters. The policy framework is, however, believed to be fragmented, and that public sector organization approach has been predominantly focused on the emergency management cycle. An important step was the 2006 National Hazard Mitigation Policy, an effort which sought to formulate an integrated approach to hazard risk management and sustainable development, with a national, sectoral and community dimension. In 2007, Belize adopted a 10-year National Hazard Mitigation Plan to implement the policy, which sought to ensure a more integrated, coordinated and multi-sectoral approach to hazard mitigation. Several other key national policy documents explicitly promote the integration of Disaster Risk Management (DRM) into the planning process. More explicit integration of the broader mandate of adaptive capacity to climate change is an ongoing challenge.

1.4. THE ENVIRONMENTAL MANAGEMENT FRAMEWORK

1.4.1. LEVEL OF ENVIRONMENTAL ASSESSMENT AND MITIGATION MEASURES

The appropriate level of environmental assessment (EA) and mitigation measures to be applied under the MCCAP could range from the sole application of an initial Project Environmental Screening Form (PESF – Annex 2) and implementation of good environmental practices, to the preparation of a comprehensive EIA Report and implementation of particular mitigation measures. The environmental and social screening process to be applied by the MCCAP is consistent with Belize's environmental policies and laws as discussed in this EMF, as well as with the Bank's Operational Policy 4.01 on Environmental Assessment. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts in its area of influence. OP 4.01 covers impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary and global environment concerns.

This project has been classified as Category B and thus a partial EA was required during project preparation and will be required during preparation of the sub-projects. According to the Policy, a project is classified as Category B if:

"Its potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects. The scope of EA for a Category B project may vary from project to project, but it is narrower than that of a Category A Environmental Assessment (EA). As in a Category A project, the EA examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The findings and results of Category B EA are described in the project documentation".

It is possible that the MCCAP will have some localized adverse environmental and social impacts that would require the application of appropriate mitigation measures. The PESF will

enable sub-project implementers to identify, assess and mitigate potential negative environmental impacts; to determine if a full EA is necessary; and to apply appropriate mitigation measures.

1.4.2. PREPARATION AND USE OF THIS FRAMEWORK

This EMF provides a guide to be used within the framework of existing Government Policy regulations for environmental processes and the Bank's safeguard policies. This EMF is a living document that will be subject to periodic review to address specific concerns raised by stakeholders, and emerging policy requirements. It will complement the environmental impact assessment and environmental audits guidelines provided for operationalization by provisions of the Environmental Protection Act (Rev. Ed. 2000-2003).

1.4.3. PURPOSE OF THIS EMF

The Environmental Protection Act and the EIA Regulations of Belize provide the general framework and procedures for carrying out EA and environmental management (EM) of development activities of all sectors.

All projects receiving World Bank financing must adhere to the Bank's environmental and social safeguards policies (see chapter 3.1). A framework approach is used in the case of investment operations with multiple sub-projects which are not definitively selected for inclusion in the project, prior to the start of project appraisal.

The EMF spells out an environmental safeguard policy framework, institutional arrangements, and capacity available to identify and mitigate potential safeguard concerns and impacts of each sub-project. This ensures that the sub-projects meet the national and local environmental requirements and are consistent with the applicable safeguard provisions of the Bank.

The EMF has been prepared with a view to providing mechanisms for resolving all adverse environmental impacts while enhancing positive benefits that may emanate from implementation of MCCAP activities. The EMF therefore, will provide a framework for environmental management in the development of MCCAP sub-projects.

Given the role of the World Bank as the MIE and the potential impact of the project on Belize's marine environment, the application of relevant safeguard policies is required during the design and implementation of the sub-projects especially in relation to Natural Habitats. This process will be facilitated through the development and implementation of an Environmental Management Plan (EMP) for each sub-project. The EMF discussed herein provides guidance to the project executing agencies (i.e., PACT and MFFSD) for EA procedures consistent with both the WB as well as the Belize procedures that need to be followed in implementing the MCCAP. Wherever there are differences between the national regulations and the WB policies, the stricter of the two shall prevail. The EMF forms a part of the project's Operational Manual. Generally, a good EMF describes the steps to be taken in the EA process and for each step; it specifies what must be done, who is responsible, and when it must be done. This EMF allows PACT and the MFFSD to guide, steer, advise, monitor and supervise the key environmental considerations related to the MCCAP.

As its strategic basis, the present EMF aims at promoting the three interlinked principles of Ecosystem Approach to Aquaculture (EAA) [7] during project implementation to ensure aquaculture contributes positively to sustainable development:

Principle 1: *Aquaculture development and management should take account of the full range of ecosystem functions and services, and should not threaten the sustained delivery of these to society.*

Developing aquaculture in the context of ecosystem functions and services is a challenge that involves defining ecosystem boundaries (at least operationally), estimating some assimilative and production carrying capacities, and adapting farming practices accordingly. The mix of ecosystem services will depend on wider management practices and the trade-off among different services must be acknowledged. This is especially important in the case of ecosystem functions that are unique, essential or threatened to ensure their preservation.

Principle 2: *Aquaculture should improve human well-being and equity for all relevant stakeholders.*

This principle seeks to ensure that aquaculture provides equitable opportunities for development and equitable sharing of its benefits. This includes ensuring that it does not result in any undue detriment for any groups within society, especially the most vulnerable. Both food security and safety are to be promoted as key components of well-being.

Principle 3: *Aquaculture should be developed in the context of other sectors, policies and goals.*

This principle recognizes the interactions between aquaculture and the larger system, in particular, the influence of the surrounding natural and social environments on aquaculture practices and results. This principle also acknowledges the opportunity of coupling aquaculture activities with other production sectors to promote materials and energy recycling and better use of resources in general. Principle 3 is a call for the development of multisectoral or integrated planning and management systems. However, we should make clear that this principle mostly applies to those aspects that are within the ability of the aquaculture sector to change or modify.

1.4.4. EMF SCOPE

The Government of Belize, through the MFFSD and the Ministry of Natural Resources and Agriculture (MNRA), employs a number of guidelines (standards) and tools to safeguard Belize's environment from impacts associated with the varied socioeconomic development practices/projects in the country. The aim is to foster prudent use and proper management of the country's natural resources through preservation, protection and improvement of the environment and the control of pollution. Some of the guidelines/tools that relate to the MCCAP include: 1) environmental checklist, e.g., for agriculture and tourism projects [8], and 2) environmental impact assessment (EIA) in which project developers are asked to map out all environmental impacts of a potential project prior to project implementation phase so as to ensure that practical measures to prevent or mitigate any adverse environmental effects are adequately addressed beforehand. Another key tool used by the Belize government is the environmental compliance plan (ECP), which helps to ensure compliance during project

[7] http://www.fao.org/docrep/013/i1750e/i1750e00.htm
[8] Appendix I of http://www.doe.gov.bz/index.php/services/publications/doc_download/118-procedures-manual-for-the-preparation-of-an-environmental-impact-assessment-in-belize

implementation and throughout project implementation. Project implementers will work closely with the varied government permitting entities to ensure that MCCAP sub-projects comply with these national environmental standards and guidelines.

This EMF covers all issues of importance for the different types of eligible sub-projects during all stages of the project cycle to facilitate compliance with Belize's environmental laws and the World Bank's applicable Environment Safeguard Policies on Environmental Assessment, Natural Habitats, Forests, Pest Management, and Physical Cultural Resources.

The specific objectives of the EMF are to present:

- A basic description of the project;
- A basic environmental characterization of the MCCAP intervention areas;
- A diagnosis of the legal framework related to the environment theme in the different sectors that the MCCAP will support, and the institutional framework that will be involved during the project cycle;
- Assessment of potential adverse environmental issues or impacts commonly associated with alternative livelihood projects and the ways to avoid, minimize or mitigate them;
- Establishment of clear procedures and methodologies for environmental planning, review, approval and implementation of sub-projects to be financed under the MCCAP; and
- Specification of roles and responsibilities and the necessary reporting procedures for managing and monitoring environmental concerns arising from MCCAP sub-projects.

The EMF is intended to be used by PACT, MFFSD and all concerned with, and in any way an active participant within, the MCCAP in Belize. This EMF is focused on addressing the potential environmental impacts from the project's implementation. It is an internal instrument to be applied by the institutions responsible for the project's implementation. In this case, the EMF will be applied by the PACT and MFFSD. Additionally, this instrument will also be applied at the local level by the targeted marine protected areas (MPAs), the CZMAI, and other project beneficiaries as the process requires.

This instrument has been developed with the support and coordination of the PACT and MFFSD, including the CZMAI, Fisheries Department and the Department of Environment.

These key stakeholders involved in the MCCAP attended a consultation session (see Annex 1) on the content and usage of the draft EMF and to understand its main contents, as well as ways that they can continue to be engaged. Additionally, the draft EMF was shared with the DOE, which provided comments that have been integrated into this revised draft EMF. All other players directly involved in the execution of any sub-projects within the MCCAP will be made aware of the key EMF contents before embarking on any implementation activity. The EMF must be used in all sub-projects that PACT and MFFSD undertake under the MCCAP in order to improve their environmental management during the project cycle.

1.4.5. APPLICATION OF THE EMF

Responsibility for environmental management, while taking into consideration the concerns of all stakeholders to the MCCAP, will lie with the implementing agencies who will be liable for planning and supervising environmental mitigation at the design, construction and operation

phases of sub-projects with oversight supervision from MFFSD/Fisheries Department and the Project Implementing Agency Group (PIAG). Section 5.1.2 provides details on the entities that will bear responsibility for environmental monitoring and implementation of mitigation measures related to the MCCAP.

2. THE PROJECT

2.1. INTRODUCTION

Climate change is considered one of the most serious challenges of our time and a large-scale global problem that involves complex interactions between climatological, environmental, economic, social, political and institutional processes. According to the Intergovernmental Panel on Climate Change (IPCC 2007)[9], vulnerable nations such as Belize are expected to experience an increase in temperature and corresponding decrease in soil humidity which could lead to tropical rainforests being gradually replaced by savannahs, semiarid vegetation gradually replaced by arid land vegetation, significant losses of biological diversity with extinction of species in many areas, and decreased productivity in fisheries and agriculture sectors with adverse consequences for food security. In additional to the aforementioned, an increase in sea level could cause more floods, storm surges, erosion and other dangerous coastal phenomena, and the deterioration of conditions on the coast, for example as a result of beach erosion or coral bleaching, would affect local resources. The UNFCCC recognizes Belize as one of those countries most vulnerable to the adverse impacts of climate change due to it: (i) having a long, low-lying coastline, (ii) having over 1,060 small islands, (iii) having the second longest barrier reef in the world (and the largest reef in the Western Hemisphere and the Americas), and 17,276km^2 of forest cover, each of which support fragile ecosystems, and, (iv) being very prone to climate-related disasters, especially hurricanes. Hence the vulnerability of the country to the foreseeable adverse physical, environmental, and economic impacts of climate change indicates that priority attention must be directed towards implementation of viable adaptation measures targeting the most vulnerable sectors and ecosystems. Belize's vulnerability is made more acute by development pressure that is a characteristic of coastal areas. This goes along with less than ideal resource governance levels, lack of suitable land-use plans, and the fact that a lot of inhabitants depend on natural resources for their subsistence. Vulnerability is also affected by the status of natural resource bases. Working across sectors to build capacity to adapt to changes is particularly important, as many aspects of human welfare will be affected. Appropriate planning can direct adaptation responses such that natural systems are as resilient as possible or can facilitate change to new resilient natural systems. An integrated approach, involving both ecosystems and people, will have the best chance of developing adaptation responses that avoid placing additional pressures on natural systems.

While there is uncertainty about some of the impacts of climate change, the climate is changing and will continue to change which will have an impact on conservation targets and economic sectors. Adaptive management – adjusting approaches based on measured results - should be employed to account for any uncertainty associated with climate change projections. Adaptation approach should prioritize practices and initiatives that: 1) are grounded in best available knowledge on climate variability and climate change; 2) recognize that humans are part of nature; 3) are undertaken in partnership with others; 4) address uncertainty and integrates

[9] Intergovernmental Panel on Climate Change (IPCC 2007), "Fourth Assessment Report, Climate Change 2007: Synthesis Report, An Assessment of the Intergovernmental Panel on Climate Change http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf

learning; 5) work at the appropriate scale to address the problem; 6) apply appropriate and robust approaches; 7) influences policies and institutions; and 8) communicates to empower. This project takes into consideration these formative principles in it design.

The Marine Conservation and Climate Adaptation Project (MCCAP) embodies a two-track approach which combines ecosystem-based adaptation with national level enabling policy and legal frameworks as an effective long-term approach to help strengthen the resilience of the Belize Barrier Reef System to the adverse effects of climate change. The best approach to adapt to climate change requires ecosystem-based approaches that strategically plan to enhance local-scale reef resilience through targeting critical areas, building networks of protected areas that include (and replicate) different parts of the reef system, as well as include areas critical for future reef replenishment. Such efforts represent an opportunity to "buy time" for reefs, until global greenhouse gas emissions can be curbed. This project will produce long-term economic, environmental, and social benefits by addressing the challenges posed by climate change on marine ecosystems and on the livelihoods of current and future generations in Belize.

2.2. PROJECT OBJECTIVE

The overall goal of the MCCAP is to assist Belize in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures[10]. The objective of the project is to implement priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System.

The MCCAP embodies a two-track approach which combines ecosystem-based adaptation with enabling policy and legal frameworks as an effective long-term approach to help strengthen the resilience of the reef system to the adverse effects of climate change. Indeed, reef scientists recommend not only a stabilization of CO_2 and other greenhouse gas concentrations, but also a slight reduction from the current level of 388 ppm (2010) to 350 ppm, if large-scale degradation of reefs is to be avoided. Attaining this challenging target will take time, and require immense global efforts. In the meantime, the best approach to adapt to climate change requires ecosystem-based approaches that strategically plan to enhance local-scale reef resilience through targeting critical areas, building networks of protected areas that include (and replicate) different parts of the reef system, as well as include areas critical for future reef replenishment. Such efforts may represent an opportunity to "buy time" for reefs, until global greenhouse gas emissions can be curbed. Thus, this Project would produce long-term economic, environmental, and social benefits by addressing the challenges posed by climate change on marine ecosystems and on the livelihoods of current and future generations in Belize.

Investing in measures that protect and improve the ecological health of the natural ecosystems (such as the Belize Barrier Reef) is the best way to anticipate climate change while enhancing resilience to climate change impacts. While globally there has previously been heavy emphasis on engineering approaches (e.g., dikes, storm shelters, building codes and storm resistant houses, drainage canals, sea walls, etc.) to adapting to climate change related hazards (such as hurricanes and storms), empirical evidence is showing that the importance of natural ecosystem buffers and their role in climate change adaptation may indeed be higher than initially thought. Such ecosystem-based adaptation measures have little or no risk of mal-adaptation and may in fact be

[10] Belize is a developing-country among the Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change.

more cost effective. For example, a very rigorous data-rich analysis by Saudamini Das (2007)[11] sought to answer three key questions: (a) do mangroves provide storm protection?; (b) how do they fare vis-à-vis the other approaches like early warning, storm shelters, dikes, sea walls, etc?; and, (c) is mangrove preservation an economically viable adaptation strategy to climate change? The analysis empirically established that mangroves were highly effective in reducing casualties during the 1999 Super Cyclone in Orissa - India, whether of humans, buffaloes or cattle. Indeed mangrove conservation was found to be effective against the wind and wave surges during climate-related hazards which are frequent in the area. Specifically, the analysis found that: (i) mangroves reduced human death, livestock loss and house damages during the T-7 Super Cyclone of October 1999; (ii) human death toll would have been nearly doubled in the absence of mangroves; and, (iii) annualized storm protection benefit of mangroves for reducing the damages was found to be higher than annual return from land hence justifying mangrove conservation as a viable adaptation strategy to climate change. In the proposed Project intervention area in Belize, the Barrier Reef shelters the coastal zones from intense tropical storms and high velocity winds that cause erosion and coastal damage. Furthermore, it has been estimated that the value of ecosystem services (fishing, tourism, storm and shoreline protection) generated by the coral reefs and mangroves contributes between 15 and 22 percent of GDP in Belize. This shows that investing in measures that protect marine ecosystems such as mangroves and coral reefs is indeed a viable and cost-effective adaptation strategy in the face of limited resources and increasing climate change impacts.

Reducing the fishing pressure by enforcing No-Take Zones and MPAs would immediately have a positive impact on the reef ecosystem, allowing it to maintain and strengthen its health to become resilient to climate change impacts. One of the key local stressors to the reef is overfishing especially of big fish and sharks, which reduces fish populations and disrupts food webs on the reef. The most valuable catch for the fishers is spiny lobster (*Panulirus argus*) which is also important for the health of corals because it preys on coral predators such as snails and fire-worms. Elevated summer temperatures have been shown to strengthen coral pathogens while weakening the coral host, with optimum water temperatures for infectious agents being higher than the optimal temperatures for corals. Recent increases in the frequency and virulence of disease outbreaks on coral reefs suggest that the trend of increasing disease will continue to strengthen as global temperatures increase. Coral disease is an important aspect of climate change for coral reefs, and disease resistance in corals is an important aspect of adaptation, allowing adapted coral genotypes to survive over time. Overfished reefs tend to have overabundant Stegastes populations, and associated high disease rates. No-take areas tend to have fewer of these disease-spreading fish, likely because of greater abundance of Stegastes predators (e.g., groupers). This is yet another example of how no-take zones help coral reefs survive warmer waters and adapt to climate change. Lowering coral predator (e.g., coral eating fire-worm and snails) abundance should be possible through the implementation of no-take zones on reefs, which would then have higher levels of snail and fire worm predators (lobsters and triggerfish). Hence, the enforcement of no-take marine protected areas, as it results in better ecological balance, is considered an important climate change adaptation measure for coral reefs. The target areas would cover identified fish spawning sites, resilient coral reef sites that have survived/recovered from the bleaching events, and climate refugia to ensure the reef's capacity to recover from extreme climate events by providing a sufficiently large and resilient seed stock of critical biodiversity and sustain productivity in the long-term.

[11] Saudamini Das (2007) Storm Protection by Mangroves in Orissa: An Analysis of the 1999 Super Cyclone. South Asian Network of Development and Environmental Economics Paper # 25-07.

The MCCAP would specifically mainstream climate change adaptation into the on-going activities. The adaptation measures to be implemented would complement on-going efforts by the Government of Belize and other funding sources aimed at marine protected areas (MPAs). While the on-going measures have been crucial in protecting this critical ecosystem, they have been lacking in programmatically mainstreaming specific climate adaptation into their activities. In line with the core principles of country-drivenness and country ownership, the proposed activities would specifically address the key adaptation measures identified in Belize's First and Second National Communications to the UNFCCC. In particular the First and Second National Communications identify enforcement of conservation and sustainable use of marine and terrestrial ecosystems, establishment and management of protected areas, inclusion of biodiversity conservation into sectoral adaptation strategies, and creation of alternative livelihoods away from coastal systems, as some of the climate adaptation measures that need to be urgently undertaken. The design and implementation of these activities is meant to enhance climate resilience and also address the anthropogenic stressors (specifically overfishing, uncontrolled coastal development and marine dredging, unsustainable tourism practices on the reef, etc.) impacting the reef ecosystem.

The activities are carefully selected based on the concept that the best chance of enhancing the resilience (resistance and recovery potential) of natural systems to climate change impacts is to reduce local stressors which undermine the innate resilience to external shocks that is characteristic of healthy, robust ecosystems and to strengthen the coral reefs health and thermal resilience.

2.3. PROJECT COMPONENTS

The MCCAP will have the following components:

- ***Component 1:*** Improvement of the reef's protection regime including an expansion and enforcement of the marine protected areas (MPAs) and replenishment zones in strategically selected locations to climate resilience, namely Corozal Bay Wildlife Sanctuary, Turneffe Atoll Marine Reserve, and South Water Caye Marine Reserve.

- ***Component 2:*** Support viable and sustainable alternative livelihoods for affected users of the reef in the areas impacted by project activities.

- ***Component 3:*** Raise awareness, build local capacity, and disseminate information regarding the overall health of the reef ecosystem and the climate resilience of coral reefs.

- ***Component 4****:* Project management by the Project Implementing Agency Group (PIAG), including implementation support on technical, administrative, fiduciary, and socio-environmental aspects, including safeguards compliance, and monitoring and evaluation, data collection, and coordination.

2.4. ENVIRONMENTAL CHARACTERISTICS OF PROJECT AREA

The MCCAP will place specific emphasis on the Turneffe Atoll Marine Reserve (TAMR), South Water Caye Marine Reserve (SWCMR), Corozal Bay Wildlife Sanctuary and Estuary Lagoon Systems (CBWS). The selection of the three MPAs to be targeted by the project is based on the

Government's on-going protected areas (PA) rationalization exercise, which aims to provide recommendations for "building on the current network of protected areas, improving functionality, connectivity and socio-economic benefit as Belize moves into a future with increasing anthropogenic pressures, overshadowed by the need to adapt to current and predicted climate change impacts"[12]. These three MPAs are critical in terms of the integrity and connectivity of marine ecosystem and climate impacts. Warmer waters and more frequent thermal anomalies have been observed especially in areas of slow flow, as in the South Water Caye area, and in shallow and sheltered regions on the internal side of Corozal Bay and Turneffe lagoons.

The amount of sea under full protection will be representative of each habitat or ecosystem type, including coral reefs, seagrass beds, mangroves, sand flats, etc., with areas prioritized based on the level of protection provided to fish aggregations, nursery areas, keystone species, unique endemic species, and critical functional groups. Spawning aggregation sites will be integrated into the protected areas as special management zones. The project will also focus efforts on strengthening the critical role played by mangroves as nursery areas for commercial fish species – particularly in South Water Caye Marine Reserve, reducing the potential for mangrove removal through caye development. Climate refugia-areas such as reef sites that exhibit strong currents, upwelling or other oceanographic features that makes them less prone to thermal fluxes will also be prioritized for protection[13]. This will also include reef sites which have been found through research and monitoring to exhibit coral genotypes with temperature resistant or resilient characteristics. Coral nursery initiatives will be used to further enhance resilience potential of replenishment zones[14] within the two MPAs.

Improving the protection regime of these three MPAs would thus ensure the reef's capacity to recover from extreme climate events by providing a sufficiently large and resilient seed stock of critical biodiversity (such as fish and coral) to restock the reef and sustain productivity in the long-term.

The refinement and demarcation of the boundary of the TAMR, expansion of the CBWS, the re-alignment of the replenishment (no-take) zones and the concomitant monitoring and enforcement in all three targeted MPAs are likely to result restrictions to resources and therefore will likely impact on the livelihoods and well-being of local communities even though the MPAs are already in place. A Culturally Appropriate Participation Plan and a Process Framework have been prepared alongside this EMF to guide adequate management of said social risks.

2.4.1. THE COROZAL BAY WILDLIFE SANCTUARY

The Corozal Bay Wildlife Sanctuary (CBWS) encompasses approximately 72,000 hectares of the Belize portion of the estuary system, and much of the northern shelf lagoon behind Ambergris Caye. The CBWS has vast seagrass beds which provide resilience to high temperatures and high turbidity. The coastal lagoons and saline mudflats are inhabited by dwarf mangrove, and are highly vulnerable ecosystems; frequently inundated and likely to become permanently so with

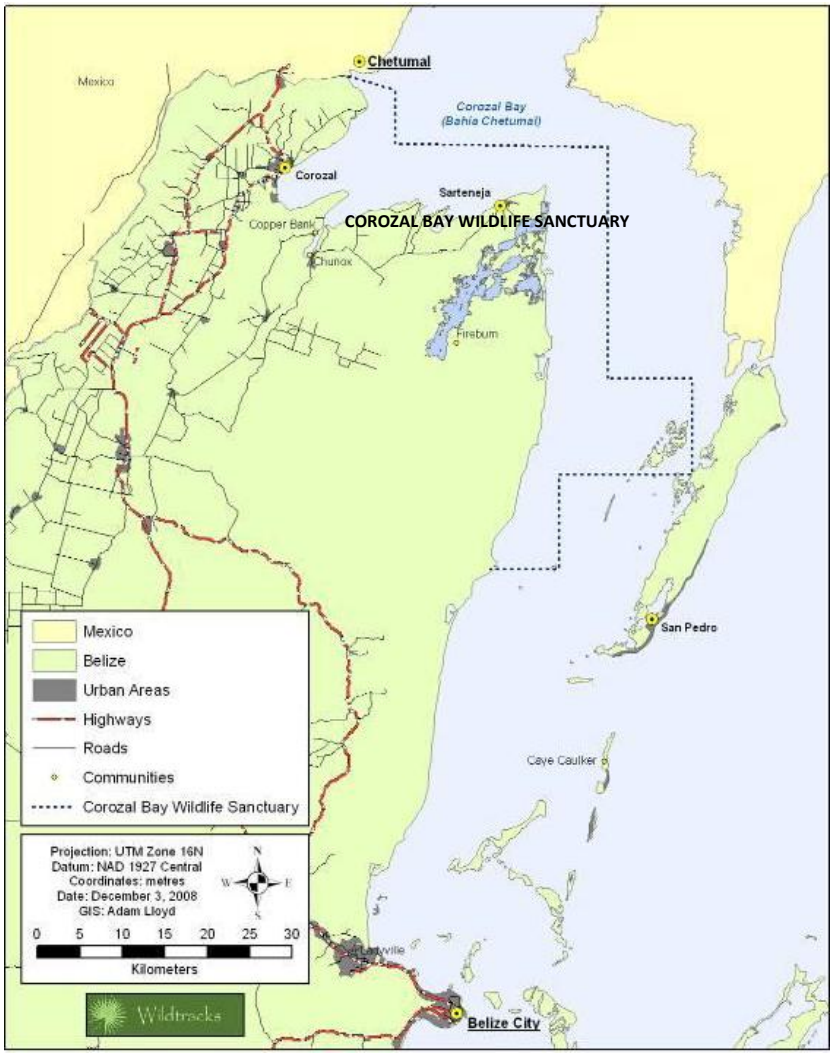
[12] Source: Rationalization Exercise of the Belize National Protected Areas System (Draft) (Wildtracks, August 2012)

[13] Hansen L.J., J.L. Biringer and J.R. Hoffman 2003. Buying Time: A user's manual for building resistance and resilience to climate change in natural systems. WWF.

[14] Bowden-Kerby A. and L. Carne 2011.Strengthening coral reef resilience to climate change impacts. Results and recommendations. Technical report to World Bank, Caribbean Community Climate Change Center and World Wildlife Fund.

climate change. They also have very low development potential. Including their representation within the CBWS would allow for an increased protection of Belize's marine salt marsh and critical fish nursery areas. The area supports a local traditional fishing industry, and contains important habitat for the Goliath Grouper (*Epinephelus itajara*).

Figure 1: Corozal Bay Wildlife Sanctuary



Fourteen ecosystems have been found existing along the coastline of the Corozal Bay Wildlife Sanctuary[15], with 90% of the coastline consisting of ecosystems containing a mangrove component. The Corozal Bay Wildlife Sanctuary (CBWS) is also well known for its large expanse of seagrass beds. The Sanctuary has potential ecological connectivity with two other protected areas - the Bacalar Chico Marine Reserve and coastal lagoons of Shipstern. It provides protected habitats for critically endangered West Indian manatee and is the only verified bull shark nursery area in country. It is also an important goliath grouper habitat and is home to potential remnant sawfish population in its coastal lagoons. The CBSW supports local traditional fishing industry. Seagrass in the Sanctuary are believed to be resilient to high temperatures and high turbidity.

[15] Adam and Adam 2011.

The CBWS is part of a largest estuarine system in that area and has a very shallow water depth of 1-7 m, averaging at a depth of 3 m (Kramer & Kramer, 2002). The bottom is predominantly covered with fine mud and algae and localized beds of seagrass - *Thalassia testudinum* and *Halodule wrightii*. Numerous coastal lagoons with inlets, inundated mangrove and saline salt marshes are connected to the bay, and a number of fresh water rivers, including Río Hondo and New River, discharge into it. A good number of mangrove cayes lie within the Bay, supporting nationally important nesting colonies of waterbirds[16].

Table 1: Ecosystems in CBWS[17]

Ecosystem	Length (km)	%
Brackish/Saline lake	0.21	0.14
Caribbean mangrove forest; coastal fringe mangrove	27.42	18.78
Caribbean mangrove forest; dwarf mangrove scrub	12.62	8.65
Caribbean mangrove forest; mixed mangrove scrub	26.55	18.19
Caribbean mangrove forest; tall mixed mangrove (basin mangrove)	2.14	1.46
Coastal fringe mangrove with casuarina-dominated beach ridge	0.52	0.36
Mangrove dominated beach ridge vegetation, backed by marine salt marsh with mangroves	2.65	1.81
Marine salt marsh rich in succulents	1.49	1.02
Prominent beach ridge vegetation (not mangrove dominated), backed by dwarf mangrove scrub flats	13.36	9.15
Prominent beach ridge vegetation (not mangrove dominated), backed by marine salt marsh with mangroves	7.14	4.89
Red and black fringing mangroves (with occ. coconuts) backed by tropical evergreen seasonal broad-leaved lowland forest on calcareous soils	39.68	27.18
River	0.22	0.15
Tropical evergreen seasonal broad-leaved lowland forest on calcareous soils	1.06	0.72
Urban	10.93	7.49

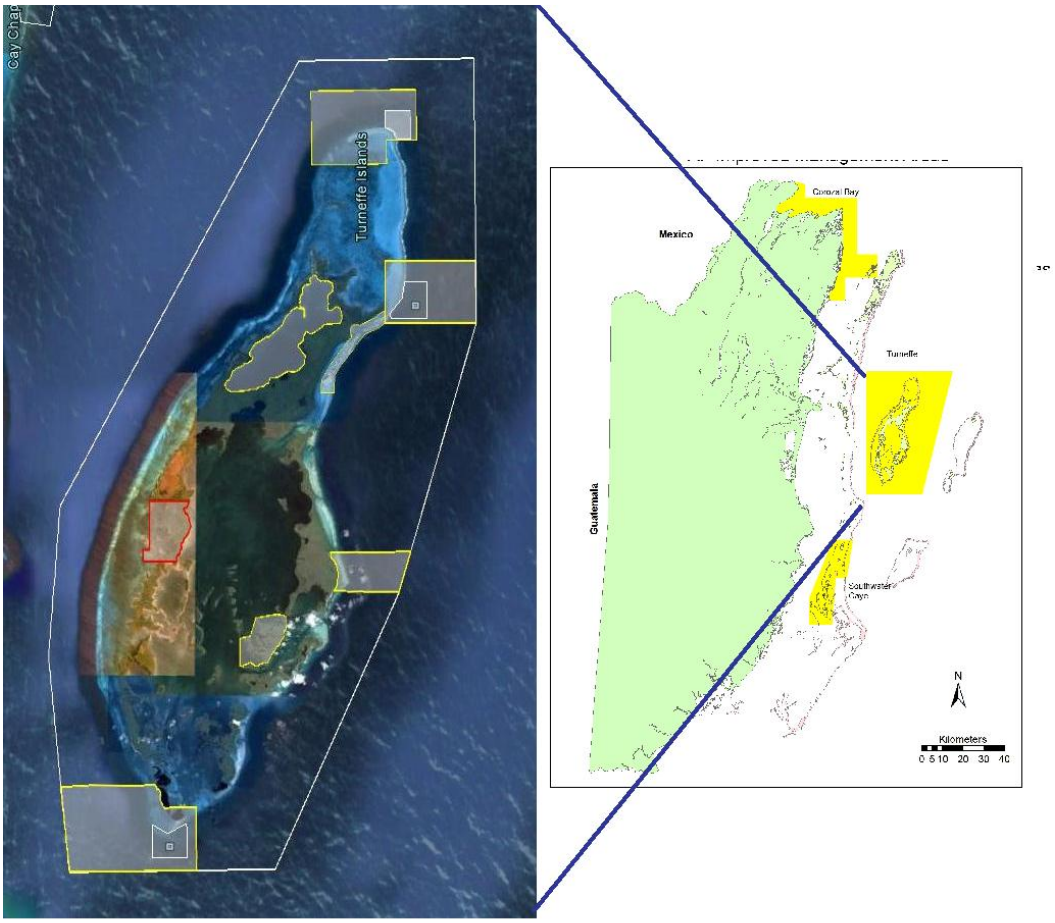
Existing human impacts on the CBWS include sea walls that account for 7.89 % of the coastline of the Wildlife Sanctuary, and jetties for which a total of 78 have been recorded. In terms of human disturbance, 19.35 % (28 km) of the coastline of the Wildlife Sanctuary has been disturbed by anthropogenic impacts. Additional threats to the CBWS include run-offs from agriculture activities and municipal waste from Northern Belize and the southern Mexican town, Chetumal, as well as high fishing pressures.

[16] Adam and Adam 2011.
[17] Ibid.

2.4.2. TURNEFFE ATOLL MARINE RESERVE

Turneffe Atoll, the largest of three offshore Atolls lying to the east of the coastal shelf of Belize, is considered to be an integral part of Belize's reef system, and one of the best developed Atolls of the Mesoamerican Reef (MAR) region, as well as a global ecological hotspot for marine biodiversity. Turneffe is also well known for its three fish spawning aggregation sites that received marine protected areas designation in 2002. The entire Atoll was designated as a Marine Reserve in November 2012. A management structure or presence is in the process of being instituted. The marine protected area includes the entire Atoll (~131,690 hectares) as well as an area of the surrounding open sea, making it the largest marine protected area in Belize. The Turneffe Atoll area serves as a major source of coral larvae. Transport of coral larvae is driven by the general pattern of currents in the area, with most of the connections between pairs of reefs running parallel to the coastline. The Turneffe area includes at least three identified spawning aggregations which would be buffered by the marine reserve and significant reef flats which are key habitats for the valued catch and release species – bone fish, tarpon and permit.

Figure 2: Turneffe Atoll Marine Reserve[18]



Note: The outer white line represents the approximate boundary of Turneffe Atoll Marine Reserve. The yellow line represents the no-take areas.

The west to southwest area of Turneffe towards South Water Caye represents the highest number of connections (P. Mumby *et al*, 2009). In addition, the benefits of storm protection and damages avoided by safeguarding these areas are substantial. The target areas, especially Turneffe, harbor significant mangroves, littoral forests, and lagoon systems which are underrepresented in the current system. Based on a 25 year major storm event, the annualized value of storm protection and damages avoided by Turneffe Atoll is US$38 million (A. Fedler, 2011). Furthermore, by including the identified fish spawning sites, resilient coral reef sites and climate refugia, climate-resilient stocks are secured within the three MPAs.

Turneffe Atoll hosts some assemblages of regionally important ecosystems that are of remarkable biodiversity and beauty, as well as of great scientific value and global conservation importance. These include the critically endangered hawksbill turtle (*Eretmochelys imbricata*) and goliath grouper (*Epinephelus itajara*), and the endangered green and loggerhead turtles (*Chelonia mydas* and *Caretta caretta*) (IUCN, 2011). The white spotted toadfish (*Sanopus*

[18] This is a preliminary map outlining the boundaries of the MPA and no-take zones in Turneffe Atoll. The Project would support the demarcation process to define the official boundary of the Marine Reserve (multiple use). The outer white line (polygon) represents the outer limits of the Marine Reserve, estimated at 131,690 hectares. The yellow polygons represent what could become the no-take areas estimated at 19,218 hectares.

astrifer), endemic to Belize, has a limited range that includes the Atoll, and the areas also provide important habitat for pelagic and migratory species like marlin, sailfish, wahoo (*Acanthocybium solandri*), kingfish, tuna (bonito, yellowfin), mackerel, jack (amber, horse-eye, crevalle), and shark. Some of the highest quality remaining American Crocodile habitat in the region is thought to exist at Turneffe (Kramer and Kramer, 2002).

The TAMR encompasses the entire Atoll and has some of the most extensive stands of mangroves, with high connectivity to reef and seagrass, providing ideal nursery habitat for juvenile commercial species. The central and southern lagoons harbour extensive seagrass beds, with also high connectivity to reef and mangrove, providing ideal nursery habitat for juvenile commercial species as well as threatened species such as marine turtles and manatees. The TAMR also has diverse reef types, ranging from reef wall to reef crest, back reef and patch reefs, with a high diversity of reef species. The cayes of Turneffe Atoll support some of the last, and most important, remnants of extensive littoral forest, considered one of the most threatened ecosystems in Belize.

The spawning aggregation sites of Turneffe Atoll are important for the maintenance of snapper and grouper populations, maintaining populations of important commercial species, including the Nassau Grouper.

The east facing cayes of Turneffe Atoll are known for their sandy beaches, leading to the focused development of tourism in this area, as well as providing nesting sites for marine turtle species and the American Crocodile.

Turneffe Atoll is particularly important in protecting Belize City from on-coming tropical storms. The Atoll is a significant lobster extraction area on the national level, and contributes to conch production, providing an important income for traditional fishermen. Turneffe Atoll is also considered one of the foremost fly-fishing destinations in the world, contributing significantly to tourism income, with fly-fishing resorts providing employment and training for local staff. A large number of popular dive sites are also found along the Atoll's walls. There are reef sites at Turneffe rated as being in FAIR and GOOD conditions.

2.4.3. SOUTH WATER CAYE MARINE RESERVE

The South Water Caye Marine Reserve (SWCMR), which is designated as a part of Belize's World Heritage Site, is considered one of the most highly developed examples of barrier reef structure in the region, with extensive spur and groove formation. The channels through the reef barrier with strong flow and water exchange are key resilience features of the SWCMR. Other resilience features include deep water channels within reef lagoon that bring cooler water, and the reef relief and environmental gradient – fore reef, reef crest, back reef and lagoon with reef patches – which increase coral tolerance to different temperature regimes[19].The marine reserve (47,700 hectares) encompasses 32 named cayes and supports an important oceanic mangrove system and extensive seagrass meadows, which provide valuable habitats for commercial and non-commercial species – including queen conch (*Strombusgigas*) and lobster (*Panulirusargus*), the foundations of the traditional fishing industry on which a number of coastal communities in Belize are dependent. The sheltered waters and mangrove systems of the Pelican cayes in the southern area of the Marine Reserve have been identified as one of the most biologically diverse marine systems within the western hemisphere, supporting a number of endemic species, and

[19] Source: South Water Caye Management Plan 2010-2015 (Wildtracks, 2009)

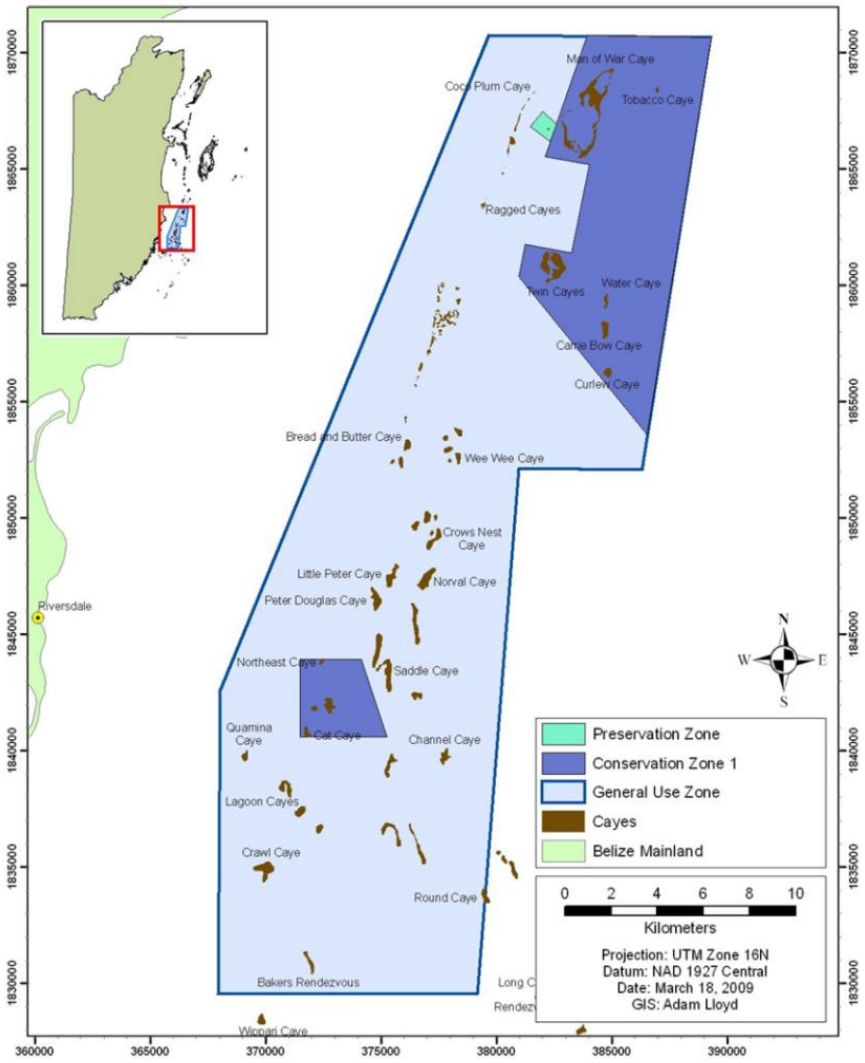
species new to science. The mangrove areas of the marine reserve are considered particularly important for the sustainability of commercially important species for the entire Belize Barrier Reef system.

The SWCMR includes 9 km of unbroken stretch of the barrier reef, running from Tobacco Caye to South Water Caye, and is considered to be one of the most highly developed examples of barrier reef structure, with extensive spur and groove formation. The underlying reef structure consists of at least 16 m of unlithified late Holocene sediments in the back reef and more than 18 m of a mixed coral and deeper water coral-head facies in the shallow and deep fore reef, with a maximum age of 7,175 ± 100 years BP (Koltes et. al. 1998). Cayes dot the platform, some formed on mangrove peat, others from coral outcrops and sand deposition[20].

Reef and fore reef sediments comprise of fragments of coral, red algae and Halimeda. On the contrary, sediments of back reef contain more mollusk fragments and have lower percentages of Halimeda (Gischler 1994). Patch reefs sediments are poorly sorted coarse-grained carbonates, composed primarily of Halimeda, coral, coralline algae, mollusc and other skeletal particles. Lagoon floor is muddy, composed of fine-grained carbonate sand, with sand fraction rich in Halimeda, mollusc and foraminifer grains (James and Ginsburg 1979). Mud dominates sediments of the channel flooring – accounting for 80-90%. Sand forms less than 10% of seabed sediment in deep areas. Gravel is a very minor component (Nunny et al. 2002).

[20] South Water Caye Marine Reserve Management Plan.

Figure 3: South Water Caye Marine Reserve



Sheltered waters and oceanic mangrove systems of the Pelican Cayes in the southern area of the SWCMR have been identified as one of the most biodiverse marine systems within the western hemisphere, supporting a number of endemic species, and species new to science. Shallow northern back-reef lagoon between the reef crest and Tobacco Range supports nationally important nursery areas for the queen conch. Mangroves of the reserve are considered particularly important for the sustainability of commercially important species for the entire Belize reef system. There exist steep-sided faros in the Pelican Cayes area, deep water channels, and high connectivity between littoral forest, mangrove, seagrass, and reef. The reserve also harbours nesting beaches for hawksbill and green turtles, and exposed reef and sand cayes provide nesting sites for several tern species[21]. The SWMR is also one of Belize's designated World Heritage Sites.

[21] South Water Caye Marine Reserve Management Plan

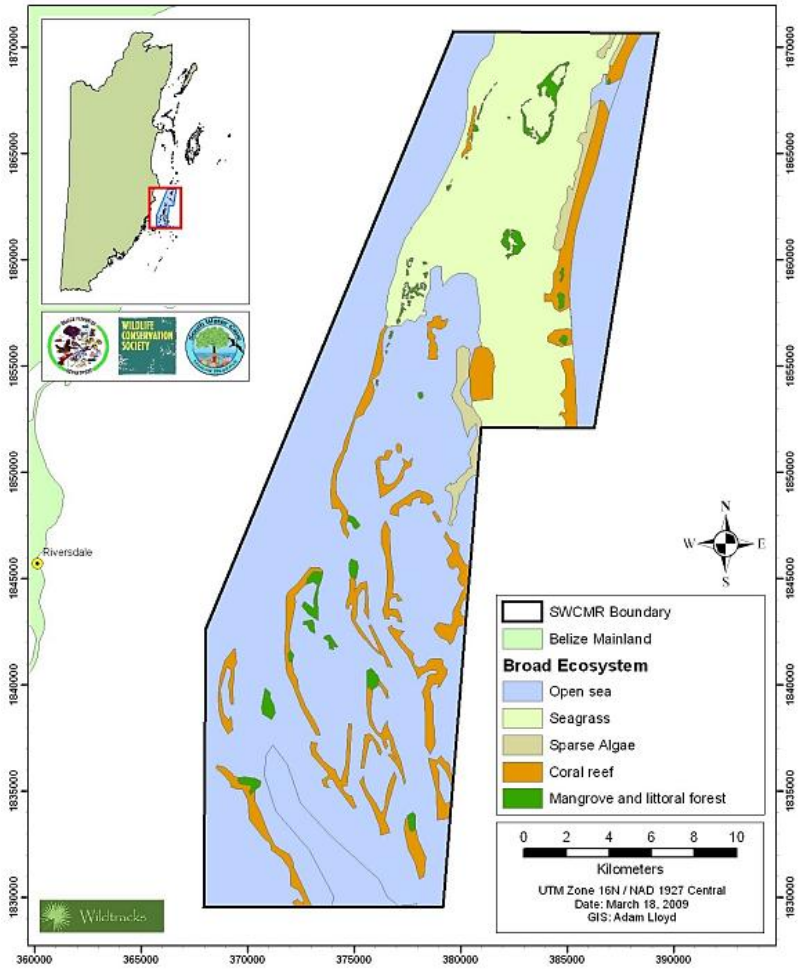


Figure 4: Broad Ecosystems of SWCMR

The SWMR also exhibits climate change resilience features such as: channels through reef barrier with strong flow and water exchange; deep water channels within reef lagoon that bring cooler water; and reef relief and environmental gradient – fore reef, reef crest, back reef and lagoon with reef patches – increasing potential for coral tolerance to different temperature regimes.

Potential threats to this project site include impacts from pesticide and herbicide use, impacts from dredging activities, mangrove clearance and associated impacts on fish populations, impacts from inadequate sewage disposal, grey water and detergents, and impacts from run-off following land clearance, and associated sedimentation.

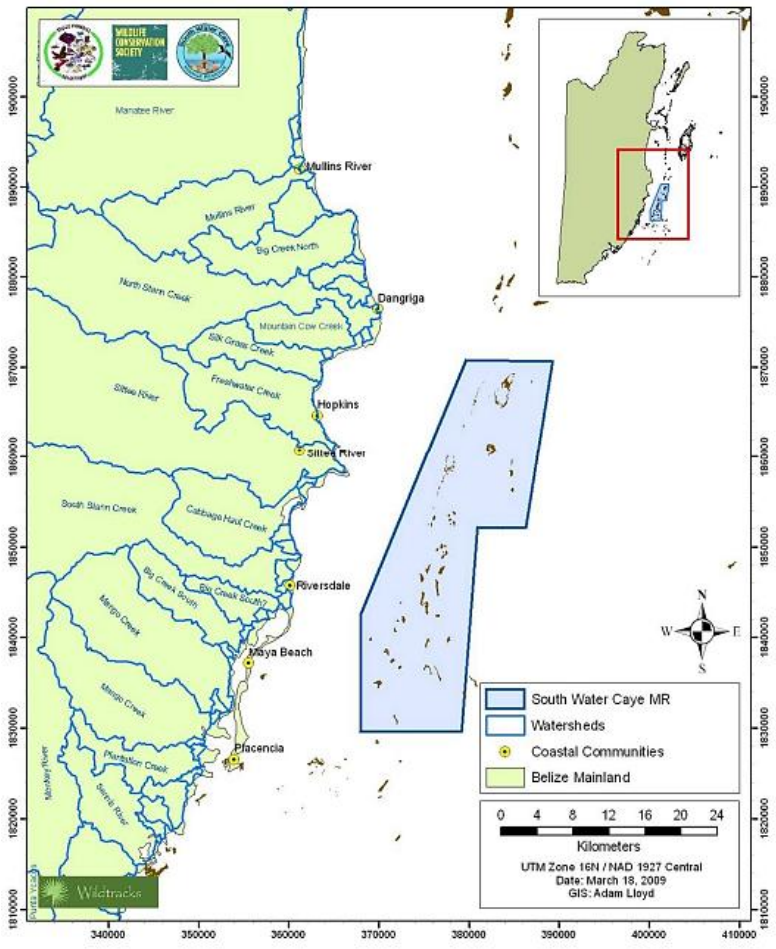


Figure 5: Watersheds Flowing into the Barrier Reef Lagoon in the SWCMR Vicinity

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

The Government of Belize, through the Ministry of Forest, Fisheries and Sustainable Development (MFFSD) and the Ministry of Natural Resources and Agriculture (MNRA), employs a number of guidelines (standards) and tools to safeguard Belize's environment from impacts associated with the varied socioeconomic development practices/projects in country. The aim is to foster prudent use and proper management of the country's natural resources through preservation, protection and improvement of the environment and pollution control. Some of the guidelines/tools that relate to the MCCAP include: applicable DOE environmental checklists and environmental impact assessment (EIA) in which project developers are asked to map out all environmental impacts of a potential project prior to project implementation phase so as to ensure that practical measures to mitigate adverse environmental effects are adequately addressed beforehand. Another key tool used by the GOB is an environmental compliance plan (ECP), which helps to ensure compliance during project implementation and throughout the project timeframe.

PACT and MFFSD (via the Fisheries Department) will work closely with the varied GOB permitting entities mentioned herein to ensure that MCCAP sub-projects comply with national and WB environmental standards and guidelines in order to assure the social and environmental sustainability of MCCAP sub-projects and assume the related compliance and monitoring responsibility.

3.1. THE WORLD BANK SAFEGUARD POLICIES

In order to ensure the sustainability of projects, the WB has instituted safeguard policies in social and environmental aspects as applicable to each project financed by the WB. The safeguard policies pursue three objectives: 1) to assure that social and environmental aspects are evaluated in the decision-making process; 2) to reduce and to handle the risks of each programme/project; and 3) to provide mechanisms for consultation and information disclosure regarding project activities to interested and affected parties. The safeguard measures serve to ensure that there is sustainable use of the natural resources, transparency in information provided to the public, and the impacts of a project are properly assessed so that mitigation measures or alternatives can be adequately formulated. The application of the safeguards does not stop at the end of project implementation but continues into its operation phase. Once a project is in its operational phase, the applicable safeguards are expected to be continuously applied and informed by a comprehensive monitoring and evaluation plan so that corrective measures can occur at the earliest.

WB environmental, social, and legal safeguards that are triggered by the MCCAP are: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP/BP 4.09), Indigenous Peoples (OP/BP 4.10), Physical Cultural Resources (OP/BP 4.11), Involuntary Resettlement OP/BP 4.12, Forests (OP/BP 4.36), and Projects in Disputed Areas (OP/BP 7.60). Regarding the two social safeguards (Indigenous Peoples and Involuntary Resettlement), the project counts with respective management instruments that, as well as the present EMF, form a part of the project's Operational Manual. Implementation of the legal safeguard on Projects in Disputed Areas is instructed through the Operational Manual.

The following table presents the reasons to trigger the above-referred safeguards, including the rationale and objectives of the same (Table 2). More information on the World Bank safeguard policies can be accessed at http://go.worldbank.org/Z3I5EG3E30.

Table 2: World Bank Safeguard Policies Triggered by the MCCAP

Safeguards	Operational Policy/Bank Procedure No.	Rationale and Objectives
Environmental Assessment	4.01	EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of each proposed project. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favors preventive measures over mitigatory or compensatory measures, whenever feasible. Regarding the EA categorization by the World Bank and due to potential small-scale adverse environmental impacts of component 2, the MCCAP is categorized as B and requires a partial EA.
Natural Habitats	4.04	Ensures that infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present). The policy is triggered by the MCCAP mainly as it strives to positive impacts on critical MPAs, yet also to conserve the same.
Pest Management	4.09	To promote the use of biological or environmental control methods and reduce reliance on synthetic chemical pesticides. The MCCAP will not finance chemical pesticides or lead to increased use of other agricultural chemicals. However, pest management could be necessary for eligible subprojects related to sustainable livelihood activities. In those cases, the project will promote use of Integrated Pest Management (IPM) as defined and instructed in the OP/BP 4.09.

Indigenous Peoples	4.10	Ensures that indigenous peoples are consulted with, participate in, and benefit from Bank-funded operations in a culturally appropriate way - and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated.
Physical Cultural Resources	4.11	Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The loss of such resources is irreversible, but it is often avoidable. The objective is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. The MCCAP could involve small structural works and since Belize has thousands of Mayan Antiquities buried under the forests, chance finds might occur within the project's intervention areas. Further, potential tourism-related livelihood activities could involve a known cultural site.
Involuntary Resettlement	4.12	Situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas trigger this policy. It aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. It promotes participation of displaced people in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement. The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects. Some MCCAP activities could potentially restrict access to targeted MPAs. These restrictions will affect persons who currently use said MPA resources on which the project will work, and who, as a result, may have reduced access to continue their livelihood activities. Therefore, the MCCAP has a Process Framework to establish guidelines for the project's livelihood restoration strategy to mitigate the impacts of restrictions on livelihood activities in target sites where existing economic activities do not comply with the MPAs legislation.

Forests	4.36	Aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. The MCCAP will not lead to the destruction of forests and forest ecosystems, but will in fact support rehabilitation/restoration of critical marine forest areas such as mangrove and littoral forests through community-based activities. The policy is triggered as a precaution due to the presence of forest ecosystems at project potential sites.
Public Disclosure		Public and timely disclosure of the environmental and social instruments developed for a project is required in applicable language(s).

3.1.1. OP/BP 4.01 – ENVIRONMENTAL ASSESSMENT (EA)

Under the MCCAP, component 2 supports economically viable and sustainable alternative livelihoods for local populations whose economic activities are directly impacted by the adverse effects of climate change as well as by the expansion of the replenishment (no-take) zones and MPA network. Potential alternative livelihoods activities include poly-culture of marine products such as seaweed farming combined with cultivation of other marine products (e.g., sea cucumber and crab) in an integrated cultivation system. Training for other marine tourism-based activities such as tour-guiding, whale shark tourism, diving, and sailing, will also be selectively supported by the MCCAP based on their economic viability and sustainability.

The project is classified as Category B, as the potential adverse environmental impacts from these supported livelihood activities on human populations or environmentally important areas are small-scale, site-specific, reversible and can be readily mitigated. Since the exact location and/or nature of potential small investments to be financed under this project have not yet been fully determined, this EMF was prepared to conform to the applicable WB environmental safeguard policies and national regulation. Regarding national legislation, it will be necessary to comply with all the environmental legal requirements of Belize in developing applicable assessments and plans to ensure social and environmental sustainability of the subprojects and to obtain the respective environmental permissions and clearances. Annex 3 presents the "General Principles of Environmental Impact Assessment in Belize".

3.1.2. OP/BP 4.04 – NATURAL HABITATS

The MCCAP triggers this policy as it directly targets positive impacts in critical marine habitats helping to rehabilitate, restore, and protect degraded critical marine ecosystems (such as coral reefs) that are important to preserve marine and coastal biodiversity and the quality of water resources. This EMF explicitly forbids any support for livelihoods activities in areas supporting critical natural habitats or inducing conversion or degradation of critical natural habitats; this policy has been triggered as a precaution. In the event critical or sensitive zones are identified where some species could be affected negatively due to project execution, it would be necessary to develop the required studies to ensure such areas/species are not negatively affected. It is important to site projects on previously converted lands/areas in order to minimize potential negative impacts on natural habitats.

3.1.3. OP/BP 4.36 – FORESTS

The MCCAP will not lead to the destruction of forests and forest ecosystems, and will in fact support rehabilitation/restoration of critical marine forest areas such as mangrove and littoral forests through community-based activities. Similar to the natural habitats, the EMF explicitly forbids any project activities possibly supporting destruction or conversion of forests and forest ecosystems. However, due to the presence of forest ecosystems at potential subproject sites, this safeguard policy is triggered as a precaution.

Alternative livelihoods initiatives are important in reducing dependency on marine products. Agro/eco-forestry can provide viable alternatives, depending on people's access to arable land. However, agriculture can also have negative consequences and sustainable use of non-timber forest products (NTFP) can be viable approaches to improved income with potentially less environmental risks than agriculture. Regarding forestry, the WB does not finance projects/plantations that (i) would involve significant conversion or degradation of critical forest areas or other natural habitats; (ii) contravene applicable international environmental laws; and (iii) involve any conversion or degradation of critical natural habitats, including adjacent or downstream critical natural habitats. The WB only finances (i) commercial harvesting operations or the purchase of logging equipment in areas that it has determined are not critical forests or related critical natural habitats; and (ii) industrial-scale commercial harvesting operations in areas outside critical forest areas, where such operations are either certified as meeting standards of responsible forest management under an independent forest certification system acceptable to the WB, or adhere to a time-bound, phased action plan acceptable to the WB for achieving certification to such standards.

In areas outside of critical forest areas, the WB may finance harvesting operations by small-scale landholders, local communities under community forest management, or entities under joint forest management. Such financing can be provided where these operations have either achieved a standard of forest management developed with the meaningful participation of affected local communities, consistent with the principles and criteria of responsible forest management outlined in paragraph 10 of OP 4.36, or adhere to a time-bound action plan to achieve such a standard that has been developed with the meaningful participation of affected local communities and acceptable to the WB. All such operations must be monitored by the client, with the meaningful participation of local people who are affected.

The WB uses environmental assessment to address the impact of all WB financed investment projects on forests and the rights and welfare of local communities. The WB ensures that WB financed investment projects involving forest management (i) incorporate measures to strengthen the national fiscal, legal, and institutional framework to meet defined economic, environmental, and social objectives that address, among other issues, the respective roles and legal rights of the government, the private sector, and local people; and (ii) give preference to small-scale, community-level management approaches where they best harness the potential to reduce poverty in a sustainable manner.

The WB ensures that the design of WB financed investment projects that use forest resources evaluate the prospects for the development of new markets and marketing arrangements for NTFPs and related goods and services, taking into account the full range of goods and environmental services derived from well-managed forests.

3.1.4. OP/BP 4.09 – PEST MANAGEMENT

Pest control requires either chemical or biological intervention. Pesticides are substances that can be hazardous and harmful to the environment and/or human or animal health if a proper pest management plan is not in place to appropriately reduce impacts. Pesticides have a high potential for harm to the environment, and the WB requires that the respective capacities to manage and safely use them be assessed both at the beneficiary country and sub-project level. Regarding sub-projects that require or can imply application of pesticides, the Pest Management safeguard ensures that their use is properly assessed and managed from the conception to operation. The MCCAP will not finance chemical pesticides or lead to increased use of other agricultural chemicals without application of an Integrated Pest Management Plan (IPMP). In cases where pest management may be necessary for eligible sub-projects related to sustainable livelihood activities, including aquaculture/mariculture sub-projects that could face occurrence of disease pathogens during operation, the MCCAP will promote use of Integrated Pest Management (IPM) as defined and instructed in the OP/BP 4.09. Screening of sub-projects takes place before approval and implementation of sub-project activities. The purpose is to determine, at the site level, the extent of pesticides used and to establish a baseline of existing practices so that an adequate and effective IPMP can be developed as needed. Annex 4 provides a guide for rational and efficient pesticides management at the site level.

3.1.5. OP/BP 4.11 – PHYSICAL CULTURAL RESOURCES

The MCCAP could involve small structural works and since Belize has thousands of Mayan antiquities buried under the forests, chance finds might occur within the project's intervention areas. Furthermore, potential tourism-related livelihood activities could involve a known cultural site. Belize has a well-developed program for management of Mayan antiquities *in situ* and *ex situ*. If antiquities are encountered during project implementation, the Institute of Archaeology will be notified immediately, and as the competent authority, it will make the decisions on how any chance find would be managed. Additionally, the EMF explicitly forbids activities that would negatively impact any known cultural site.

If an alternative livelihood sub-project relates with a known cultural site, said sub-project preparation needs to follow the World Bank Physical Cultural Resources[22] Safeguard Policy Guidebook[23] that has been prepared as guidance for implementing OP/BP 4.11. In case needed, the Guidebook provides instruction on preparing a separate impact assessment for physical cultural resources. Sub-projects related with cultural sites can only be eligible for project funding in case they present a solid Physical Cultural Resources Management Plan either as an integral part of the sub-project's EA process or separately. Typically, said plan includes measures for avoiding or mitigating any adverse impacts on physical cultural resources, provisions for the management of chance finds, any necessary measures for strengthening institutional capacity, a monitoring system to track progress of these activities, and takes into account the Belizean overall policy framework, national legislation and institutional capabilities in regard to physical cultural resources. The proposed monitoring system should cover the expected impacts, and the

[22] As per the OP, defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

[23] The Guidebook is available in different languages at http://go.worldbank.org/JA5D4AZ5B0.

implementation of the recommended mitigating measures, as well as impacts which were not included in the impact assessment, possibly because it was thought that such PCR would not be affected.

Whenever it is considered possible for project related activities to encounter archaeological or paleontological sites, or artifacts, the contractors should be required to follow procedures regarding chance finds, as per national legislation and instructed in Annex 5, which includes proposed chance find procedures wording. This will require inclusion of such provisions in the contract documents. In case of any difference/gap between the national legislation and the OP/BP 4.11, the stricter approach will prevail.

3.1.6. OP 7.60 – PROJECTS IN DISPUTED AREAS

The territory of Belize has been claimed in whole or in part by Guatemala since 1940. In May 2008, Belize and Guatemala signaled their acceptance of the OAS Secretary General's recommendation to refer the territorial dispute to the International Court of Justice subject to the will of the people of Belize and Guatemala. On the 8 December 2008, the Ministers of Foreign Affairs of Belize and of the Republic of Guatemala signed the "Special Agreement to Submit Guatemala's Territorial, Insular and Maritime Claim to the International Court of Justice" subject to the conduct of national referenda in both countries. Up to now, the referenda have not been conducted.

As a result of the existence of Guatemala's claim to Belizean territory, this policy is triggered as a precautionary measure.

By supporting the MCCAP, the Bank does not intend to make any judgment on the legal or other status of the territories concerned or to prejudice the final determination of the competing parties' claims.

3.1.7. OP/BP 4.10 – INDIGENOUS PEOPLES

The MCCAP will engage with different ethnic groups at the site level for the site-specific activities and nationwide for activities that will have system-wide impacts. The indigenous peoples of Belize who could be impacted by the project are select Garinagu communities in the Stann Creek District. Other ethnicities that could be impacted are the Creole, Mestizo, and East Indians. An Indigenous People's Planning Framework (IPPF; aka a Culturally Appropriate Consultation and Participation Protocol[24]) has been prepared in full compliance with OP 4.10 and is available at the project websites[25] and the World Bank InfoShop.

3.1.8. OP/BP 4.12 – INVOLUNTARY RESETTLEMENT

Some MCCAP activities could potentially restrict access to targeted MPAs. These restrictions will affect persons who currently use the resources of the MPAs within which the project will work and who, as a result, may have reduced access to the MPAs for their livelihood activities. Therefore, a Process Framework (PF)[26] has been prepared and is available at the websites

[24] Culturally Appropriate Consultation and Participation Protocol (Shal, November 2014)
[25] www.pactbelize.org and http://www.belize.gov.bz/index.php/ministry-of-forestry-fisheries-and-sustainable-development
[26] MCCAP Process Framework (Shal, October 2014)

indicated in footnote 24. The PF's purpose is to establish guidelines for the project's livelihood restoration strategy to mitigate the impacts of restrictions on livelihood activities in target sites where existing economic activities do not comply with the MPAs legislation. In other words, the framework (protocol) will support the restoration of livelihoods through supporting community-based alternative sustainable livelihood subprojects to buffer socio-economic impacts that may result from the MPA enforcement, monitoring, and compliance activities. In order to mitigate a range of social risks and to prevent, manage and resolve potential disputes, a project-wide grievance redress mechanism has been established and is described in the PF.

3.1.9. REQUIREMENTS FOR PUBLIC DISCLOSURE

Now that consultations on the document have been held, and concerns have been incorporated into the EMF, the final version of the EMF will be publicly disclosed in Belize and published on the WB's external website.

3.2. WORLD BANK PROJECT CATEGORIZATION

In order to apportion an appropriate response, the Bank, like Belize's EIA regulations, developed a project classification system to ensure that they are correctly assessed based on the potential significant impacts occurring as a result of the implementation and operation of a programme or project (Table 3). In the World Bank's system there are four categories ranging from A with the highest impact to C that would cause little or no impact and therefore do not require any environmental assessment. A fourth category is not based on potential impacts but to ensure that projects financed by the Bank through an intermediary are also subject to the same evaluation procedures. In the Work Bank's system projects are generally classified based on the likely outcome of the impact and the potential effects (e.g., physical, social, and economical). World Bank project categorization for environmental assessment is shown in Table 3 below.

Table 3: World Bank Categorization for EA (WB 2012)

Category	Potential Impact	Description/Response
A	Likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. A potential impact is considered "sensitive" if it may be irreversible (e.g. lead to loss of a major natural habitat) or raise issues covered by OP 4.04, *Natural Habitats*; OP/BP 4.10, *Indigenous Peoples*; OP/BP 4.11, *Physical Cultural Resources* or OP 4.12, *Involuntary Resettlement)*	EA for a Category "A" project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. The borrower is responsible for preparing a report, such as normally an EIA (or a suitably comprehensive regional or sectoral EA) that includes, as necessary, elements of the other instruments such as Strategic Environmental and Social Assessment (SESA), environmental audit, hazard or risk assessment, environmental management plan (EMP) and environmental and social management framework (ESMF).
B	Potential adverse environmental	These impacts are site-specific; few if any of

Category	Potential Impact	Description/Response
	impacts on human populations or environmentally important areas--including wetlands, forests, grasslands, and other natural habitats--are less adverse than those of Category "A" projects. (When the screening process determines, or national legislation requires, that any of the environmental issues identified warrant special attention, the findings and results of Category "B" EA may be set out in a separate report. Depending on the type of project and the nature and magnitude of the impacts, this report may include, for example, a limited environmental impact assessment, an environmental mitigation or management plan, an environmental audit, or a hazard assessment. For Category "B" projects that are not in environmentally sensitive areas and that present well-defined and well-understood issues of narrow scope, the Bank may accept alternative approaches for meeting EA requirements: for example, environmentally sound design criteria, siting criteria, or pollution standards for small-scale industrial plants or rural works; environmentally sound siting criteria, construction standards, or inspection procedures for housing projects; or environmentally sound operating procedures for road rehabilitation projects).	them are irreversible; and in most cases mitigation measures can be designed more readily than for Category "A" projects. The scope of EA for a Category "B" project may vary from project to project, but it is narrower than that of Category "A" EA. Like Category "A" EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. Findings and results of Category "B" EA are described in the project documentation (Project Appraisal Document and Project Information Document).
C	Likely to have minimal or no adverse environmental impacts.	Beyond screening, no further EA action is required.
FI	Can have any of the above described levels of impact.	A proposed project is classified as Category "FI" if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

3.3. BELIZE NATIONAL LAWS AND REGULATIONS

The MCCAP implementation will need to comply with the national legal framework of Belize. In Belize, protection of the environment from degradation is primarily the responsibility of the Department of the Environment (DOE) under the portfolio of the Ministry of Forests, Fisheries and Sustainable Development (MFFSD). Notwithstanding this, environmental protection also lies within the purview of other agencies. The Fisheries Department has responsibility for protection of marine ecosystems generally and provides management oversight through the issuance of licensing, monitoring and enforcement of the pertinent local laws.

The MCCAP sub-projects will abide by the relevant laws, guidelines and licensing processes of each of these Government of Belize agencies and those of others that are required. Table 4 shows the main national legal instruments that are applicable to this project, and relates them to the relevant World Bank Environmental Safeguard Policies.

Table 4: Main National Legal Instruments

Name of Act	Date	Relevance	Relevant World Bank OP
Environmental Protection Act and EIA Regulations	Rev 2000	Control and prevention of pollution on land, water and air, prohibitions on dumping of waste, environmental impact assessment and the control of nutrients deposited into the environment.	OP 4.01
Fisheries Act (Living Aquatic Resources Bill)	Rev 2000	Allows for the designation of marine protected areas and the regulation of the use of marine resources.	OP 4.04
National Integrated Water Resources Act	2011	Management, controlled allocation and the sustainable use and protection of the water resources of Belize.	OP 4.01
National Institute for Culture & History Act	Rev 2000	Protection and conservation of ancient monuments and related matters.	OP 4.11
National Parks System Act	1982 (Rev 2000)	Allows for the designation of national parks, wildlife sanctuaries, natural monument, and nature reserves.	OP 4.04
Wildlife Protection Act	1982 (Rev 2000)	Protection for species of conservation concern.	OP 4.04
Mines & Minerals Act	1989 (Rev 2000)	Controls activities such as dredging, prospecting and drilling.	OP 4.01
Belize Agricultural Health Authority Act	Rev 2000	Provides for the establishment and maintenance of animal and plant health services, prevention and control of the introduction of plant and	OP 4.09

		animal diseases and pests into Belize, among other functions.	
Pesticides Control Act	Rev 2003	Deals with all aspects of the importation, manufacture, packaging, preparation for sale, sale, disposal, and use of pesticides.	OP 4.09

3.3.1. ENVIRONMENTAL LAW

The **Environmental Protection Act**[27] (EPA) is the most comprehensive piece of environmental legislation in Belize. The law demonstrates, as stated in the preamble, the commitment of the Government of Belize (GOB) to the protection and preservation of Belize's natural heritage to ensure that exploitation of the resources is consistent with maintaining ecological balance. The Act gives broad sweeping powers to the Department of the Environment (DOE) for the control and prevention of pollution on land, water and air, prohibitions on dumping of waste, environmental impact assessment and the control of nutrients deposited into the environment.

Environmental Impact Assessment (EIA) Regulations were adopted in 1995 as subsidiary to the EPA. Part V of the EPA is devoted entirely to Environmental Impact Assessments (EIA)[28]. These Regulations outline criteria for environmental impact, define significant environmental issues, and stipulate the minimum content of an EIA. Of major significance in the EIA Regulations are two schedules: one which categorizes projects for which EIA is mandatory, and the other that stipulates those projects that must undergo a screening process to determine whether an EIA is necessary. Also stipulated are those projects for which an EIA is not required.

The EPA also has a subsidiary regulation for effluent discharge into the environment[29]. The EPA stipulates that any person intending to undertake any project, programme or activity which may significantly affect the environment shall cause an EIA to be carried by a suitably qualified person and submitted to the DOE for evaluation and recommendation.

Once a project proposal is submitted to the DOE, a screening exercise is undertaken to determine the level of environmental assessment necessary. The regulation categorizes projects in three schedules. It is mandatory that an EIA be developed for proposals that fall under "Schedule I" of the regulations. These are usually projects that will have significant negative long term impacts and cause irreversible damage on the biophysical environment. Proposals that fall under "Schedule II" are at the discretion of the DOE in the determination of the level of assessment necessary, and they are essentially different from Schedule 1 proposals in terms of size only. The third is where the magnitude of the project impacts is minimal and does not fit into the "Schedule I or II" projects. To ensure that no major assessment will be necessary and for certainty, it is strongly recommended by DOE that a letter be submitted to them indicating the programme, project, undertaking or activities so that they can screen and issue environmental clearance if necessary.

[27] http://www.doe.gov.bz/index.php/services/doc_download/73-environmental-protection-act-chapter-328-of-the-substantive-laws-of-belize-revised-edition-2000
[28] http://www.doe.gov.bz/index.php/services/doc_download/75-the-environmental-impact-assessment-regulations
[29] http://www.doe.gov.bz/index.php/services/doc_download/78-environmental-protection-effluent-limitations-regulations

As a Category B project under the World Bank classification, a pre-screening is required for all sub-projects against the project-specific Environmental Exclusion Criteria (see 4.2.3.), then followed by the Project Environmental Screening Form (Annex 2). Further, preparation of an EMP will be obligatory to each sub-project, the scope of which will depend on the planned activities. In some cases, possibly a more comprehensive EA will be required.

Under the EIA regulations, the DOE can apply different levels of environmental assessment to determine the likely environmental impacts of a proposed development. The DOE may require an EIA, which is the highest level of assessment, or a Limited Level Environmental Study (LLES). For those projects that do not require either the EIA or LLES, immediate environmental clearance is granted without any studies requested. Once a project requires a study, the applicants must follow the procedures outlined in the EIA regulations and guidelines (DOE, 2011)[30]. A LLES is usually required for Schedule II proposals. In the case of an EIA, all impacts are evaluated and a public consultation is mandatory, while for a LLES only likely impacts identified by the DOE are assessed, and a public consultation is discretionary. The third level of study (Schedule III)[31] is undertaken for proposals that have low or insignificant environmental impacts but may warrant that conditions be placed on the developer to ensure that the development of the project does not go beyond the proposal and does not require an EIA or LLES.

If the DOE determines that an EIA or LLES is required, then a screening phase is followed by a scoping phase which determines the focus area of the study in conformity with guidelines set out in the regulations. Following this the preparer is given permission to conduct the EIA or LLES. Upon completion and approval by the DOE the report can proceed to full submission to the DOE. A National Environmental Appraisal Committee (NEAC) reviews the reports and makes recommendations to the DOE on the merits and demerits. The DOE is responsible for issuing a final approval or disapproval. The NEAC is made of a cross sector of technical professionals that are called upon based on the nature of the project to give their recommendations to the DOE.

Once the studies are completed and approved by the DOE, an Environmental Compliance Plan (ECP) is developed by the DOE. The ECP is a legally binding agreement between the DOE and the developer. It outlines what should be done after the environmental assessment is approved in terms of mitigation and monitoring necessary for environmental protection. Breach of the ECP or EPA can lead to penalties that include revoking of the development license, fines and or confinement to the local prison.

The EPA lists the areas that the EIA should evaluate, including effects on humans, flora and fauna, water, soil, air, ecological balance, among others. The EIA is required to include measures that should be undertaken to mitigate any adverse environmental effects, and statement of reasonable alternatives and justification for their rejection. Further, the EPA makes provision for the development of regulations prescribing procedures, guidelines, and the types of projects for which an EIA may be required. The EPA also mandates the involvement of the public in the EIA process.

[30] http://www.doe.gov.bz/index.php/services/publications/doc_download/118-procedures-manual-for-the-preparation-of-an-environmental-impact-assessment-in-belize

[31] Neither an EIA or LLES is required for Schedule III projects but measures can be stipulated in an Environmental Compliance Plan (ECP) for the proposed project.

The DOE is also responsible for enforcement of the Effluent Limitation Regulation[32], which stipulates procedures for censuring discharges of effluent into inland waters or the marine environment.

The DOE developed a **Procedures Manual for the Preparation of an EIA in Belize** (DOE, July 2011), which is a legislative document that outlines the various statuary provisions governing the granting of permission for development. It sets out the legal and institutional framework within which applications for planning and development permissions are determined, and identifies the general objectives of planning for development in Belize.

In 2011 the Government of Belize (GOB) enacted the **National Integrated Water Resources Act** which will require much support in the implementation of its objectives. This law provides for the management, controlled allocation and the sustainable use and protection of the water resources of Belize. It also provides for the establishment of a National Integrated Water Resources Authority to coordinate and assist in regulating the water sector.

3.3.2. NATURAL HABITAT LAW

The Fisheries Department has responsibility for protection of marine ecosystems generally and to provide management oversight through the issuance of licensing, monitoring and enforcement of the Fisheries Act and associated regulations. Belize's fisheries industry is an important sector for economic generation in the country. As such, there is a grave need for an adequate regulatory framework. The Living Aquatic Resources Bill, which when enacted will repeal the Fisheries Act, is a very modern, robust piece of legislation that incorporates international principles and approaches greatly needed for sustainable and responsible fisheries. The Bill demonstrates Belize's commitment to a modernized and robust legal framework for the sustainable development and conservation of its coastal and marine resources. When enacted, the Living Aquatic Resources Bill will be the principal governing legislation to regulate Belize's fishing industry, and is directly concerned with maintaining sustainable fish stocks and protecting the marine and freshwater environments. The Bill requires that artisanal fishers and fishing vessels are licensed annually in order to fish for commercial purposes.

The Forest Department has the responsibility for administering five pieces of legislation. The **Forest Act** Chapter 213 of the Laws of Belize provide for the protection and preservation of trees, forest products as it relates to felling of trees, grazing of cattle, hunting, shooting, clearing for cultivation, burning lime or charcoal, collecting and removing forest products. One may also be required to consult with other important local legislation or convention from time to time.

Also mandated under the Forest Act is Protection of Mangrove Regulations (SI 52 of 1989, under revision), which provide for the protection of mangroves, with restrictions on mangrove alteration and/or clearance. Before granting a permit for mangrove alteration, Belize law requires the Forest Department to consider whether the project will adversely affect the conservation of the area's wildlife, water flow, erosion and values of marine productivity, and to find either "that the proposed alteration will not significantly lower or change water quality" or that the degradation of water quality is in the "larger and long-term interest of the people of Belize" (Forest Act). Under the Forest Act, forest reserves can be declared.

[32] http://www.doe.gov.bz/index.php/services/doc_download/78-environmental-protection-effluent-limitations-regulations

The **National Parks System Act** (revised 2000) is the most comprehensive law for protected areas and allows for the designation of national parks, wildlife sanctuaries, natural monument, and nature reserves. The various categories of protected areas allow for varying uses of the different categories. In addition to the existing protected areas, a number of other areas have been proposed for declaration and for all practical purposes are considered within the system of protected areas.

The **Wildlife Protection Act** (SI 12 of 1982, revised 2000) also falls under the Forest Department, and provides protection for species of conservation concern, with the regulation of hunting and commercial extraction of wildlife species.

The **Mines and Minerals Act** (1989) and the **Petroleum Act** (1991), under the Department of Geology and Petroleum, regulate the exploration and extraction of all non-renewable resources, including oil. These Acts also control activities such as dredging, prospecting and drilling which have the potential to impact the environment.

There is currently significant fragmentation in decision-making, with these different Acts falling under different Ministries. This is being addressed to a great extent through the National Protected Areas Policy and System Plan (NPAPSP), currently overseen by the National Protected Areas Secretariat (NPAS), which is guided by a National Protected Areas Technical Committee. Under a "Strengthening National Protected Area's Capacities Project", a legislative review is currently being completed, tasked with the harmonization of legislation relating to protected areas, and the establishment of a reformed institutional and administrative structure for the protected areas of Belize.

3.3.3. PHYSICAL CULTURAL RESOURCES LAW

The **National Institute for Culture and History (NICH) Act** makes provision with respect to the protection and conservation of ancient monuments and related matters. All ancient monuments and antiquities, whether upon any land or in any river, stream or watercourse, or under territorial waters of the country should not be destroyed and no person shall possess or have in custody any ancient monument or antiquity except under a license granted by the relevant Minister. MCCAP sub-projects that are determined to have an impact on ancient monuments and antiquities will not be allowed. With respect to the MCCAP, the relevant sections of the NICH Act are the following:

- Section 61.-(1) Subject to subsection (2), no person shall remove any earth or stone from any ancient monument except under a permit in the prescribed form issued by the Director.
- Section 61.-(2) This section shall not apply to any person or group of persons holding a permit granted by the Director under section 49 in so far as they transfer debris or spoil within the specified land as part of their operations.
- Section 61.-(3) Any person who contravenes subsection (1) commits an offence and is liable on summary conviction to a fine not exceeding one thousand dollars or to imprisonment for a term not exceeding twelve months, or to both such fine and term of imprisonment.
- Section 62.-(1) Subject to the provisions of this Act, any person who: (a) willfully damages, destroys or disturbs any ancient monument or in any way marks or defaces any

ancient monument; or (b) willfully removes any antiquity from any ancient monument or destroys any such antiquity, commits of an offence.

- Section 62.-(2) Any person who willfully causes or induces or attempts to cause or induce any other person to commit an offence under this Part or who knowingly aids and abets any other person in the commission of any such offence also commits an offence.
- Section 63.-(1) The Director may direct any land owner, lessee, concessionaire, contractor or any other person who is about to engage in any operation which in the opinion of the Director is liable to destroy, damage, interfere with or otherwise be to the detriment of any ancient monument or antiquity: (a) not to proceed with any operation until the Director shall have had an archaeological exploration and survey carried out; and (b) to take or to refrain or desist from taking any such action as part of the operation as the Director may decide to be fair and reasonable for the proper protection of the ancient monument or antiquity.
- Section 63.-(2) Any person who contravenes any direction in writing of the Director under subsection (1) commits an offence and is liable on summary conviction to a fine not exceeding ten thousand dollars or to imprisonment for a term not exceeding five years, or to both such fine and term of imprisonment.

According to the NICH Act "ancient monument" means "any structure or building erected by man or any natural feature transformed or worked by man, or the remains or any part thereof, whether upon any land or in any river, stream or watercourse or under the territorial waters of Belize, that has been in existence for one hundred years or more". "Antiquity" means any article manufactured or worked by man, whether of stone, pottery, metal, wood, glass, or any other substance, or any part thereof: (i) the manufacture or workmanship of which belongs to the Maya civilization, being of an age of one hundred years or more; or (ii) the manufacture or workmanship of which belongs to a civilization other than the Maya civilization, being an article which is of an age of one hundred years or more".

3.3.4. PEST CONTROL

In Belize, pesticide control is well developed, regulated by a Pesticide Control Board (PCB) that was established under the Pesticide Control Act, Chapter 216[33] of the Laws of Belize. The Act gives authority to the PCB to enforce the law and to control the manufacture, importation, sale, storage, use, and disposal of pesticides by administering of the following functions to control and monitor the use the pesticides (Pesticide Control Act, Chapter 216 - Revised Edition 2003 Showing Substantive Laws as at 31st May, 2003):

- To register pesticides;
- To classify any pesticide as a registered pesticide, restricted pesticide or a prohibited pesticide;
- To license persons to import or manufacture pesticides;
- To authorize persons to sell restricted pesticides;
- To register premises in which a restricted pesticide may be sold;
- To authorize pesticide applicators to use restricted pesticides;
- To consider and determine applications made pursuant to this Act and to deal with all aspects of the importation, manufacture, packaging, preparation for sale, sale, disposal and use of pesticides and to advise the Minister on all matters in relation thereto;

[33] http://faolex.fao.org/docs/pdf/blz33344.pdf

- To do such other things as may be expedient or necessary for the proper performance of its functions under this Act.
- To train, or to arrange for the training of, persons in the safe use of pesticides.

The PCB maintains a website that provides information on its board of directors and organizational structure, pertinent laws, regulation, and publications highlighting training manuals, booklets, and information pamphlets on pesticide use, management, safe application, and proper disposal of containers. Since the passing of the Act, six regulations have been passed to provide for the specific management of pesticide in Belize:

- Statutory Instrument No. 8 of 1989 - Registered and Restricted Pesticides (Manufacture, Import and Sale) Regulations, 1988
- Statutory Instrument No. 77 of 1995 - Registered and Restricted Pesticides (Registration) Regulations, 1995
- Statutory Instrument No. 30 of 1996 - Registered and Restricted Pesticides (Manufacture, Import and Sale) (Amendment) Regulations, 1996
- Statutory Instrument No 112 of 1996 - Restricted Pesticides (Certified User) Regulations, 1996
- Statutory Instrument No 71 of 1998 - Pesticides Control (Sale and Confiscation) Regulations, 1998
- Statutory Instrument No. 18 of 2003 - Registered and Restricted Pesticides (Registration) (Amendment) Regulations, 2003

The monitoring and control of pesticides is carried out by a team of technicians employed by the PCB that check regularly those that are licensed to sell, buy, and use pesticides. Persons who contravene any of the provision of Act are guilty of an offense and are liable to a fine not exceeding $5,000 and/or imprisonment for a period not exceeding 5 years.

3.4. BELIZE ENVIRONMENTAL STRATEGIES

Table 5: Belize Environmental Strategies

Environmental Strategy	Purpose
National Biodiversity Strategy and Action Plan	Provides a framework and guide for the implementation of actions necessary for Belize to conserve and sustainably use its biological resources. The strategy addresses the threats to biodiversity, including deforestation, legislation, as well as community participation and involvement.
National Protected Areas Policy and System Plan	A plan and policy for the establishment and management of Belize's protected areas system.
Belize National Environmental Action Plan	An overview of the major environmental issues facing Belize and prudent use and management of natural resources.
National Biological Corridors Program Strategy	Focuses on promoting alternative land uses within proposed corridor routes that are compatible with sustaining and enhancing biodiversity in the long run, while being able to

	accommodate the present and future developmental needs of Belizeans.
Belize National Forest Policy	Addresses forest sector issues such as overexploitation of timber and non-timber species, community participation in forest management, and the need for improved forest governance.
National Integrated Coastal Zone Management Strategy for Belize	Facilitates improved management of coastal resources in Belize and ensures that economic growth is balanced with sound environmental management in Belize's coastal zone.
Horizon 2030	A long-term development framework for Belize that addresses national development.
Belize Climate Change Adaptation Policy	Prepares all sectors of Belize to meet the challenges of global climate change; promotes the development of economic incentives, which encourage investment in public and private sector adaptation measures; develops Belize's negotiating position on climate change at the regional and international levels to promote its economic and environmental interests; and fosters the development of appropriate institutional systems for planning and responding to global climate change.
National Integrated Water Resources Management Policy for Belize	Sets goals and objectives for the management of water resources at the national scale and includes policies for regions, catchments, shared or trans-boundary water resources, and inter-basins transfers. It addresses both the quantity and quality aspects of both surface and groundwater resources and also deals with the delivery of water services.

3.5. INTERNATIONAL CONVENTIONS AND AGREEMENTS

In addition to the local environmental mechanisms in place, over the past fifty years Belize has signed a number of international conventions aimed at protecting the environment in ways that are both nationally and globally important. These international environmental conventions and agreements focus on addressing the global and local human impact on the environment;

conservation and appropriate use of wetlands and their resources; conservation, sustainability, and equally and fairly shared benefits of biological diversity; the formulation of pragmatic solutions to the most pressing environment and development challenges; climate change, protection of the world cultural and natural heritage; plant protection, regulation of whaling; law of the sea; and trade of endangered species.

These agreements listed must be kept in mind when evaluating any sub-project under the MCCAP. Table 4 is a list of the conventions and agreements that have been signed and may affect project implementation. These Conventions and Agreements also promote the use of best practices that function as additional environmental safeguards.

Table 6: Relevant International Conventions & Agreements

International Conventions and Regional Agreements	Ratified	Purpose
International Convention for the Protection and Conservation of Sea Turtles for the Western Hemisphere	1997	To promote the protection, conservation and recovery of sea turtle population and the habitats on which they depend
Alliance for the Sustainable Development of Central America	1994	Regional alliance supporting sustainable development initiatives
Convention on Biological Diversity	1993	To conserve biological diversity to promote the sustainable use of its components, and encourage equitable sharing of benefits arising from the utilization of natural resources
Convention on the Conservation of Biodiversity and the Protection of Priority Wilderness Areas in Central America	1992	To conserve biological diversity and the biological resources of the Central American region by means of sustainable development
United Nations Framework Convention on Climate Change	1992	An overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases
UNESCO Man and the Biosphere Programme	1990	To promote the sustainable use and conservation of biological diversity and for the improvement of the relationship between people and their environment globally, through encouraging interdisciplinary research, demonstration and training in natural resource management
Central American Commission for Environment and Development	1989	Regional organizations of Heads of State formed under ALIDES, responsible for the environment of Central America. Initiated Mesoamerican Biological Corridors and Mesoamerican Caribbean Coral Reef Programs
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	1983	To protect the marine environment of the wider Caribbean region for the benefit and enjoyment of present and future generations
United Nations Convention on the Laws of the SEA	1983	A legal order for the seas and oceans which will facilitate international communication and promote the peaceful uses of the seas and

International Conventions and Regional Agreements	Ratified	Purpose
		oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment
Convention on the Conservation of Migratory Species of Wild Animals	1979	To protect migratory species
Convention on the Protection of Archaeological, Historical and Artistic Heritage of American Nations	1976	To protect the Archaeological heritage of signatory countries. Several Maya Archaeological sites exist, four of which have been identified during the Maya Mountain Project - including the second largest site in Southern Belize
Convention on International Trade in Endangered Species of Wild Fauna and Flora	1973	To ensure that international trade in specimens of wild animals and plants does not threaten their survival
Convention Concerning the Protection of the World Cultural and Heritage	1972	To encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity
Convention on Wetlands of International Importance	1971	To stem the progressive encroachment on and loss of wetlands now and in the future, recognizing the fundamental ecological function of wetlands and their economic, cultural, scientific and recreational value
International Planet Protection Convention	1951	To promote the protection, conservation and recovery of sea turtle population and the habitats on which they depend

4. ENVIRONMENTAL PERMITS AND REQUIREMENTS

4.1. APPLICATION OF LOCAL ENVIRONMENTAL INSTRUMENTS AND SAFEGUARDS

Environmentally responsible development should consider direct and indirect impacts, cumulative impacts, identification of practices that will protect the environment throughout the project cycle (during and after implementation, and operation), and preparation of an environmental monitoring programme.

4.1.1. IMPACT IDENTIFICATION, ASSESSMENT AND EA PROCESS

Impact identification and environmental assessments should include all relevant technical guidelines to facilitate early identification of environmental issues and incorporate adequate management measures. Technical guidelines aid proper focusing of environmental studies. In identification of impacts under the MCCAP, it is important that all sub-projects are screened to ensure compliance with the local environmental and World Bank protection measures. To ensure that this occurs, all sub-projects proposed for project financing must complete the Project Environmental Screening Form (PESF) developed (Annex 2). The intention is to provide a standard format for initial screening of all sub-projects to ensure that an assessment of environmental impacts is undertaken and mitigation measures proposed.

Properly identifying the impacts that a project will have on the environment is critical to plan for an adequate mitigation response. The impact identification matrix will provide the platform on which all impacts will be assessed to ensure that they will be equally quantified across sub-projects. All proposed activities shall be vetted using the procedures set out in this EMF. Assurance will be given to the sub-project implementers (e.g., fishers associations and community groups) that the sub-project has been properly screened. There are three main objectives in utilizing this methodology:

- There is a high probability of the same outcome from different appraisers.
- The process is reliable and accurate.
- There is traceability in determining the impact.

The impact identification matrix consists of four levels of consequences and likelihood of those consequences occurring. By corresponding the consequence with the likelihood, three levels of preliminary impacts can be determined: significant, medium and low. For example, level of risk is determined at the point where the consequence and likelihood of it occurring intersect.

4.2. METHODOLOGY AND INSTRUMENTS

4.2.1. TYPES OF SUB-PROJECTS

Some livelihoods diversification sub-projects proposed under the MCCAP are:

- Farming of Red Hybrid Tilapia
- Cultivation and processing of seaweed in shallow coastal areas (reef lagoon)
- Harvesting of Florida Stone Crab
- Farming of River Lobster or Malaysian Prawns
- Farming of Sea Cucumber
- Re-population of Coral Reefs
- Training in Dive and Snorkel Tourism (Capacity Building)

A description of some of these potential sub-projects can be seen at Annex 6.

4.2.2. ENVIRONMENTAL CATEGORIZATION

The environmental impacts of the sub-projects differ based on their size or magnitude, and the specific sub-project location's surrounding sensitivity with regard to environmental aspects. The categorization to be applied by the MCCAP will thus classify the sub-projects in terms of the environmental risk level (Category) which could be: (B) Moderate risk, or (C) Low risk. Category A/Schedule I or Schedule II sub-projects that would require an EIA will not be eligible for MCCAP funding. Based on the very environmentally oriented nature of the basic MCCAP design and the scope of the investments and potentially included infrastructure, there is anyway very little likelihood of such high-risk projects.

Proposed MCCAP sub-projects will be assessed according to three distinct grades: (1) Grade 1 (or Schedule I) for those requiring a full EIA; (2) Grade 2 (or Schedule II) for those that should undergo a screening process to determine the level of assessment necessary; and (3) Grade 3 for those sub-projects that have low or insignificant environmental impacts and will most probably

not require any further assessment (see Annex 7 on environmental categorization). All sub-projects involving any type of civil works will require at least an EMP (World Bank requirement) and a Limited Level Environmental Study (Belize DOE requirement) (Annex 8). Each project listed under the various sub-project types is evaluated based on its potential negative impact, and cross-checked with the EIA Regulations (Environmental Protection Act) Schedules.

According to the EIA (Amendment) Regulations (2007), an EIA is required for Schedule I projects. Project-related examples of Schedule I projects that will not be eligible for MCCAP funding are:

- Any proposed development project, undertaking or activity within any protected area.
- Any research or commercial scale aquaculture project within wetland and floodplain areas.
- Any seabed-based marine culture or freshwater cage culture aquaculture facility to be established within 15 acres of production area for the purpose of producing any aquaculture produce.
- Any marine aquaculture facility to be established within 5 miles radius of the Belize Barrier Reef or any major coral reef system.
- Any freshwater aquaculture facility either utilizing a total pond production area of 50 acres or more, or a total daily water abstraction rate greater than 5 million gallons per day.

Schedule II projects would require only an LLES, depending on the location or size of the projects, such as:

- Construction or expansion of a marine aquaculture research or commercial facility with production capacities of less than 75 tons per annum of unprocessed aquaculture produce.
- Any seabed-based marine culture or freshwater cage culture aquaculture facility which will utilize less than 15 acres of production area for the purpose of producing any aquaculture produce.
- Any aquaculture facility or operation involving the culture of any aquatic flora or fauna already under commercial production in Belize.
- The establishment of any processing facility in Belize for the processing of any aquaculture commodity.
- The establishment of any hatchery facility in Belize for the purpose of producing freshwater and marine seedstocks either for aquaculture or restocking purposes.
- Commercial poultry rearing.
- Commercial pig-rearing of more than 10 sow breeding herd.
- Planting and cultivation of agriculture plots of more than 200 acres (e.g., vegetable).
- The packing or canning of animal or vegetable products.
- The manufacture of dairy products.
- Development of tourist or recreational facilities on cayes or islands, or adjacent to protected areas.

4.2.3. ENVIRONMENTAL EXCLUSION CRITERIA

In addition to the overall eligibility criteria defined in the project's Operational Manual, sub-projects will be excluded from consideration based on the following environmental criteria:

- No environmental analysis was done (e.g., sub-project documents are submitted without the applicable environmental management instrument);
- The sub-project is on Schedule I of the EPA Regulations or on Schedule II but requires an Environmental Impact Assessment or Category A of the World Bank Safeguards (See Section 4.2.2. above);
- The negative impacts are irreversible and/or would require significant investment to mitigate or repair;
- Even if temporary, the impacts are sufficiently large to negatively affect nearby communities for an extended period;
- If tourism-related, the sub-project does not follow environmental good practices (see Annex 9 for some suggested tourism-related environmental good practices);
- The sub-project is in an area that is considered sensitive by the respective lead agencies, for example wilderness zone or replenishment zone of a marine protected area or a known historical or cultural site without intentional and adequately managed relation to the same (see Section 3.1.5.); and
- The sub-project employs technologies that are considered to be inappropriate for the area or the country.

4.2.4. SITE SENSITIVITY AND ENVIRONMENTAL CATEGORIZATION

Potential MCCAP sub-projects will not require a full EIA but would require a LLES, based on consultations with the DOE. All of the sub-projects will require a screening process to define the environmental risk level and the level of assessment/specific studies required. It is important that PACT and the MFFSD (via the Fisheries Department) complete the categorization using the Tables 7 and 8 below, to cross the environmental grade with the variable of the environmental site sensitivity. Further, each sub-project needs to define if a specific plan related with a particular World Bank environmental safeguard is required. The following presents the methodology to be used for the analysis during the categorization process:

To determine the level of the site sensitivity (high, moderate or low) where the sub-project will be located, the checklist presented below will be used. This checklist includes some aspects related to safeguards issues.

Table 7: Site Sensitivity

Sensitivity	Description	Checkmark (✓)
	Situated within a National Park or Protected Area – MFFSD	
	High Index of biodiversity	
	High degree of threat – CITES	
	High degree of endemism – CITES	

HIGH	High danger of environmental degradation (deforestation, hunting, others)	
	Vulnerable Zones to natural disasters (floods, earthquake, other)	
	Sensitive or critical ecosystems (wetlands, mangrove swamps, primary or secondary forests, other) – MFFSD	
	Zones recognized as indigenous groups area or vulnerable populations in the direct area of influence of the sub-project	
	Presence of places of highly cultural and historical interest in the direct influence area	
MODERATE	Proximity to Protected Areas – MFFSD	
	Moderate index for biodiversity	
	Moderate degree of threat – CITES	
	Moderate degree of endemism – CITES	
	Moderate danger of environmental degradation (deforestation, hunting, others)	
	Wavy topography (15 to 35% of slope) related to improvement or new construction of roads	
	Moderate risk to natural disasters (floods, earthquake, others)	
	Zones recognized as indigenous groups area or vulnerable populations in the indirect area of the sub-project influence	
	Presence of places of highly cultural and historical interest in the indirect influence area	
LOW	Intervened areas out of national parks or their buffer areas	
	Low biodiversity degree	
	Low degree of threat– CITES	
	Low degree of endemism – CITES	
	Low danger of environmental degradation (deforestation, hunting, others)	
	Vegetation intervened	
	Zones with low risk to natural disasters (floods, earthquake, others)	
	Absence of sites with cultural and historic value	
	Absence of indigenous groups	

If at least one setting is high, the site sensitivity of the entire sub-project is HIGH; if no setting is in high sensitivity but at least one setting is in moderate, the site sensitivity is MODERATE; and if there is no high and/or moderate setting, the site sensitivity is LOW.

The final environmental categorization will be the result of overlaying or crossing the preliminary environmental grading and the site sensitivity. To arrive at this result, the MCCAP will apply the following matrix:

Table 8: Environmental Categorization Matrix

Project Grade	Site Sensitivity		
	High	Moderate	Low
1	A	A	A
2	A	B	B
3	B	B	C

Category A: Those sub-projects with high potential environmental risk, because the work area of influence presents high level of sensibility and the sub-project is of such a magnitude that it can alter the natural environment, biodiversity, the economic organization and cultural property.

Category B: Those sub-projects with moderate potential environmental risk, because the area of influence presents moderate level of sensitivity, nevertheless the civil works are less complex. The environmental impacts are easily identifiable and mitigated.

Category C: Those sub-projects with low potential environmental risk. The natural environment, biodiversity, population or cultural property is not at risk.

Category A sub-projects will be excluded from this Project.

5. ENVIRONMENTAL MANAGEMENT PROCESS AND SCREENING PROCEDURES

5.1. ENVIRONMENTAL IMPACT ASSESSMENT

All "Category A" sub-projects would require an Environmental Impact Assessment (EIA) and will not be eligible for MCCAP funding. Sub-projects, however, are expected to fall within Schedule II of the national EIA Regulations, making them subject to some level of assessment to be determined by the DOE. All sub-projects to be implemented under the MCCAP are required to obtain environmental clearance from the DOE.

Annex 3 presents the "General Principles of Environmental Impact Assessment in Belize" that include, among others: a) Approach to EIA; b) Steps in the EIA process (project description, screening, scoping, description of the environment, determination of impact, mitigation measures, alternatives, monitoring and evaluation, and documentation and reporting); and c) the Review Process and the role of the NEAC.

Regarding practical assessment tools used in Belize, an early one to be used to describe the environmental setting of a project proposal and submitted to the DOE is an Environmental Checklist that the DOE has available for certain sectors, as presented below. The purpose of this checklist is to provide information to assist the proponent and the GOB to identify impacts of a proposal and to take adequate and practical measures to mitigate any adverse environmental impacts that may result from the proposal. This checklist will also help the DOE decide whether an EIA is required for said proposal.

The environmental checklist asks the applicant to describe some basic information about the proposal. Applicants are asked to answer the questions briefly, with the most precise information known, or give the best description they can. Each question must be answered accurately and carefully, to the best of the applicant's knowledge. In most cases, the applicant should be able to

answer the questions from his/her own observations or project plans without the need to hire experts. If a question does not apply to a proposal, the applicant can write "Does not apply".

Completing a checklist may avoid unnecessary delays later. Some questions ask about governmental regulations, and an applicant should answer said questions as he/she can. If with problems, the governmental agencies can assist the applicant. The checklist questions apply to all parts of a proposal, even if they are planned over a period of time or on different parcels of land. The applicant should attach any additional information that will help describe the proposal or its environmental effects. The DOE, upon receipt of a checklist, may ask the applicant to explain any answer or provide additional information reasonably related to determining if there may be significant adverse impact.

Available at the DOE are the checklists for the following sectors:
1. Petroleum
2. Mining
3. Tourism
4. Sub-divisions/Construction
5. Light Industry
6. Agriculture

5.1.1. ENVIRONMENTAL CLEARANCE PROCESS

Prior to obtaining environmental clearance to a particular development project, potential developers are required by law to submit their proposed project to the Department of the Environment for environmental screening, as part of the environmental clearance process. Project screening means determination of proposed sub-projects on whether it would be necessary or not for them to proceed with initial assessment of impact on environment and/or society or detailed environment impact assessment. The EIA Regulations outline criteria for environmental impact, define significant environmental issues, and stipulate the minimum content of an EIA. Of major significance in the EIA Regulations are two schedules: one which categorizes projects for which EIA is mandatory (Schedule I), and the other (Schedule II)that stipulates those projects, which based on their magnitude, nature, location, etc. may be required to conduct an EIA or another type of environmental impact study, such as a Limited Level Environmental Study (LLES). There is also a Schedule III of the EIA Regulations which are guidelines to be used by permitting agencies to determine which type of project are required to be submitted to the DOE for environmental clearance. All sub-projects to be implemented under the MCCAP are required to obtain environmental clearance from the DOE.

The extent of environmental work that might be required, prior to the commencement of sub-project implementation, will depend on the outcome of the screening process described below.

Step 1: Pre-Screening of Sub-projects

Prior to commencement of works, MFFSD (Fisheries Department) staff or selected consultants will prepare a list of sub-project proposals (detailing the sub-project works to be conducted and their potential impacts – see Table 10). For those sub-projects that are not filtered out after applying the Environmental Exclusion Criteria (see Section 4.2.3.), MFFSD (Fisheries Department) and/or PIAG staff will proceed to screen the sub-projects/determine if they are Schedule II or III and require further assessment.

The steps that follow will be applied to potential or proposed sub-projects that are determined to be Schedule II.

Step 2: Screening/Categorizing of Sub-projects

The screening process will facilitate the identification of potential environmental impacts, the determination of their significance, assignment of the appropriate environmental category (consistent with OP 4.01), and need to conduct a particular environmental study.

All MCCAP "Schedule II/Category B" sub-projects require screening for environmental assessment according to the EIA Regulations and the WB OP/BP 4.01, applying the respective checklist and guidelines as described in the present EMF. The menu of potential sub-projects that will require this screening process is presented in Table 9.

Table 9: Sub-projects Requiring Screening

Project Type	Required Screening	No Screening Required
1. Farming of Red Hybrid Tilapia	• Site location • Construction of earthen ponds or installation of above ground ponds • Water supply • Ponds drainage • Effluent treatment • Breading of brood-stock (including source and food supply) • Flood protection • Maintenance procedures	• Training in culture operation • Training in marketing of cultured products
2. Cultivation and processing of seaweed in shallow coastal areas (reef lagoon)	• Site suitability • Construction of culturing apparatus • Sourcing of brood-stock • Maintenance procedures	• Training in culture operation • Training in marketing of cultured products
3. Farming of River Lobster or Malaysian Prawns	• Site suitability • Construction of farming pen • Feeding procedure • Treatment of effluent • Flood protection • Maintenance procedures	• Training in culture operation • Training in marketing of cultured products
4. Farming of Sea Cucumber	• Site suitability • Construction of farming pen • Feeding procedure • Pollution control • Flood and storm impact mitigation • Maintenance procedures	• Training in culture operation • Training in marketing of cultured products
5. Re-population of Coral Reefs	• Site suitability • Construction of nursery tables /frames • Storm impact mitigation • Maintenance procedures	• Training in nursery construction and management • Training in out-planting techniques

As part of the screening/categorizing process, the DOE may organize and conduct site inspections to the proposed project areas along with relevant agencies.

It is to be noted that all MCCAP sub-projects will require a simple standardized EMP at an absolute minimum.

Step 3: Carrying Out Environmental Work

After reviewing the information provided in the environmental screening form, and having determined the appropriate environmental category (Annex 7), the DOE will determine whether (a) the application of good environmental practices and/or simple mitigation measures outlined in the applicable Environmental Checklist will suffice; or (b) a Limited Level Environmental Study (LLES) will need to be carried out (see Annex 8 for sample LLES TOR).

Carrying out Environmental Study

The environmental clearance process will identify and assess the potential environmental impacts of the proposed sub-project/potential construction activities, evaluate alternatives, as well as design and implement appropriate mitigation, management and monitoring measures. These measures will be captured in the Environmental Management Plan (EMP), which will be prepared as part of the EA process for each sub-project. A generic LLES TOR in Annex 8 will guide the EA study for category B sub-projects.

Regarding Schedule III, the DOE has the following guidelines available to determine if an activity would need to be sent to the DOE for review:

- All applicants for development in coastal areas or offshore cayes or islands.
- All applications for development near or in ecologically sensitive areas such as but not limited to swamps, marshes, mangrove forest, lagoons, barrier reef, flood plains, etc.
- All applicants for development within or in close proximity to the following areas:
    - Any protected areas.
    - Critical habitats for protected, threatened or endangered species of floras and fauna.
    - Primary Biological Corridors.
- All developments which discharge industrial effluent unto soil or water, including air emissions.
- All applications involving the building of sewage treatment and disposal systems. This includes all plants which have an initial projected output of more than fifty thousand (50,000) gallons per day of sewage.
- Applications with proposed sites located in the primary flood plain of a major river or stream.
- Proposals at sites which are in close proximity to vulnerable areas (unstable soils, gully, stream banks or steep slopes more than 25 degrees).
- All applications for development in major watershed areas.
- Proposals which necessitate the clearing of large areas (more than 500 acres) of vegetation.
- All applications for small scale extraction and processing of minerals.
- All activities related to the petroleum sector.
- Any desalination plant proposing to extract more than 5 million gallons per day.

Preparation of the required study, if any, will be carried out in consultation/collaboration with the relevant sector Ministries and potentially affected persons. The relevant government departments in close consultation with MFFSD (Fisheries Department) and/or PIAG staff will arrange for: (i) preparation of related TOR for sub-projects; (ii) recruitment of a service provider to carry out the study; (iii) public consultations, as deemed appropriate; and (iv) review and approval of the study by the DOE.

Step 4: Review and Approval of the Screening Activities

The results and recommendations presented in the environmental screening form and the proposed mitigation measures presented in the Environmental Checklist will be reviewed by the DOE.

Where an EIA has been carried out, the DOE will review the reports to ensure that all environmental impacts have been identified and that effective mitigation measures have been proposed.

Based on the results of the above review process, and discussions with the relevant stakeholders and potentially affected persons, the DOE, in case of sub-projects that do not require an EIA, will make recommendations regarding the approval/disapproval of the screening results and proposed mitigation measures. As regards EIA reports, the DOE will recommend EIA reports to the NEAC for approval.

Step 5: Public Consultations

Public consultation is a regulatory requirement by DOE (and the EIA process) and the World Bank safeguards by which the public's input on matters affecting them is sought in regard to the sub-project. Its main objectives will be improving the efficiency, transparency and public involvement in the sub-project that will enhance the compliance of the environmental laws and policies in regard to the implementation of the sub-projects. It will involve notification (to publicize the matter to be consulted on), consultation (a two-way flow of information and opinion exchange), as well as participation involving interest groups. It is important to note that the MCCAP has a Culturally Appropriate Participation Plan to guide the project dialogue with Indigenous Peoples' groups.

Step 6: Environmental Monitoring[34]

The following guidelines for the environmental monitoring under the MCCAP describe the processes and activities that need to take place to characterize and monitor the quality of the environment in the sub-project sites. This will be used towards the preparation of a simple environmental baseline to be defined and presented in the EMP specific to each sub-project, as relevant. Said baseline will capture the particular circumstances in which the sub-project activities carry a risk of harmful effects on the natural environment or people. All monitoring strategies and programs for the sub-projects shall have reasons and justifications which will be designed to establish the initial and following status of the related key environmental aspects or to establish trends in environmental parameters where the sub-projects shall be implemented. In all cases, the results of monitoring will be reviewed, analyzed statistically as applicable, and

[34] See Monitoring Plan in Annex 2.

published for the purpose of project implementation. The sub-projects' EMPs will include a specific monitoring programme linked to the overall sub-project monitoring, specifically focused to the final use of the data before project monitoring starts. Environmental monitoring of the sub-projects will be continued throughout the duration of the MCCAP.

Regulation 22A of Section 13 of the EIA (Amendment) Regulations of 2007 states that the Developer (that is, the sub-project implementers) may be required to pay an environmental monitoring fee, which will be used by the DOE for monitoring and assessments of MCCAP sub-projects. Section 30 of Section 18 further states that the DOE "may require performance bonds or guarantees at an appropriate level" to ensure that the MFFSD or sub-project implementers comply with the terms and conditions of the environmental compliance plan/EMP for each sub-project.

Step 7: Environmental Monitoring Indicators

Indicators for a particular EMP provide the measurement, statistics or values that provide an approximate gauge or evidence of the effects of environmental management programs or of the state or condition of the environment that could result from sub-projects that will be implemented. The environmental indicators that will be defined and monitored by sub-project will relate such aspects as air quality, water quality, flora and fauna, human health, social and economic conditions.

5.1.2. ENVIRONMENTAL MANAGEMENT DURING IMPLEMENTATION

The Environmental Management Plan outlined on Table 10 consists of a set of measures to be undertaken during planning, design, procurement, construction and post-construction stages of the sub-project development activities to be financed in the MCCAP, to maximize positive environmental impacts and eliminate adverse, offset, or reduce negative impacts to acceptable levels. The EMP includes the actions needed to implement the related practices and measures.

In order to ensure the effective implementation of the EMPs, it will be necessary to identify and define the responsibilities and authority of the various organizations that will be involved in the project. The following entities will be involved in the implementation of the EMP:

- Ministry of Forests, Fisheries and Sustainable Development (MFFSD);
- Fisheries Department and PIAG;
- Protected Areas Conservation Trust;
- Department of the Environment (DOE);
- Institute of Archaeology (IOA);
- Lands and Surveys Department;
- Sub-project implementers (community groups).

The MFFSD (via the Fisheries Department) is the implementing entity for the MCCAP. Therefore, the responsibility for ensuring that mitigation measures specified in the EMPs and the contract documents are implemented will lie with them.

The responsibility for environmental management during project implementation will be of the Fisheries Department/PIAG through consultation with the relevant GOB agencies, including the

DOE. Specific responsibility for the environmental aspects and management of these areas along the project cycle will be overseen by the MCCAP Senior Technical Officer. The guidance from the EMF will be required over the project cycle (from planning to operation), and the pertinence and appropriateness of the same will be subject to ongoing review and improvement. This will require a delegated person (the Senior Technical Officer) to monitor the implementation of the sub-projects for the entire duration of their execution. Extensive travelling will thus be required between the targeted project areas. Sub-projects will be monitored in the frequency outlined in their respective EMP. The person will work under the Project Coordinator to be housed in the Fisheries Department office. It is recommended that the person hired in this position possess a minimum of a Bachelor's Degree in Environmental Science, Natural or Environmental Resource Management or related field, and s/he should have at least 5 years work experience in any of these identified fields, as well as a working understanding of the local environmental legislation and the World Bank safeguards. Taking into consideration the level of qualification and experience required, travelling and per diem, it is estimated that the implementation of the EMF will have a cost US$75,000 per year, which is reserved within the project budget. Any costs related with processing of necessary environmental clearances and good practices/mitigation measures will be included in the sub-project design as pertinent.

The DOE is responsible for administering the Environmental Protection Act and related regulations, including the EIA Regulations. These responsibilities include the continuous and long-term assessment of natural resources and pollution, pollution prevention and control by coordinating all activities relating to the discharge of wastes into the environment, monitoring environmental health, and examining and determining whether environmental impact assessment or LLES are required for development projects and to make suitable recommendations to mitigate against harmful effects of any proposed action on the environment. The DOE, in consultation with relevant permitting agencies, would screen projects referred to the DOE for determination as to whether an EIA or an LLES should be conducted.

The IOA is in charge of protecting and preserving known features of archaeological or cultural importance. If any such feature is discovered during the project works, the IOA would provide recommendations for the protection of any features, and decide on subsequent appropriate procedures (see Annex 5 – Chance Find Procedures).

The Lands and Surveys Department through its Physical Planning Section accepts and vets all applications for land subdivision/consolidation. Once applications are vetted, they are submitted to the Land Subdivision and Utilization Authority for recommendation.

The sub-project implementers (community groups) will be appointed by the MFFSD (Fisheries Department) and/or the PIAG and will be required to comply with the requirements of the LLES/EMP and the requirements of the sub-project agreements, which include specifications for the following:

- Potential impacts to biodiversity, both terrestrial and aquatic as a result of the development;
- Potential impacts to the hydrology and water quality of water resources;
- Potential impact arising from the production of solid and liquid waste and the management thereof;
- Potential impact from energy generation and the storage of fuel;

- Potential impacts associated with transportation;
- Potential impacts to human, socio-economic and culture; and
- Potential impact associated with earth movement activities, among other specifications.

Table 10: Environmental Management Plan

Environmental Aspect	Nature of Impact	Recommended Mitigation measures	Goals	Who Responsible	Timeframe and Monitoring Indicators
Construction of earthen ponds	• Wildlife disturbance • Siltation of waterways • Reduces wildlife habitat • Habitat degradation	• Minimize clearance of vegetation • Only use mechanical and manual methods to remove vegetation • Minimize earthworks • Site rehabilitation • Comply with the Forest Act	To reduce land loss	MFFSD, Fisheries Department, and sub-project implementers	
Construction of above ground ponds	• Wildlife disturbance • Reduces wildlife habitat • Removal of vegetation • Habitat degradation	• Minimize clearance of vegetation • Only use mechanical and manual methods to remove vegetation • Site rehabilitation • Comply with the Forest Act	To reduce land loss	MFFSD, Fisheries Department, and sub-project implementers	
Pollution (ponds drainage)	• Ponds discharge (effluents) introduces contaminants (very high nutrient levels) into the environment • Habitat degradation • Affects wildlife and human health	• Treat effluents before introducing to the environment • Comply with the Environmental Protection Act	To minimize pollution and ensure proper handling of effluents	Sub-project implementers	
Introduction of	• Degradation of ecosystem integrity • Affects wildlife health	• Build tilapia ponds away from flood-	To prevent	Sub-project	

exotic species (e.g., Red Hybrid Tilapia)		prone areas • Incorporate flood protection systems into the design and construction of the tilapia ponds	introduction of tilapia into the natural waterways	implementers	
Removal and alteration of vegetation	• Wildlife disturbance • Increases artificial edges that affect edge species • Reduction and alteration of wildlife habitats	• Avoid burning cut vegetation • Remove vegetative debris from work sites as soon as possible • Remove vegetation in areas only where it is absolutely necessary • Only use mechanical and manual methods to remove vegetation • Keep vegetative debris away from drainage systems • Site rehabilitation • Comply with the Forest Act	To protect vegetation	MFFSD, Fisheries Department, and sub-project implementers	
Pesticides use	• Pesticides can poison through the skin, the mouth and by inhaling it	• Please refer to Annex 4 • Comply with Pesticides Control Act	To ensure rational and efficient pesticides management (in case of the need to use pesticides)	Sub-project implementers	
Soil erosion	• Siltation of waterways • Loss of wildlife habitat	• Minimize removal of vegetation • Minimize earthworks and removal of soil • Monitor areas of exposed soil during periods of heavy rainfall	To prevent or minimize soil erosion and	MFFSD, Fisheries Department, and	

	• Land loss	• Clear vegetation in areas only where it is absolutely necessary • Clearly demarcate work areas • Site rehabilitation	protect topsoil	sub-project implementers	
Waste disposal	• Wildlife disturbance • Pollution of soil and water	• Minimize stockpile of construction waste • Place waste away from drainage systems • Remove waste from work sites as soon as possible	To ensure waste is managed properly	Sub-project implementers	

5.1.3. INTERNAL TOOL FORM FOR ENVIRONMENTAL MANAGEMENT

A series of environmental instruments have been designed for the internal use of MFFSD (Fisheries Department) as the entity responsible for environmental management, in order to systematize the activities that will be developed during the project cycle, to organize the processes, and to keep records of the process.

The instruments identified for the different stages of the project cycle are the following: a) Environmental Categorization Form (ECF); b) Environmental Follow-up Report (EFUR); and c) Environmental Final Report (EFR).

5.1.3.1. ENVIRONMENTAL CATEGORIZATION FORM (ECF)

The ECF is the first internal instrument of the MFFSD (Fisheries Department) that is used in the first stage of the project cycle, in order to classify potential environment risks in a rapid and easy form, and to identify the environmental studies needed in the next stage of project assessment. The format of this instrument is presented in Annex 7.

5.1.3.2. ENVIRONMENTAL FOLLOW-UP REPORT (EFUR)

The EFUR is an internal instrument that is used during the sub-projects execution phase for the purposes of follow up and monitoring the measures identified in the environmental management plans. The EFUR basically contains information about the periodic field visits, the persons who visited the sub-project, environmental aspects observed and recommendations for follow up. The format of this instrument appears in Annex 10.

5.1.3.3. ENVIRONMENTAL FINAL REPORT (EFR)

The EFR is the final internal instrument to be developed once a sub-project's execution has ended. This is done in order to verify the fulfillment of all the environmental measures agreed in the respective plans. The format of this instrument appears in Annex 11.

5.2. DIALOGUE AND DISCLOSURE MECHANISM

The dialogue and disclosure required before and during execution of any works is a function of the environmental categorization. These actions ensure that the people or communities in the direct and indirect areas of influence have knowledge about the benefits and potential negative impacts that will be present in a particular sub-project. The discussion that follows presents the requirements for Dialogue and Disclosure for each environmental categorization.

5.2.1. CONSULTATION/DIALOGUES REQUIRED AS A FUNCTION OF THE ENVIRONMENTAL CATEGORY

The project and sub-projects should contain an element of dialogue/consultation with local stakeholders, including the community, during the phase of evaluation, to inform them of the purposes of the (sub-)project and the potential environmental impacts (positive and negative). The quantity and depth of this type of consultation depends on the environmental

categorization of each sub-project. Minutes of consultations, and follow-up actions taken, will be incorporated into all EAs for sub-projects.

5.2.2. CATEGORY B SUB-PROJECTS: MODERATE LEVEL OF ENVIRONMENTAL RISK

For Category B sub-projects, it is required to carry out at least one consultation session with local actors, including the community. This dialogue should include the following aspects: a) purposes of the (sub-)project; b) results of the environmental categorization and evaluation of the sub-project; and c) presentation of the complementary studies required in case they apply.

5.2.3. CATEGORY C SUB-PROJECTS: LOW LEVEL OF ENVIRONMENTAL RISK

Although a dialogue process is not required for sub-projects under Category C, it will be required to maintain a good communication system to keep the community informed about the (sub-)project, and possibly involved in the same, as appropriate/pertinent on a case by case basis.

5.2.4. DISCLOSURE

All the (sub-)project(s) should include a strategy for public information disclosure, in order to keep the general public and/or the actors involved in the (sub-)project informed about its purpose and the potential environmental impacts. The disclosure of information will be done through the use of the local media and the internet to reach the local community. The information being disclosed should be in a language or languages that the targeted stakeholders understand.

In general, the information that would be published should contain: i) basic information on the (sub-)project; ii) environmental categorization; iii) terms of reference for the required environmental studies; iv) the summary and the results of the community consultations; v) the environmental studies developed; vi) in the cases that apply, the MCCAP Process Framework; vii) any another important studies that have been done on the (sub-)project; viii) the announcement of the contractors; and ix) the contracts with specific environmental commitments to be executed during construction.

In addition, the following information should also be made public in adequate local media: i) the place, date and participants in the project consultations, ii) the draft of the study of environmental impact, and iii) the draft of the plans mentioned to ensure that the participating local actors to the consultations have adequate information with sufficient time to be able to participate meaningfully in the consultations.

5.2.5. GRIEVANCE REDRESSAL MECHANISM

A Grievance Redressal Mechanism (GRM) is required by the World Bank's OP 4.12 in order to identify procedures to effectively address grievances arising from project implementation. Persons affected by the project must have an avenue where they can formally lodge their complaints and grievances and have them properly considered and addressed.

For the MCCAP, the GRM is being established at the field level where matters can be addressed immediately within the scope of the sub-projects' authority and activities. Given that the PIAG

will be under the MFSSD, it is expected that relevant units within the Ministry will provide support to the PIAG in the implementation of the GRM. The other level of the GRM is at the national level. This includes the judicial levels where the process is more formalized and complex and includes formal litigation. Also at the national level is the Office of the Ombudsman who is able to take up issues directly related to the project. The MCCAP Process Framework provides details on the GRM.

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ANNEX 1: MINUTES OF CONSULTATION SESSION

STAKEHOLDER CONSULTATION WORKSHOP REPORT
CZMAI TRAINING ROOM, BELIZE CITY
26th September, 2014

1. General Introduction:

The Government of Belize, with the assistance of the World Bank is implementing the project entitled "Marine Conservation and Climate Adaptation Project" (MCCAP) with funding from the Adaptation Fund. The project's primary objective is to implement priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System and its productive marine resources. Implementation of the MCCAP will be over a five (5) year period. The MCCAP has three main components. The project has already been approved and the safeguards instruments are necessary for the Government of Belize to proceed with negotiations with the World Bank.

The overall objective of the consultation workshop held is to finalize the project's environmental and social safeguards instruments with the main project stakeholders. The process is expected to document stakeholders' concerns and inputs, and the free, prior and informed consultation process resulting in the achievement of broad community support, inter alia, of the indigenous peoples' representative organizations. The feedback is to be used to revise the instruments.

2. Attendance:

Participants to the consultation meeting included representatives of fisher groups, Fisheries Department, Coastal Zone Management Authority & Institute, Marine Protected Area Co-Managers, Non-Government Organizations and indigenous peoples (Garinagu).

See end of report for full list of participants.

3. Proceedings:

a. Welcome Remarks and Introduction

The session started with participants being given an official welcome by Mrs. Beverly Wade, Fisheries Administrator. She thank the participants for making the effort to attend after which she gave a brief overview of the project, the social safeguards instruments and their importance and relevance to the MCCAP. She explained that sharing the safeguards instruments and obtaining community feedback is one of the last steps before the actual initiation of the project.

b. The MCCAP Project – Objectives, Scope and Activities

Fisheries Officer, Mr. Adriel Casteñeda gave a presentation on the description of the project highlight the goals, expected outcomes, objectives, components and activities. He started his presentation by provided the climate change context that is affecting the marine resources especially the reef. As climate change intensifies small developing countries will have to keep developing new adaptation strategies. The MCCAP project is one such adaptation measure focused on safeguarding Belize's marine resources that has been demonstrated to be important both economically and socially in addition to its environmental value. Mr. Casteñeda presented on all three main components of the project including the budget allocated to each component, as follows:

- **Component 1:** Improving the protection regime of marine and coastal ecosystems (**US$2 million**)
    - Output 1.1: Revisiting and refining of MPA boundaries
    - Output 1.2: Realignment of MPA zoning schemes (replenishment zones)
    - Output 1.3: Revision and implementation of management plans for three targeted MPAs
    - Output 1.4: Comprehensive monitoring and research program for three targeted MPAs
    - Output 1.5: Management effectiveness studies to help inform MPA management
    - Output 1.6: Implementation of an Integrated Coastal Zone Management (ICZM) Plan
    - Output 1.7: Capacity building to coordinate monitoring of the ICZM Plan's implementation (includes CACs)
    - Output 1.8: Enforcement of development guidelines endorsed in the national ICZM Plan
    - Output 1.9: Enhancement of the protection of mangroves
    - Output 1.10: Strengthening the legal framework for coastal zone management (revision of the CZM Act)
- **Component 2**: Support for viable and sustainable alternative livelihoods for **affected users of the reef** (**US$2.45 million**)
    - Output 2.1: Community-based Alternative Livelihoods Plans
    - Output 2.2: Development of Business Plans
    - Output 2.3: Capacity Building & Skills Training
    - Output 2.4: Financing & Small Grants Scheme
- **Component 3**: Raising awareness, building local capacity, and disseminating information (**US$560,000**)
    - Output 3.1: Climate change knowledge, attitude and behavioral practice (KAP) survey
    - Output 3.2: Behavior change communication campaign
    - Output 3.3: Dissemination of information about project investments
    - Output 3.4 & 3.5: Organizational strategic plans and clear organization structures for 4 fishermen's association & a national fishers alliance
    - Output 3.6: Comprehensive institutional assessments of the three BFCA members

c. World Bank Environmental and Social Safeguard Policies

After the presentation on the project description, a presentation was given by the consultants explaining the World Bank environmental and social safeguard policies related to Bank-funded projects. The presentation started by describing the overall objectives of the Bank safeguard policies, which are:

a) to assure that social and environmental aspects are evaluated and considered in the decision-making process;

b) to reduce and to handle the risks of a programme or project; and

c) to provide mechanisms for consultation and information disclosure regarding project activities to interested and affected parties.

Each of the relevant ESMF policies was described in detail. The purpose, requirements and application were all presented to the participants.

The purpose of the environmental assessment safeguards is to ensure that a project's potential environmental risks and impacts in its area of influence are evaluated. This is to ensure that impacts on the natural environment (air, water and land); human health and safety; physical cultural resources; and trans-boundary environment concerns are considered and addressed. It was explained that Component 2 of the MCCAP supports potential alternative livelihoods activities (for which the exact location and/or nature are not precisely known) including poly-culture of marine products such as seaweed farming combined with cultivation of other marine products (e.g., sea cucumber and crab) in an integrated cultivation system; and marine tourism-based activities such as tour guiding, whale shark tourism, diving, and sailing which could have potential environmental impacts. The application of OP 4.01 entailed the development of an Environmental Management Framework, which conforms to the applicable WB environmental safeguard policies and national regulations. It was further explained that OP 4.11 (Physical Cultural Resources) was triggered as a precautionary measure, given that the MCCAP could involve small structural works and since Belize has thousands of Mayan Antiquities buried under the forests. Chance finds might occur within the project's intervention areas. Further, potential tourism-related livelihood activities could involve a known cultural site. The objective of OP 4.11 is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances.

The purpose of the social safeguards it was shared is to ensure that the well-being of persons are considered and addressed in Bank funded projects and that it has a development and humanitarian approach. This is to ensure that Bank funded projects are indeed in line with its global poverty reduction mission. It was shared that the application of OP 4.10 Indigenous Peoples entailed the development of a social assessment and a culturally appropriate participation framework. Under OP 4.12 Involuntary Resettlement the relevant section of the policy (Section 3b) was identified and presented. Given the nature of the restrictions under Section 3b, it was explained to the participants that the relevant instrument is the Process Framework rather than an Involuntary Resettlement Framework. Lastly, it was shared that the approach and spirit of OP 4.10 is being extended to all communities given the multi-ethnic and culturally diverse nature of Belize. Social safeguard measures after all are beneficial to both indigenous and non-indigenous peoples alike. OP 4.12 covers both IPs and non-IPs.

d. The MCCAP Environmental Management Framework (EMF)

The key elements of the Environmental Management Framework were presented and explained to the participants. These elements include:

a. Environmental Characteristics of the Project Area
b. Policy, legal and administrative framework
c. Diagnosis of Impacts – Component 1 and Component 2
d. Environmental Assessment and Screening
e. MCCAP Project Cycle
f. Project Organization and Management

Each of the elements was described in detail as it related to the MCCAP. Some of the key aspects that were highlighted for the participants included the fact that the EMF provides guidance to the project executing agencies (i.e., PACT and MFFSD) for Environmental Assessment procedures consistent with both the World Bank's as well as Belize's procedures. It describes an environmental assessment (EA) process that should be followed in implementing the MCCAP. It was explained that the assessment and mitigation of potential impacts to physical cultural resources is done through the EA process as well, by including what are called Chance Find Procedures. The MCCAP is categorized as B and requires a partial environmental assessment. This means that during EMF implementation, the project executing agencies are required to consult with project-affected groups and local NGOs about the project's environmental aspects and are required to take their views into account. For meaningful consultations between the project executing agencies and project-affected groups and local NGOs, the project executing agencies are required to provide relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.

e. Involuntary Resettlement Policy – Process Framework

The key elements of the Process Framework were presented and explained to the participants. These elements include:

a. Consultation and Participation Process
b. Restoration and Mitigation Measures – Component 2.
c. Grievance Redress Mechanism
d. Institutional Arrangements
e. Monitoring

Each of the elements was described in detail as it related to the MCCAP. Some of the key aspects that were highlighted for the participants included the need to ensure that consultations occurred as part of the process of implementing any restrictions and that such consultation be based on the principles of free, prior and informed consultation. In terms of the restorative measure that will be put in place to address the effects that restrictions may cause, it was explained that this we embedded into the project as component 2 of the project. It was also emphasized that developing the criteria for determining project affected person (PAPs) would be through a collaborative process between the Fisheries Department, MPA co-managers and representation fisher organizations. The purpose and structure of the Grievance Redress Mechanism (GRM) was then shared with the participants. It was shared that a regional structure was considered in the project but in hindsight this may not be necessary as it was not included in the recent BCRIP project. Lastly, it was shared with the participants that the Project

Implementation Agency Group (PIAG) and the Project Steering Committee (PSC) would be responsible for the implementation of the safeguard measures.

In terms of OP 4.10, the project affected communities identified were shared with the participants including those considered indigenous. There are three such communities in the project area. The potential social impacts were then shared with the participants. There social impacts are grouped into 5 areas that cover multiple relevant social variables. The positive and negative aspects were discussed with the participants. It was emphasized that the social assessment was an anticipation of potential effects and not necessarily an attempt at predicting the future as that is impossible.

f. The Indigenous Peoples Planning Framework

Given that the approach and spirit of OP 4.10 was being extended to all affected social groups under the project, and that the restorative measure was embedded in the project as Component 2, it was explained that the culturally appropriate participation framework (Indigenous People's Planning Framework) is a reflection of the Process Framework. Nonetheless, the importance of free, prior and informed consultation and culturally appropriate consultation for all affected communities were re-emphasized.

4. Discussion/Feedback

a. MCCAP

Participants sought clarification if the consultation workshop was aimed at obtaining feedback and input in the MCCAP or the safeguards. It was clarified that the project was already developed and approved and that consultation was focused on sharing the environmental and social safeguard instruments. Input and feedback is to be provided for those.

One participant commented that it appears that efforts and initiatives to address climate change are aimed only at the micro-level and not much seems to be happening at the global level to curb the causes of climate change.

b. World Bank Safeguard Policies

The representative from the National Garifuna Council (NGC) stated that the focus was still on the micro-level (on the "small man") and not on the macro-level and the severe effects of climate change on societies. The response was that the MCCAP project focuses on, as the name indicates, marine conservation and adaptation to the impacts from climate change. A few participants asked about the meaning of the term "Physical Cultural Resources". The WB definition was shared with them, as stated on the OP 4.11 information sheet. The NGC representative stated that the Garifuna people have a Memorandum of Understanding with the Government of Belize for access to the territorial seas for intangible cultural purposes, and questioned whether OP 4.11 accounted for such situations. The response was that OP 4.11 focuses on tangible cultural resources. A few participants asked about accessibility to project information throughout project implementation. The response was that the EMF requires the project executing agencies to consult with project-affected groups and local NGOs about the project's environmental aspects and to take their views into account during the life of the project.

c. Environmental Assessment

Participants did not have many questions or comments related to the Environmental Management Framework. The few comments had to do with the MCCAP project cycle – for example, a

participant asked if fisher folks would receive help to prepare alternative livelihood project proposals. The response was that the MCCAP project would have resources allocated to support local people in the design of projects. Another participant noted that alternative livelihood projects would have a better chance at success if the Government of Belize would provide marketing support for such projects. The response was that the PMU would provide extension support throughout the project cycle including marketing guidance and capacity building, so that the projects could be sustained over the long term. Reference was made to the Economic Alternative and Fisheries Diversification (EAFD) Plan that was recently prepared with support from the Fisheries Department, The Nature Conservancy, and fisher leaders. This EAFD Plan provides a useful guide for possible alternative livelihood initiatives that the MCCAP project could support. It was also noted that, since the Department of the Environment (DOE) was not represented at the consultation meeting, the environmental safeguards consultant would need to ensure that the appropriate DOE officer(s) reviews the draft EMF and provides feedback for incorporation into the final report.

d. Social Safeguards

Participants especially the indigenous peoples' representative welcomed the new approach being brought out by the development and implementation of safeguards in development projects. One fisher group representative commented that it is a learning process after all and that as generations change better and improved approaches to working with local communities are being developed and implemented.

The IP representative asked if there is a specific definition to indigenous peoples in the World Bank policy. The consultants quoted the reference to IPs verbatim from OP 4.10 in response. A follow up question was asked if Mestizos could be considered indigenous and the response given was that based on the definition provided, this would not be so since as per the definition they would have to self-identify as such and this generally is not the case.

One participant asked whether the PSC would be responsible for overseeing the implementation of the social safeguards and whether they would be familiarized. The latter he said would need to occur so they can carry out the oversight responsibility being given to them. It was affirmed that that was the expectation in regards to oversight.

Participants concurred that the approach and spirit of OP 4.10 should indeed be extended to all project affected communities given the culturally diverse nature of Belizean society.

e. Summary of Issues/Concerns Raised

The following table presents a list of the issues/concerns raised by the participants at the workshop and the response provided.

Issues/Concerns Raised	Response Given
The focus is on the micro-level (on the "small man") and not on the macro-level and the severe effects of climate change on societies.	The MCCAP project focuses on marine conservation and adaptation to the impacts from climate change.
Question about the meaning of the term "Physical Cultural Resources".	The WB definition was shared with them, as stated on the OP 4.11 information sheet.
Question whether OP 4.11 accounts for intangible cultural resources.	OP 4.11 focuses on tangible cultural resources.
Accessibility to project information throughout	The EMF requires the project executing

project implementation.	agencies to consult with project-affected groups and local NGOs about the project's environmental aspects and to take their views into account during the life of the project.
Fisher folks would need help to design alternative livelihood project proposals.	The MCCAP project will allocate resources to support local people in the design of projects.
Alternative livelihood projects would benefit from marketing support.	The PMU would provide extension support throughout the project cycle including marketing guidance and capacity building.
The Department of the Environment (DOE) was not represented at the consultation meeting.	The appropriate DOE officer(s) will review the draft EMF and provide feedback for incorporation into the final report.

5. Next Steps/Closing Remarks

a. Extended Feedback Opportunity

Participants were informed that the draft instruments would be emailed out to them for further consideration, comment and feedback. They were given another week in which they can provide feedback. The consultants provided their email and phone contacts to facilitate any question or comments they may have.

b. Finalization of Instruments

The deadline for additional feedback and comments was scheduled for Monday, 13th October, 2014. After this date, the consultants were to incorporate feedback obtained from the workshop and any other feedback obtained thereafter to finalize the safeguard instruments. No additional comments were received, other than those listed and addressed in section 4.e. above, which have been incorporated into the final safeguard instruments.

c. Official Disclosure

Participants were informed that once the final safeguard instruments have been accepted and approved, they will be officially disclosed through various public media. This includes the PACT and Fisheries Department websites and the World Bank InfoShop. Participants were advised that they too could host the documents on their websites. Lastly, it was recommended by the consultants that fisher groups hold hard copies of the instruments at their local offices.

6. Attendance at Workshop

1. Ralna Lewis – Wildlife Conservation Society
2. Ellis Guzman – Seine Bight Village Council
3. Joel Verde – Sarteneja Alliance for Conservation and Development
4. Estela Requena – Turneffe Atoll Sustainability Association
5. Angela Usher – PACT
6. Nayari Diaz Perez – PACT
7. Eleodoro Martinez – Chunox Fishermen Association
8. Cesar Munoz – Sarteneja Fishermen Association
9. Vincent Gillett – Coastal Zone Management Authority & Institute
10. Sidney Fuller – Central Belize Fishermen Association
11. Allan Burn – Central Belize Fishermen Association
12. Franciso Zuniga – National Garifuna Council
13. Levan Aldana – Central Belize Fishermen Association

14. Andrew Castillo – Hopkins Fishermen Association
15. Osmany Salas – Consultant, EMF
16. Valentino Shal – Consultant, SMF
17. Adriel Casteneda – Fisheries Officer, Fisheries Department

7. Photos

Photo 1: Fisheries Administrator, Beverly Wade, addressing the participants of the environmental and social safeguards consultation session (September 26, 2014)

Photo 2: Participants of the environmental and social safeguards consultation session (September 26, 2014)

Photo 3: Participants of the environmental and social safeguards consultation session (September 26, 2014)

ANNEX 2: PROJECT ENVIRONMENTAL SCREENING FORM

ENVIRONMENTAL SCREENING			
Will the site or activity include/ involve any of the following potential issues and/or impacts:	**Activity and potential issues and/or impacts**	**Status**	**References to the applicable checklist of good practices/mitigation measures**
	1. Building rehabilitation • Site specific vehicular traffic • Increase in dust and noise from demolition and/or construction • Construction waste	[ ] Yes [ ] No	See Section **B** below
	2. New construction • Excavation impacts and soil erosion • Increased sediment loads in receiving waters • Site specific vehicular traffic • Increased dust and noise from demolition and/or construction • Construction waste	[ ] Yes [ ] No	See Section **B** below
	3. Individual wastewater treatment system • Effluent and/or discharges into receiving waters	[ ] Yes [ ] No	See Section **C** below
	4. Historic building(s) and districts • Risk of damage to known/unknown historical or archaeological sites	[ ] Yes [ ] No	See Section **D** below
	5. Acquisition of land[35] • Encroachment on private property • Relocation of project affected persons • Involuntary resettlement • Impacts on livelihood incomes	[ ] Yes [ ] No	See Section **E** below

[35] Land acquisitions include displacement of people, change of livelihood, encroachment on private property; land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

	6. Hazardous or toxic materials[36] • Removal and disposal of toxic and/or hazardous demolition and/or construction waste • Storage of machine oils and lubricants	[ ] Yes [ ] No	See Section **F** below
	7. Impacts on forests and/or protected areas • Encroachment on designated forests, buffer and/or protected areas • Disturbance of locally protected animal habitat	[ ] Yes [ ] No	See Section **G** below
	8. Traffic and Pedestrian Safety • Site specific vehicular traffic • Site is in a populated area	[ ] Yes [ ] No	See Section **I** below

ACTIVITY	**PARAMETER**	**GOOD PRACTICES MITIGATION MEASURES CHECKLIST**
A. General Conditions	Notification and Worker Safety	(a) The local construction and environment inspectorates and communities have been notified of upcoming activities. (b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works). (c) All legally required permits (to include not limited to land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation. (d) All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. (e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots). (f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.
B. General Rehabilitation and/or Construction Activities	Air Quality	(a) During interior demolition use debris-chutes above the first floor. (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust. (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site. (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust. (e) There will be no open burning of construction/waste material at the site. (f) There will be no excessive idling of construction vehicles at sites.
	Noise	(a) Construction noise will be limited to restricted times agreed to in the permit. (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible.
	Water Quality	(a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and/or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.

[36] Toxic/hazardous material includes but is not limited to asbestos, toxic paints, removal of lead paint, etc.

	Waste management	(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (c) Construction waste will be collected and disposed properly by licensed collectors. (d) The records of waste disposal will be maintained as proof for proper management as designed. (e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).
C. Individual wastewater treatment system	Water Quality	(a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities. (b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment. (c) Monitoring of new wastewater systems (before/after) will be carried out.
D. Historic building(s)	Cultural Heritage	(a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation. (b) Ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds.
E. Acquisition of land	Land Acquisition Plan/Framework	(a) If expropriation of land was not expected and is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the bank task Team Leader is consulted. (b) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented.
F. Toxic Materials	Asbestos management	(a) If asbestos is located on the project site, mark clearly as hazardous material. (b) When possible the asbestos will be appropriately contained and sealed to minimize exposure. (c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust. (d) Asbestos will be handled and disposed by skilled & experienced professionals. (e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. (f) The removed asbestos will not be reused.
	Toxic/hazardous waste management	(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information. (b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching. (c) The wastes are transported by specially licensed carriers and disposed in a licensed facility.

		(d) Paints with toxic ingredients or solvents or lead-based paints will not be used.
G. Affects forests and/or protected areas	Protection	(a) All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. (b) For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees. (c) Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences. (d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.
H. Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	(a) In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards. ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement. ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.

MONITORING PLAN							
Phase	**What (is the parameter to be monitored?)**	**Where (is the parameter to be monitored?)**	**How (is the parameter to be monitored?)**	**When (Define the frequency / or continuous?)**	**Why (is the parameter being monitored?)**	**Cost (if not included in project budget)**	**Who (is responsible for monitoring?)**
During activity preparation							
During activity implementation							
During activity supervision							

ANNEX 3: GENERAL PRINCIPLES OF ENVIRONMENTAL IMPACT ASSESSMENT IN BELIZE

A. Approach to EIA

An environmental impact assessment (EIA) is recognized as a multidisciplinary activity that should address not only the impacts a project may have on the biophysical environment but also on the socio-cultural environment. As such, an EIA requires the expertise of people knowledgeable in several areas including the biological sciences, flora, fauna, and ecological studies; physical sciences, such as geology and hydrology; engineering; and the social sciences. In order to bring these areas of expertise together, an EIA is normally conducted by a team of "experts" under the direction of a team leader ultimately responsible for preparing the final EIA report.

A crucial component of the EIA process is the participation of the public, particularly those who may be directly affected by the project. The Environmental Protection Act stipulates this requirement and the EIA Regulations make procedural provisions for the public to participate in the EIA process by making available to interested persons information concerning the proposed project. The Regulations also specify criteria to determine whether an undertaking requires a public hearing.

Public consultation is necessary to open the flow of environmental information concerning the proposed project, clarify misconceptions, and enhance social acceptability. Thus, it is recommended that affected groups, NGOs, and GOB agencies be involved in the scoping of the project for which an EIA has been deemed necessary, and consulted on the draft EIA report.

B. Steps in the EIA Process

There are eight major steps in the EIA process in addition to reporting and reviewing the completed EIA. These are: project definition, screening, scoping, description of the biophysical and socio-cultural environment, determination of impacts, considerations of alternatives, mitigation plans, and monitoring plans. These steps are described below, and are also addressed in the EIA Regulations and the Procedures for the Preparation of an EIA (DOE, 2011).

1. Project Description

Also called project definition, this is a critical first step in the EIA process. It describes in detail the proposed project: the location, layout and infrastructure, construction activities, operation and maintenance activities, and life span. Every other step in the EIA process is dependent on the full understanding of the proposed project. Preparation of the project description is basically the responsibility of the project proponent.

2. Screening

Screening is the procedure of determining whether an EIA is required for the proposed project. The EIA Regulations 1995 defines categories of projects under three schedules: Schedule I Projects are those for which EIAs are absolutely required. Schedule II projects are those that

should be given consideration and may require some form of evaluation; and Schedule III refer to those projects not requiring EIA.

In Belize, screening of projects requiring EIA is the prerogative of the DOE along with relevant permitting agencies. The responsibility of permitting resource use, such as logging, fishing or aquaculture, mining, etc., falls within the mandates of three different permitting agencies: Forest Department, Fisheries Department, and Geology and Petroleum Department, respectively. The DOE has no role in permitting resource use but has jurisdiction over the environmental soundness of the projects and activities utilizing Belize's natural resources. Consequently, screening of projects, particularly of schedule II Projects, require some level of cooperation between the DOE and the permitting agency.

Procedurally, permitting agencies are required to screen all projects within the framework of the EPA and the EIA Regulations. An environmental screening form is normally used to facilitate the process. Projects outlined in Schedule I of the EIA Regulations should automatically be referred to the DOE and the NEAC; for those that fall within Schedule II the permitting agency should determine whether an EIA is required. When in doubt, the assistance of DOE should be sought (DOE, 1994).

3. Scoping (Impact Identification)

For those projects requiring an EIA, the impacts of concern and those that should be evaluated are identified, and a Terms of Reference for conducting the assessment is drafted. This activity, called scoping, should involve consultation with GOB agencies, NGOs, affected community groups and the general public to identify key issues for evaluation.

Scoping usually consist of two parts: First, an exhaustive list of all impacts, severe as well as trivial, is drawn up. Then this list is carefully examined, and a manageable number of important impacts are selected for study. The rest are discarded.

In order to determine which impacts should be studied in detail, four criteria should be applied: magnitude, extent, significance, and special sensitivity. Magnitude refers to the quantum of change that will be experienced. A change of great magnitude would be, for example, the doubling of a town's population. In other words, the measured level of the environmental parameter will be twice what it was before.

The extent of an impact refers to the area which will be affected. The pollution of an entire estuary would be considered extensive, whereas the pollution of a localized area of the bay would not be so rated.

The significance of an impact looks beyond the magnitude of the effects. Consider an aquatic species which requires a minimum of 10 parts per million (ppm) of dissolved oxygen in the water to survive. If that species is endangered, or if it has economic or recreational value, then a change from 12 ppm to 9 ppm of oxygen, though not great in magnitude, is certainly significant. The criterion of special sensitivity is region and country specific and basically asks whether any impact of a proposed action will affect an area of special sensitivity.

4. Description of the Environment

This is a critical step because it defines the environmental parameters within which the proposed project is to be conducted, and is a prerequisite for the determination of impacts. This description should be of the study area, which is a defined area within which all effects, impacts, features, and potential compensation efforts would occur from a proposed action and its alternatives. This description also provides baseline data with which environmental impacts can be predicted, and against which the predicted impacts of the proposed action can be compared.

The approach normally adopted in this aspect of the EIA is the subdivision of the environmental setting into logical and hierarchical set of categories. The major categories would likely include the following: Geology, Topography, Soils, Hydrology, Terrestrial Communities, Aquatic Communities, Environmentally Sensitive Areas, Air Quality, Land Use, Demography, Sound Levels, Socioeconomic, Infrastructural Services, Transportation, Cultural Resources, and Project Economics. The level of detail contained in the description of the environment will vary according to the nature of the proposed project and the EIA terms of reference.

5. Determination of Impact

Although difficult, the EIA should attempt to predict, quantitatively, the impacts on the various components of the environment and indicate where irreversible loss will occur. Where impacts cannot be quantified, they should be treated in a qualitative form.

For the biological environment, it is important to forecast impacts that may cause a change of state. In terms of hydrology, water quality and quantity should be considered. For air quality, air models can be used to forecast changes in air quality. It is also crucial to determine how the proposed action will impact on costs to the community and the cultural environment. The resources required for the quantification of impacts are persons competent to do the required calculations or qualitative assessments.

6. Mitigation Measures

Mitigation is the means by which adverse impacts of a project is prevented or reduced; it basically reflects the limits of change that will be accepted those involved (proponents and stakeholders) upon project approval. Mitigate measures are normally included as conditions for implementation.

Such measures may be engineering works (e.g. dust collectors, sludge pods, noise mufflers, etc.) or management practices (e.g. crop rotation, phased plant shut-downs, etc.). All mitigation measures have associated costs.

In some respects, mitigation planning is a part of impact evaluation. When applicable mitigate measure have been identified, it becomes necessary to compute their cost, and to re-quantify the level of impact, acknowledging the beneficial effect of the mitigate measure. Depending on circumstances, mitigate measures may give rise to two project alternatives where only one existed before.

7. Alternatives

A central theme of an EIA is the consideration of practical alternatives to the proposed project including the no-action alternative. This is to ascertain the benefits of the proposed project and insure thorough consideration of mitigation measures that should be employed. It is at this point that the technical information gained in previous steps will be pulled together. It is also at this point that environmental losses and gains will be combined with the economic costs and benefits to produce a full picture for each project alternative. The intended output is a series of recommendations from which the decision-maker will choose a course of action.

In order to proceed to compare alternatives, two pieces of information are required. These are: a summary of positive and negative environmental impacts; and a summary of economic costs and benefits. The former will have to be generated as part of the preceding steps in the EIA. The latter may be developed as part of the EIA, or from a parallel economic analysis.

8. Monitoring and Evaluation

As a means to ensure that mitigation measures are adhered to, a monitoring plan is prepared and included in the final EIA report. This plan identifies pertinent indicators of environmental health, and ecological balance and outlines a schedule for periodic checks of these indicators. Results of monitoring can allow for necessary adjustments for successful project implementation.

9. Documentation and Reporting

The tasks of project description, description of the environment, determination of impacts, analysis of alternatives, definition of mitigation and a monitoring plan are all included as components of the EIA report. It is the responsibility of the designated EIA Team Leader to pull together the important elements of the various steps in the process into one coherent document - The EIA Report. This report is then to be submitted to DOE for review by the NEAC and for possible public hearings.

The EIA report should follow the format outlined in the EIA Regulations and should be submitted in multiple copies for all members of the NEAC. The report should also be in language for laypersons, not scientific language, as the EIA report is public information. Furthermore, the report should be concise and unambiguous; recommendations needs to be clearly stated, and reasons for those recommendations presented in summary form.

C. The Review Process and the Role of the NEAC

The EIA Regulations stipulate that there shall be an Appraisal Committee whose function shall be to review all EIAs, advise DOE of the adequacy or otherwise of an EIA, and advise DOE where a public hearing is desirable and necessary. The Regulations also define the composition of the NEAC as follows: Chief Environmental Officer (CEO), Commissioner of Lands, Chief Forest Officer, Fisheries Administrator, Chief Hydrologist, Archaeological Commissioner, Director of Geology and Petroleum, Chief Meteorologist, and an appropriate NGO.

Just as the preparation of an EIA is a multidisciplinary activity, the revision of the reports needs to be conducted by a multidisciplinary team. The DOE serves as the secretariat for the NEAC with the CEO, as the chair, responsible for collating the views of the NEAC Members on the

soundness of environmental management practices reflected in the EIA. The role of each NEAC Member is therefore critical for efficient review of EIA reports.

It should be noted that in addition to being members of the NEAC, many of these member agencies are permitting agencies responsible for authorizing resource use. Hence, the NEAC revision process provides a forum for validation of development projects.

ANNEX 4: PESTICIDES CONTROL BOARD GUIDELINES FOR RATIONAL AND EFFICIENT PESTICIDES MANAGEMENT

Pesticides can poison through the skin, the mouth and by inhaling it. Thus, care for the following:

- Avoid unlabeled or poorly packaged pesticides
- Transport pesticides in a secure container
- Separate pesticides from food, people and animals
- Store pesticides in a secure place outside the home
- Always read the label
- Always use protective gear
- Always ensure that you use the correct dosage
- Observe the pre-harvest interval
- Do not spray when it is windy or likely to rain
- It is safest to spray in the morning or evening
- Keep children and animals away from the spray site
- Have water, soap and a first aid kit readily available at the spray site
- Collect water with a clean bucket
- Pour clean water to the half tank mark through the strainer
- Handle powder formulations with the wind to you back
- Measure the dose carefully.
- Mix powder formulations with water before adding to the tank
- Rinse your gloves immediately after handling concentrated pesticides
- After measuring rinse the measure and pour the rinse water in the tank
- Rinse empty pesticide containers three times and pour the rinse water in the tank
- Shake the tank well and then fill to the full mark
- Clean the outside of the spray can
- Rinse your gloves again before taking them off
- Work with the wind to your back or sides
- Never spray with a leaky pump
- Clear blocked spray tips with a piece of straw
- After spraying wash yourself well before eating, drinking or smoking
- Spray leftover spray mix and rinse water along crop borders
- At the end of the day clean your pump and do all necessary repairs
- Never rinse your spray equipment in or near a waterway
- Wash work clothes separately. Except for rubber equipment, hang to dry in the sun
- Never store food or water in empty pesticide containers
- Render empty containers unusable before destroying them
- At job's end take a bath and put on clean clothes and footwear

What to do if an accident occurs

- If pesticide should splash on your skin wash it off immediately.
- Wash pesticides from the eyes with clean water for 15 minutes. See a doctor.
- Stop work immediately if you suddenly become ill while working with pesticides.
- See a doctor and take the label of the pesticide with you.

ANNEX 5: CHANCE FIND PROCEDURES

Contracts for civil works involving excavations should normally incorporate procedures for dealing with situations in which buried Physical Cultural Resources (PCR) are unexpectedly encountered. The final form of these procedures will depend upon the local regulatory environment, including any "chance find" procedures already incorporated in legislation dealing with antiquities or archaeology.

Note: The case for which the general guidance below is provided applies where there will be an archaeologist on call. There are no PCR-rich areas such as a UNESCO World Heritage site within the MCCAP subproject areas, so it would not be necessary for an archaeologist to be on site to monitor the excavations and make decisions on-site. In the eventuality that it is deemed advisable to have an archaeologist on site, a modified version of these procedures will be agreed with the National Institute for Culture and History (NICH) and its Institute of Archaeology.

The following *"chance find"* procedures are to be included in all civil works contracts:

If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- 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 NICH and its Institute of Archaeology take over;
- Notify the supervisory Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Institute of Archaeology immediately (within 24 hours or less).

The Institute of Archaeology would then be 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 the archaeologists of the Institute of Archaeology. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, namely the aesthetic, historic, scientific or research, social and economic values.

Decisions on how to handle the finding shall be taken by the responsible authorities and the Institute of Archaeology. This could include changes in the layout (such as when finding irremovable remains of cultural or archeological importance) conservation, preservation, restoration and salvage.

Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities.

Construction work may resume only after permission is given from the Institute of Archaeology concerning safeguard of the heritage.

ANNEX 6: POTENTIAL ALTERNATIVE LIVELIHOOD ACTIVITIES

This annex presents some of the potential alternative livelihoods that have been tested in Belize and elsewhere.

Local fishers have piloted in developing seaweed (*Graciliaria* spp.) cultivation and processing. The coastal fishing communities in Placencia, Punta Gorda and Sarteneja have some basic building facilities to house seaweed storage and processing. Large scale production could be done in the shallow coastal areas (reef lagoon) in northern Belize, which provides adequate environmental and marine conditions for extensive farming systems. These areas near the coast are not currently used for tourism activity and would not interfere with shipping lanes. Also, seaweed faming will utilize CO_2 from the sea and help to reduce acidification, which causes bleaching of corals. It is also environmentally friendly because no chemicals would be introduced into the marine environment. In addition, it is not labor intensive and requires little supervision until harvesting time.

Backyard farming of Red hybrid tilapia (*Oreochromis spp*.) and Blue eye catfish (*Ictalurus furcatus*) for household consumption and export market. The tilapia is not native to Belize but is found throughout the country and the catfish is endemic species found in the rivers and lagoons. This activity could help decrease the vulnerability of small-scale fishers by providing additional income to fishers and their families.

Some agricultural activity such as vegetable growing in family plots and strengthening of pig rearing (already being done by some fishermen in northern Belize) as an alternative income generating activity have been developed in small scale in different locations.

Marine tourism-based activities such as tour-guide training, whale shark tourism, dive master, sailing, have been considered to have a great potential for income generation. These would be selectively supported by the Project based on their economic viability and sustainability.

Why seaweed? Seaweed is a fairly versatile product that has been traditionally used in the production of beverages in Belize and has become quite popular over the last decade. The proposed seaweed production is intended to cover large coastal areas involving a significant number (at least 100) of fishermen. Typical seaweeds harvested on the Belizean coast are *Eucheuma isiforme* and *Gracilaria spp*, which offer numerous commercial uses including local consumption as food and drink, production of *carrageenan* for food ingredients, dietary supplement, fertilizer, bioplastics, dyes and colorants, pharmaceuticals, and potentially biofuel. With the rise in the tourism industry, the demand for seaweed for therapeutic purposes, as part of spa treatment regimens, has boosted its use significantly. There are some resorts that import their seaweed since the local supply is largely inconsistent. It is this void that the seaweed production through this Project seeks to fill. Internationally, there are several industrial uses for seaweed. It is used in the manufacture of fertilizers, soil conditioners, animal feed and fish feed. It is also used as biomass for fuel, in integrated aquaculture and wastewater treatment. So there is a market locally and internationally. During the preparation of this Project proposal, consultations undertaken with local communities, Government of Belize, NGOs, and marine experts, have confirmed that seaweed cultivation is a viable and high priority alternative livelihood option that needs support.

Seaweed farming has generally been a lucrative form of livelihood for coastal communities in other countries but is yet to be in Belize. For example, it is currently the largest and most

productive form of livelihood for the coastal population of the Philippines. Information from the Seaweed Industry Association of the Philippines for 2004 indicated that more than 116,000 families consisting of more than one million individuals were farming more than 58,000 hectares of seaweed. In 2000-2004, the average annual production of dried seaweed in the Philippines was nearly 125,000 tons, with a value averaging about US$ 139 million. World demand for seaweed and seaweed products is projected to remain at ten (10 %) percent annual growth rate. This implies that if implemented at scale and successfully in Belize, the targeted communities and the country as a whole stand to benefit significantly in terms of job creation (e.g., seaweed cultivation and harvesting for fishermen; seaweed drying and processing for women in the communities) and economic empowerment. Furthermore, seaweed systems are known to reduce carbon dioxide (CO_2) in the atmosphere by fixing CO_2 for their growth. Some seaweed can absorb five times more CO_2 than plants on land. Seaweeds also help to reduce water pollution from farm waste and agriculture run-off and wastewater by absorbing nutrients. Such pollution control and alternative livelihoods are critical in improving the overall health of coral reefs, in turn, increasing resilience of coral reefs to the impacts of climate change (increased sea surface temperature, intensification of hurricanes, and ocean acidification).

Other potential marine-based activities for Project support include:

Harvesting crab claws: Wild harvest of Blue land crab (*Cardiso maguanhumi*) which is distributed in throughout Belize would be considered. There is a market in the US and high demand for whole crabs in Yucatan, Mexico for use as bait in the octopus fishery. This activity would provide immediate economic benefits to the local fishermen and other Belizeans. The initial investment is simple; participants would be provided with 40-50 traps each. The harvesting of crabs would begin one week after the traps have been deployed on land areas. The natural capacity of the crab population to quickly rebound makes this livelihood environmentally friendly, sustainable, and economically viable within a short period of time (2-3 weeks).

Crab farming: Channel Clinging Crab known as Caribbean King Crab (*Mithrax spinosissimus*) or Emerald crab (*Mithrax sculptus*) have a potential for commercialization based on the knowledge and experiences in the Caribbean (Grenada). Caribbean King Crab is sold to local restaurant and Emerald crab for aquarium owners. The farming scheme consists of (i) one onshore hatchery-nursery allowing a control of the rearing parameters, (ii) various large grow-out facilities such as floating cages or pens. During that phase the animals are only fed with algae which would be sourced from the seaweed farms.

Tourism: It is also envisaged that marine tourism-based activities such as tour-guide training, whale shark tourism, dive master, sailing, would be selectively supported by the Project based on their economic viability and sustainability. In 2004 the GEF Small Grants Programme funded the Belize Tourism Industry Association to implement a project promoting marine tour guide training in communities that impact the Belize Barrier Reef Reserve System – World Heritage Site. The main objective of the project was to provide fisher folks and tour guides with the knowledge, skills and attitudes that would assist them to become efficient tour guides. This goal to provide improved training for existing tour guides, as well as provide guide training to fishers who have traditionally used the Belize Barrier Reef Reserve System (BBRRS) to earn their income. This project achieved its main objectives of providing users of the marine resources of the BBRRS-WHS with the basic requirements necessary to obtain a tour guide license, and developing and executing a specialized Advance Marine Tour Guide Training Program for tour guides of coastal communities that utilize the BBRRS-WHS, through the completion of its targeted activities.

ANNEX 7: ENVIRONMENTAL CATEGORIZATION FORM

1. GENERAL INFORMATION	
Project name:	
Location:	**District:**
Evaluator name:	**Date of field visit:**

2. THE SUB-PROJECT	
General purpose of the sub-project:	**Specific purpose of the sub-project:**

3. TYPE OF PROJECT	
Type of sub-project: •	Categorization applying the Categorization Table presented in Section 5: ☐ Category "A" ☐ Category "B" ☐ Category "C"

4. SITE SENSITIVITY CLASIFICATION

Sensitivity	Description	Checkmark (✓)
HIGH	Situated within a National Park or Protected Area – MFFSD	
	High Index of biodiversity	
	High degree of threat – CITES	
	High degree of endemism – CITES	
	High danger of environmental degradation (deforestation, hunting, others)	
	Vulnerable Zones to natural disasters (floods, earthquake, other)	
	Sensitive or critical ecosystems (wetlands, mangrove swamps, primary or secondary forests, other) – MFFSD	
	Zones recognized as indigenous groups area or vulnerable populations in the direct area of influence of the sub-project	
	Presence of places of highly cultural and historical interest in the direct influence area	
MODERATE	Proximity to Protected Areas – MFFSD	
	Moderate index for biodiversity	
	Moderate degree of threat – CITES	
	Moderate degree of endemism – CITES	
	Moderate danger of environmental degradation (deforestation, hunting, others)	
	Wavy topography (15 to 35% of slope) related to improvement or new construction of roads	

	Moderate risk to natural disasters (floods, earthquake, others)	
	Zones recognized as indigenous groups area or vulnerable populations in the indirect area of the sub-project influence	
	Presence of places of highly cultural and historical interest in the indirect influence area	
LOW	Intervened areas out of national parks or their buffer areas	
	Low biodiversity degree	
	Low degree of threat– CITES	
	Low degree of endemism – CITES	
	Low danger of environmental degradation (deforestation, hunting, others)	
	Vegetation intervened	
	Zones with low risk to natural disasters (floods, earthquake, others)	
	Absence of sites with cultural and historic value	
	Absence of indigenous groups	
Sensitivity: _____		

5. ENVIRONMENTAL CATEGORIZATION

Category B: Those projects with moderate environmental risk, because the influence area presents moderate level of sensibility, nevertheless the civil works are not of big magnitude. The environmental and social impacts that can appear in this type of projects are easily identifiable and can be mitigated.

Matrix No. 2
Environmental Categorization under the Project

Project Grade	Site Sensitivity		
	High	Moderate	Low
1	A	A	A
2	A	B	B
3	B	B	C

6. ENVIRONMENTAL STUDIES REQUIRED BY BELIZE LAW

Schedule II:	Environmental Screening (ES): potentially an EIA or a LLES

7. ENVIRONMENTAL AND SOCIAL SAFEGUARDS REQUIREMENTS

- ☐ Resettlement Action Plan (Resettlement Process Framework)
- ☐ Integrated Pest Managment Plan
- ☐ Physical Cultural Resources Management Plan
- ☐ Others: _____

8. PROJECT COORDINATES AND MAP

9. OBSERVATIONS

ANNEX 8: SAMPLE LLES FORMAT

This Terms of Reference (TOR) has been prepared following the scoping for the most critical issues that will need to be addressed by the proposed development of [COMPANY/AGENCY], located within the [LOCATION].

In the preparation of the Limited Level Environmental Study (LLES), the LLES preparers will need to focus on addressing the main areas of concern, such as:

- Potential impacts to biodiversity, both terrestrial and aquatic as a result of the development,
- Potential impacts to the hydrology and water quality of the water resources including [RELEVANT WATERWAYS],
- Provision of potable water supply and impacts associated therewith,
- Potential impact arising from the production of solid and liquid waste and the management thereof,
- Potential impact from energy generation and the storage of fuel,
- potential impacts associated with transportation,
- Potential impacts to human, socio-economic and culture,
- Potential impact associated with earth movement activities.

Scoping of these issues speeds up the LLES process, cuts down its cost, improves the quality of the development and ensures that environmental concerns are clearly addressed.

This Terms of Reference (TOR) is divided into three (3) sections:

A. PROJECT DESCRIPTION AND PHYSICAL ENVIRONMENT

This section of the document deals primarily with information pertaining to the background of the project and the physical environment within which it is proposed. The LLES will need to address:

1. THE PROJECT DESCRIPTION AND LAYOUT PLAN

Maps at appropriate scales must be provided and with proper labels and legends to illustrate the general settings of project related development sites as well as surrounding areas likely to be environmentally affected. These maps shall include property boundary, topographic contours, as well as location of major surface waters, roads, parks or reserves, political boundaries, protected areas and existing adjacent land uses (tourism, agricultural, industrial). Additionally the following should be provided:

1.1 Delineate the sub-project boundary outlining its geographic relationship with any terrestrial protected area and give the exact location of the project including GPS coordinates. Also provide a copy of the land tenure documents which shows ownership of the project area.

1.2 Provide a scaled layout plan for the overall development, including siting of all facilities such as buildings, water supply facilities, water treatment facilities, storage

facilities, drainage facilities, power generation facilities, fuel storage facilities, solid and liquid waste disposal facilities, recreational paths/trails, etc; and acreage intended for said activities;

1.3 Describe a detailed description of the facilities provided in the plans above (1.2)

1.4 Provide specifications and detailed designs for the following:
   a. Collection and disposal systems for solid waste;
   b. Sewage collection, disposal, and treatment systems;
   c. Water source, treatment, and distribution systems;

1.5 Provide an outline of the overall management structure anticipated for the proposed development.

1.6 Describe the timeline for the implementation of the project.

1.7 Provide detailed and adequately labeled maps to illustrate the general settings of project related development sites, as well as surrounding areas likely to be environmentally affected. These maps shall include topographic contours, where available, appropriate buffer zones along all permanent water bodies on site, the location of major surface waters, roads, parks or reserves, political boundaries and existing land use and a map of the project area.

2. THE PHYSICAL ENVIRONMENT

Provide details of the basic physical environment of the project site and zone of influence. This should include:

2.1 Location of the project with respect to other land/tourism/sensitive areas including protected areas;

2.2 Topography; Include the flood hazard and drainage patterns around the project site;

2.3 Current land use of project site and adjacent properties. Provide land use history of the project site;

2.4 Any known archaeological sites;

2.5 Physical description of surrounding surface water bodies, including the [WATERWAYS] and others;

2.6 Climate, and meteorology: Include the rainfall average per year of the area of interest, prevailing wind patterns and susceptibility to natural disasters (i.e. hurricanes);

2.7 Geology: Give a detailed description of the area of the characteristics of landforms and geological structures;

2.8 Soils: Soil profile, fertility, permeability, and the potential for erosion of the soils on the project site.

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

This section will identify all pertinent legislation relative to the project and its proposed activities, which must be addressed to be environmentally acceptable. This will include but should not be limited to, for example, effluent discharge limitations, permissible noise levels, effluent receiving water quality standards and occupational health and safety requirements.

3.1 Describe the pertinent regulations, standards, and policies, at the local and national levels, governing environmental quality, health and safety, and protection of sensitive areas. These could include cultural resources, protection of endangered or threatened species, land development, water resources, infrastructure development, land use control, and tourism that may have an impact on the proposed development.

B. ENVIRONMENTAL ISSUES

This section of the document primarily targets the environmental issues of critical concerns based on information provided in section A.

The following are the critical issues a high quality LLES will need to address for the development proposed by **[COMPANY OR AGENCY]**.

The LLES will need to address:

4. FLORA AND FAUNA

For the project site and the zone of influence:

4.1 Collect base line data (field study) on the terrestrial and aquatic fauna and flora; rare or endangered species or commercially valuable species within or in areas adjacent to the project site; sensitive habitats within or adjacent to project site. This should provide a baseline from which to detect any changes in the abundance and vigor of species due to this development. Provide a general description of the methodology used to collect baseline data, this is, to include the date, time, area surveyed, and methodology used;

4.2 Estimate the acreage and type of vegetation within the development site designated and percent to be removed;

4.3 Identify measures to be implemented to mitigate for the loss of vegetation that might arise from the development;

4.4 Identify any specific measures for their protection of species of conservation significance (threatened and endangered species), which may include the establishment of reserves within the project site;

4.5. Identify any impacts on the nearby [PROTECTED AREAS AND WATERWAYS/WATER BODIES].

5. WATER

5.1 Determine the projected water needs for the entire development (including drinking water supplies, domestic/household supply, irrigation of landscape, etc.).

5.2 Assess all sources of water supply, quality and quantity, paying special attention to determining the safe maximum yield it can provide.

5.3 Establish a baseline on the water resources of the project area. This base-line should include water quality assessment of any proposed well water and surface waters

within and adjacent to the project site. The base line should include, at a minimum, the following parameters[37]:

i.	Temperature;	viii.	pH;
ii.	Conductivity	ix.	Sulphates;
iii.	Total suspended solids;	x.	Hardness;
iv.	Fecal coliform;	xi.	Total Phosphate;
v.	Total Nitrate (as $N0_3$- N);	xii.	Biological Oxygen Demand
vi.	Alkalinity	xiii.	Chemical Oxygen Demand
vii.	Dissolved oxygen	xiv.	Chlorine

5.4 Identify the preferred option for water supply needs, based on environmental grounds. Specify any residual impacts of meeting water needs through this option, their significance, and any mitigatory measures to be undertaken. Provide detailed information for any water treatment processes that may be employed to obtain the required volumes of potable water for the entire development.

6. LIQUID WASTE MANAGEMENT

6.1 Determine the nature, composition, source(s) and volumes of liquid waste, including sewage waste, grey water, and pool water to be generated by the entire project.

6.2 Evaluate a minimum of two (2) options for the collection, treatment, recycling of the liquid wastes (if appropriate), and disposal of these effluents, identifying any chemicals planned for use in the treatment or management of these wastes.

6.3 Identify the preferred option(s) for liquid waste management, based on environmental grounds, including necessary infrastructure, designs, locations and land requirements. Specify any residual impacts of liquid waste management, their significance and any mitigation measures to be undertaken.

7. SOLID WASTE MANAGEMENT

7.1 Determine the nature and volumes of solid wastes to be produced by the entire development both during the construction and operation phase. Characterize and quantify all waste to be generated including waste oil, tires, plastics, metals, putrescent wastes, batteries/hazardous materials and construction wastes, at minimum. If composting of organic wastes is to be conducted, provide specifications on the location of the site and procedures to be followed for the composting.

7.2 Evaluate the various options which could be used to collect, treat, recycle and/or dispose of these wastes and determine the various impacts each option would have on the environment.

7.3 Select the preferred option(s) for the disposal of these materials. This should be based on environmental and public health grounds, and should specify residual impacts and their significance.

[37] Assays i, & vii, to be conducted in the field and the remainder to be conducted preferably by an independent water quality consultant. The water quality analysis should contain the official stamp of the laboratory (if any) and the signature of the lab technician.

8. GEOLOGY AND EXTRACTION OF MATERIALS

8.1 Determine the type and volume of construction materials required for the entire development, including material for road construction, infrastructure needs, etc.

8.2 Evaluate options for meeting these needs, reviewing their sources, volume, extraction methods and transportation and identifying:

- Direct and indirect biological impacts;
- Direct and indirect physical impacts;
- Impact on water resources;

8.3 Identify the preferred option for the extraction methods, source and Transportation of materials, specifying the necessary mitigation measures, their residual impacts and significance.

9. TRANSPORTATION AND RELATED INFRASTRUCTURE

9.1 Assess the type and volume of vehicular traffic expected during both construction and operational phases and indicate their impacts.

9.2 Provide a layout of the existing access road(s), bridges, drainage and culverts to the development site. Identify whether any new roads/trails will be required for the development.

9.3 Evaluate options for the provision of suitable roads/trails for the development, taking into account proper access and egress to the project site.

9.4 Select the preferred option for the provision of suitable roads/trails for the development. This will need to examine construction materials (types, sources, volumes, transportation) and methods in relation to their environmental impacts.

9.5 Recommend precise mitigation measures, based on the specific options selected, for the proper management of the vehicular traffic, roads and trails close to and within the project area.

10. ENERGY GENERATION

10.1 Determine the projected energy requirements for the entire development.

10.2 Evaluate a minimum of two (2) options for meeting the energy needs, using fossil fuel, solar, hydro, and wind resources (and others if appropriate). For each of these options, it will be necessary to investigate:

- Fuel Storage;
- Transportation;
- Health and safety;
- Pollution sources, volumes, and types;
- Significance of any pollution that may result from energy generation;

10.3 Select the preferred option(s) for energy generation. This should be based on environmental grounds and should specify the residual impacts of generation of the preferred option, its significance and the mitigation measures to be undertaken.

11. SOCIAL FACTORS

11.1 Determine potential impacts on socioeconomic conditions taking into account factors such as:

- Traditional resource users within the adjacent project area and zone of influence, if applicable;
- Describe the potential social and economic benefits of establishing the proposed facility. Characterize the impacts in terms of type (beneficial or adverse), magnitude (high, medium or low), direct/indirect, duration (short, medium and long term, sporadic), avoidability and reversibility;
- The LLES preparer will consult and report on the views and concerns of directly affected stakeholders such as nearby communities, local NGOs and relevant government departments/agencies regarding the development of the project.
- Provision of basic health care and hygienic facilities for all workers during construction and operation of the project.
- Fire protection;
- Police/Security services.

12. ARCHAEOLOGY

12.1 Consult with NICH-Institute of Archaeology to determine if any known features of archaeological or cultural importance and provide recommendations for the protection of any features, if applicable.

13. EMERGENCY MANAGEMENT

13.1 Identify emergency preparation and response management measures for the proposed development inclusive of human health and safety, fire, flood, hurricane, spills, etc. This should include evacuation and hazard management plans inclusive of climate change adaptation measures (such as increase rain falls and structural designs conducive of climatic conditions of the project site).

- Human health and safety
- Fire
- Explosion
- Equipment malfunction
- Spillage/Chemical Accident, and
- Hurricanes

C. CONCLUSION/RECOMMENDATIONS

This section discusses the potential impacts (both positive and negative) and proposes alternatives to the execution of the project based on the information generated by Section B.

14. ALTERNATIVES FOR DEVELOPMENT

14.1 Present all reasonable alternatives for development in comparative form, exploring each alternative. Include the no-action alternative and the reason why certain alternatives were recommended or eliminated.

15. MITIGATION AND MONITORING PLANS

15.1 Based on the assessments, develop a mitigation matrix outlining mitigation measures for all potential negative environmental impacts including but not limited to construction activities, waste management, water quality, habitat alteration, etc.

Provide a monitoring plan to be implemented for the entire operation, identifying any agency/body responsible for its implementation. The plan should include monitoring of wastewater discharge characteristics (if any), changes in ecological species (including endangered species), contingency measures to emergency response to accidental events (fire, flood, hurricane, leakages, spillages, etc.).

ANNEX 9: TOURISM-RELATED ENVIRONMENTAL GOOD PRACTICES GUIDANCE[38]

Boating

- Designate no anchoring areas in fragile habitat areas, and require large boats to stay out of shallow areas to prevent sediment disturbance.
- Require tourism operators to place stable mooring buoys in reef/lagoon areas, so that reefs will not be harmed by anchors.
- Print and distribute maps and educational materials on proper anchoring and mooring of boats.
- Impose penalties for violating boating and anchoring rules.
- Limit the number of boats in the tourism area.
- Require boats to have waste holding tanks and use marina pump-out and trash disposal facilities on a regular schedule.

Sightseeing/Wildlife Watching

- Restrict access and designate specific areas for hiking.
- Ban the use of disposable plastics in the marine environment.
- Develop management plans for both heavily used, biologically sensitive areas and species.

Sport Fishing

- Design a permit/license program for sport fishermen. The number of licenses can be limited to sustainable harvest levels or license fees could be set high enough to reduce the number of fishermen and pay for enforcement and fisheries enhancement programs.
- Set catch restrictions based on fish size, number, species, or season.
- Enact gear restrictions that limit the types of fishing tackle that can be used. For example, require the use of barbless hooks, which allow more fish to escape than do barbed hooks.
- Limit the number of deep-sea fishing charter operators or boats.
- Develop a catch and release program for some fishing operations.

Diving/Wading/Souvenir Shop Sales

- Prohibit coral, shell, and wildlife collecting and sales, or limit collection to sustainable levels, with stiff penalties for violations and incentives for reporting violations.
- Prohibit the touching of coral by divers and snorkelers.
- Educate tour operators and tourists on how to observe, but not harm, wildlife.
- Educate operators of souvenir stores (especially locals) to sell non-threatened items. Involve local people in the management of conservation and ecologically sensitive areas.
- Develop management plans for both heavily used, biologically sensitive areas and species.
- Develop community-based ranger and volunteer programs.

[38] Source: http://inece.org/PDFDocs/tourism.pdf

Camping

- Require campers to obtain permits and learn protected area rules.
- Provide well-marked trash disposal bins, along with collection services so that campers have a place to discard trash.
- Place signs that communicate protected area rules.
- Place physical barriers around fragile areas to limit access and prevent damage.
- Ban firewood collection and campfires, and assess penalties for violations.
- Restrict camping to certain areas.

ANNEX 10: ENVIRONMENTAL FOLLOW-UP REPORT (EFUR)

ENVIRONMENTAL FOLLOW-UP REPORT

Sub-project name: _____ Env. Category: _____

Sub-project sponsor/owner: _____ _____
Signature

MFFSD/FD staff: _____ _____
Signature

- Environmental effects

Summary of the environmental effects of the sub-project that were predicted during sub-project planning.

- Environmental effects observed in the field visit

Summary of the environmental effects, positive and negative, which have been observed in the field visit:

- *Predicted effects and nature of observation;*
- *Unpredicted effects and nature of observation.*

People participating in the field visit:

Name	Institution	Charge	Signature

- Compliance of the environmental specifications

Project's compliance with environmental design specifications, including environmental protection and control, mitigation, reimbursement and comparison measures, if any.

- Results of the field visit

Results of the ongoing monitoring of specific bio-physical and socio-economic effects, including the comparison of baseline values and monitoring results, if available.

- Conclusions and recommendations to the project operation

Recommendations to project operations if any, including the rationale for such recommendations.

- Conclusions and recommendations to the monitoring programme

Recommended adjustments to the monitoring programme, if any, including the rationale for the recommendations.

Other observations, recommendations and conclusions.

ANNEX 11: ENVIRONMENTAL FINAL REPORT (EFR)

ENVIRONMENTAL FINAL REPORT

Sub-project name: _____ Env. Category: _____

Sub-project sponsor/owner: _____ _____
Signature

MFFSD (Fisheries Department) staff: _____ _____
Signature

1. Activities Realized

On _____ (date), a final review of the environmental aspects corresponding to the activity_____ (sub-project name) was conducted with the intention of verifying the fulfillment of the Measurements of Mitigation contemplated for the project, as well as of verifying if other negative impacts have appeared during the period of execution of the work. The following persons were included in the review:

Name	Institution	Charge	Signature

2. Background

This section must record all activities carried out to date with a summary of the issues identified and recommendations made in previous documents (ECF, EFUR).

3. Results of the Examination

Here it is necessary to describe in detail the measures of mitigation, the grade of fulfillment, the current state and, if necessary, the reasons for which the measures have not been completed.

No.	Mitigation measures	Accomplishment			Time to accomplishment of the measures	Observation
		Yes	No	%		

4. Conclusions

Based on the examination and the results of the evaluation, prepare the conclusions of the fulfillment of the measures of mitigation and established recommendations.