



**PROJECT FOR THE CONSERVATION OF MARINE RESOURCES IN CENTRAL
AMERICA**

Funding Agreement: (2010 66 836)

Annual Work Plan (AWP)

January to December 2015

South Water Caye Marine Reserve

1. LOGICAL FRAMEWORK OF THE PROJEC

INTERVATION LOGIC	VERIFIABLE INDICATORS	SOURCES AND MEANS OF VERIFICATION	HYPOTHESIS
MAIN OBJECTIVE (MO)			
To contribute to the conservation of the ecological functions of the Mesoamerican Reef System (MRS).	Mangrove areas in the project's CMPA equal to or greater than those of the baseline.	Baseline study and final study.	
	Seagrass areas of the project's CMPA equal to or greater than those of the baseline.	Baseline study and final study.	
PROJECT OBJECTIVE (PO)			
To consolidate the CMPA selected in the project's region and ensure the use of coastal and marine resources in the medium-term.	PO VIO1: The financial gap does not increase in 100% of the CMPAs included in the programme.	Baseline study and final study.	<ul style="list-style-type: none"> • The MAR ecosystem does not suffer irreparable damage by the effects of climate change. • Countries with participation in the MAR coordinate their strategy. • The four governments maintain and promote policies which support the protection and conservation of natural resources. • Worldwide and domestic macroeconomic conditions do not adversely affect the financial resources available for the CMPAs. • Social, migratory and population stability do not impose disproportionate pressures on the natural resources of the MAR. • There are supportive policies for the tourism sector and the volume of tourist visits to the countries and protected areas is stable.
	PO VIO2: Management plans are updated and under implementation in 100% of the MCPAs included in the programme.	Five MP developed; qualitative analysis of the programme / sub programme running.	
	PO VIO3: The CMPAs included in the programme have natural sustainable resources use plans under implementation.	Monthly and annual Project reports, informes de seguimiento de los fondos miembros.	
RESULTS			

INTERVENTION LOGIC	VERIFIABLE INDICATORS	SOURCES AND MEANS OF VERIFICATION	HYPOTHESIS
<p>R1: The protection and conservation of the coastal -marine ecosystems in the marine area are secured.</p>	<p>R1 VIO1: At least 12 initiatives for marine and terrestrial infrastructure built or rehabilitated and put into operation by the end of the third year (2017) and that will be used properly in accordance with their original purpose until the conclusion of the project.</p>	<p>Inventories and monthly and institutional reports; visitor records; patrol reports; Number of participants trained; user manuals. Photos.</p>	<p>VIO1 & VIO2: There are no adverse weather conditions that affect the integrity of the infrastructure of the CMPAs. Funds allocated by the Executor for maintenance are available.</p>
	<p>R1 VIO2: The acquired facilities are being used properly and have regulation and usage logs.</p>	<p>Inventories; usage regulations; usage logs; operation and maintenance manuals; maintenance logs; biological monitoring reports; training reports. Photos</p>	
	<p>R1 VIO3: The park rangers (officers and community members) receive at least two training sessions per year on the protection and conservation of natural resources.</p>	<p>Certificates/registration records/training reports and lists of participants.</p>	<p>VIO3 & VIO4: There are sufficient funds to maintain human resources of the CMPAs.</p>
	<p>R1 VIO4: A control and supervision planning scheme exists and is being implemented in accordance with the operational capabilities of each area.</p>	<p>Reports on the planning and scheduling of control and surveillance activities; Patrol reports, logs.</p>	
	<p>R1 VIO5: At the end of 2015 (second year) five management plans (programs) exist and are being implemented (over the lifetime of the project).</p>	<p>5 Management Plans produced; qualitative analysis of the ongoing programs/sub-programs.</p>	<p>VIO5 & VIO6: The five governments maintain policies which support the protection and conservation of natural resources; The CMPAs maintain their current administrative structures.</p>
	<p>R1 VIO6: At the end of the Project, the five CMPAs have improved their socio-economic and governance indicators by x%.</p>	<p>Baseline studies using the Management Effectiveness Assessment/final measurement.</p>	
<p>R2: Best management practices and the sustainable use of marine-coastal resources are applied.</p>	<p>R2 VIO1: The five CMPAs have a strategy/community development plan for the end of the second year.</p>	<p>5 strategies developed; qualitative analysis of activities in progress as part of the project.</p>	<p>VIO1 & VIO2: There is community interest in participating in the project's actions; There is general macroeconomic stability (input costs/sales prices/open markets); Other entities (NGOs, local governments, academia) are interested in supporting productive initiatives that strengthen communities and grassroots organizations.</p>
	<p>R2 VIO2: 100% of the proposed productive initiatives have undergone feasibility/market and business studies/plans, in addition to studies on business aspects and training and technical support mechanisms.</p>	<p>Complete proposals (support studies).</p>	
	<p>R2 VIO3: Increased number of community members trained, accredited and involved in activities that support daily management tasks (biological monitoring; control and surveillance) of protected areas.</p>	<p>Accreditation reports and records, lists of participants; activity reports.</p>	<p>VIO3 & VIO4: There is community interest in participate.</p>
	<p>R2 VIO4: The 5 CMPAs have mechanisms (community</p>	<p>Rules on the constitutionality and</p>	

INTERVENTION LOGIC	VERIFIABLE INDICATORS	SOURCES AND MEANS OF VERIFICATION	HYPOTHESIS
	advisory committees or equivalents) which ensure the participation of local stakeholders in decision-making guidance regarding the management of the areas and meet at least twice yearly.	functions of the committees/minutes of meetings/committee training reports/institutional reports/list of participants.	
R3: Communication and effective exchanges to promote the adoption of new practices.	R3 VIO1: At the end of the project, at least six (6) small regional projects implemented and monitored by the Member Funds: Three of them in a first call in 2015 and the other 3 in a second call in 2016.	Technical and financial reports; monitoring reports of the Member Funds.	There is an interest of proponents to participate in small grants projects. The respective national authorities have shown interest in participating in regional meetings and monitoring the implementation of the agreements reached.
	R3 VIO2: At least two regional meetings have been held and a strategy for monitoring the implementation of the agreements has been reached.	Meeting minutes, list of participants; activity report; statement of the agreements reached and monitoring plan.	There is interest in participating.
	R3 VIO3: At the end of the project, at least five exchanges of experiences between area managers and/or other stakeholders from each MCPA have been encouraged.	Visit report, list of participants.	
ACTIVITIES			
Result 1:			
Investments in infrastructure in CMPA			
Investment in equipment in CMPA			
Development/updating of CMPA management plans.			
Support for the implementation of the control and surveillance system.			
Support for the implementation of assessment and monitoring systems.			
Protection of fragile ecosystems			
Recovery of degraded ecosystems.			
Institutional strengthening for areas managers.			

INTERVATION LOGIC	VERIFIABLE INDICATORS	SOURCES AND MEANS OF VERIFICATION	HYPOTHESIS
Result 2:			
Development of the production bases of communities /associations.			
Development/updating of plans for the sustainable use of marine-coastal resources in communities/associations.			
Participation of organized community groups in the management of natural resources.			
Strengthening communities/associations.			
Administrative expenses (administrator cost of Mexico NGO and bank fees).			
Result 3:			
Small regional implementation projects.			
Wide dissemination of results.			
Exchanges of experiences at the regional level.			
Exchanges between executors.			

CONTEXT AND SENSITIVE POINTS

A regional study undertaken by CAMPAM demonstrated that the SWCMR main gap in its management was in its enforcement policy and plan. Effective and efficient management incorporates many programs but one of the most important ones is compliance. We have noted that MPA staff presence is a deterrent of illegal activities and contributor to compliance. Many factors have hindered the efficiency in the current plan such as under and inadequately resourced. The participatory process in management plan elaboration and subsequent implementation will contribute in their direct social and economic benefit. At a regional level SWCMR was nominated as a hotspot for biodiversity and adopted as one of the MPA's under the MARFund. Biodiversity as such is an integral indicator in demonstrating the level of management effectiveness such that a robust monitoring plan is in place and should now incorporate community stewards.

Through the NPAS guidance and with many final plans for rationalization, financial sustainability, governance, legal framework the SWCMR integration into the National System Plan will be facilitated by the activities in this plan. Setbacks may be encountered in the bureaucratic processes and financial budget cuts received in our fiscal year allocations. Other setbacks that might be encountered and may affect the project is the level of political will. Every five years there is an election held in the country and as a result a change in government could result in a delay for the implementation of project activities. Also a change in government that lacks knowledge and are unwilling to see the project through might delay the process.

HIGHER PROJECT OBJECTIVE

“To contribute to the conservation of the ecological functions of the Mesoamerican Reef System.”

RESULT 1. THE PROTECTION AND CONSERVATION OF MARINE-COASTAL ECOSYSTEMS IN THE MARINE AREA ARE SECURED

South Water Caye Marine Reserve has been designated as one of seven components of the Belize Barrier Reef System - World Heritage Site, in recognition of the uniqueness of its contribution to Belize's reef system, the largest, and possibly the least impacted reef complex in the Atlantic–Caribbean area (UNESCO, 1996). The protected waters of the reserve provide nursery and feeding habitats for at least twenty four species of international concern, recognized under the IUCN Red list as Critically Endangered, Endangered or Vulnerable (Table 5; IUCN, 2008), including five species of coral, three species of turtle, fifteen species of fish and the vulnerable West Indian manatee. The Faoes in the southern part of the marine reserve, and associated Pelican Cayes are recognized as particularly important, with a unique and fragile species assemblage with a species diversity unparalleled in the Caribbean.

The overall goal for the management of South Water Caye Marine Reserve is: To provide for the protection, wise use, understanding, and enjoyment of the natural resources of South Water Caye Marine Reserve in perpetuity. This goal is supported by a number of objectives:

- Maintain and conserve the natural resources of South Water Caye Marine Reserve for the benefit of current and future generations
- Engage fishermen in the management of sustainable fisheries
- Provide opportunities for recreation, interpretation, education, and appreciation for all visitors

- Strengthen education and understanding of users and potential users of the dynamics of coral reef systems within South Water Caye Marine Reserve and the human impacts affecting them
- Identify, implement and strengthen priority research and monitoring through on-site activities, collaboration and partnerships

Also the national objectives for conservation revolve around the protection, conservation and rational use of Belize's natural resources within the context of sustainable human development. These goals are supported by the National Protected Areas Policy and System Plan (NPAPSP, 2006), which was developed following a full review of the national protected areas system in 2005. It was accepted by Cabinet in January 2006, and centers around the following policy statement:

The Government of Belize shall promote the sustainable use of Belize's protected areas by educating and encouraging resource users and the general public to properly conserve the biological diversity contained in these areas in order to maintain and enhance the quality of life for all. This shall be achieved by facilitating the participation of local communities and other stakeholders in decision-making and the equitable distribution of benefits derived from them, through adequate institutional and human capacity building and collaborative research and development.

Since the creation of the marine reserve in 1996 the Fisheries Department embarked on formulation of a management structure. A headquarters with living facilities and equipment were procured and a core staff consisting of a manager, biologist and two rangers and a care taker were hired. Infrastructural and equipment investment and management presence have been steady up to present.

The major subactivities that will take place, in order to achieve the results objective along with the management objectives include an investment in: a) infrastructure: erosion study, reclamation of land; b) equipment: engines, internet, uniforms; c) surveillance and control: fuel; d) support for the implementation of assessment and monitoring: monitoring of sea grass, reef health, water quality, commercial species, Nassau groupers; e) Protection of fragile ecosystems: mooring buoys and demarcation buoys to be installed.

Erosion has been drastically affecting the Caye and has resulted in substantial investment in order to minimize land loss. For this reason, an environmental engineer or consultant will be hired to carry out studies that may assist in the design of an erosion control mechanism. With a new and improved design on erosion control, a Beach containment apparatus will be installed at Twin Caye in order so that the land reclaimed is not lost.

In 2007 a fire completely destroyed the headquarters along with all the enforcement, monitoring and electrical equipment. As a result the Fisheries Department had to build a basic headquarters facility and has been slowly acquiring the equipment lost. However, the existing infrastructure is rustic and barely accommodates the staff in a comfortable setting. Due to the schedule arrangements staff works on a two weeks on and a week off. It is the duty of the department to provide a comfortable setting in order to maximize productivity and camaraderie amongst the staff. The main headquarters is used as a base to house the staffs who conduct the day to day management at the marine reserve. This includes the enforcement activities, visitor impact management, collection of visitor's fee, and the day to day outreach carried out to fishers and visitors. These activities that are carried out on a daily basis allow for the protection of important commercial species and coral life. It also allows the department to collect much needed revenue for the upkeep and maintenance of the reserve base. By having presence in the Marine Protected

Area we will achieve all the goals set out in the management plan. It helps deter illegal tourism practices and ensure guides follow the regulations with their tourist and at the same time we ensure our education and outreach to fishers and the local and international visitors is continued. The new facilities and equipment will allow the staff to be well rested and perform their duties in a timely and professional manner on a daily basis. This in turn should increase the management effectiveness of the staff for the Marine Protected Area of the South Water Caye Marine Reserve.

Marine Reserves are fisheries management tool implemented by the Department to ensure sustainable fishing. The biologist along with the help of the other staff members conduct monitoring activities which help in making management decision. The monitoring activities carried out by the staff require specific monitoring equipment. With the acquisition of this equipment the staff will be able to conduct their monitoring activities in a timely and effective manner. Thus, improving the data use for management decision of the fishery industry. Awareness is also conducted as it's important to educate fishers on the importance of protecting our marine resources. The SWCMR staff has been working with limited resources and the provision of these resources will allow them to achieve more in this 5 years Project.

BS.1.01 Investments in infrastructure.

A new headquarters is to be built on the island of twin cayes, which has been strategically chosen for its location. This will enhance the protection and conservation of the coastal marine ecosystem in the marine area. The strategic location of this headquarters will help the department achieve the countries national management goals and the reserves management goals mentioned in the introduction. The headquarters is situated directly in front of the conservation zone 1. The conservation zone 1 is one of the most heavily used areas in the CMPA and a very important area for the countries fisheries. The area is a no extraction zone with the regulated use of tourism recreational activities. It is also a very important nursery ground for conchs and lobster species. This conservation area also protects other targeted commercial species and important protected species of fish found on the edge of the barrier reef within the conservation zone 1. It is important to the Department as it is considered a replenishment zone to the general use areas where extraction is allowed.

Under the project the following activities will be carried out in regards to investments in infrastructure over the project lifetime: a) study of mitigation measures to be done to keep reclaimed land, b) reclamation of land in year one/two, c) new pier to be built, d) building of new infrastructure to house staff and visitor center, e) upgrade of solar system, f) new station to be built in Pelican cayes area, g) new solar system to be installed in ranger station. All of the following investments will enhance the protection and conservation of the coastal marine ecosystem in the marine area by ensuring that officers are present in the area for the long term purpose. Also the investments in infrastructure will enhance visitor fees collection, the interaction of visitors with the officers and local stakeholders with visitation to the new visitor center facilities.

BS.1.01.01: Twin Cayes Beach erosion study

Erosion has been drastically affecting the Caye and has resulted in substantial investment in order to minimize land loss. However, it has been noted that some investments are being lost due to inadequate designs which are instead collapsing. For this reason an environmental engineer or consultant will be hired to carry out studies that may assist in the design of an erosion control mechanism. Some studies have been carried out at other MPA's to help deal with the same scenario which will be used to help the study design. With a new and improved design on erosion control a Beach containment apparatus will be installed at Twin Caye in order so that the land reclaimed is not lost. This activity will help achieve the project objectives for the protection and conservation of marine coastal ecosystems in the marine area are secured for the projects lifetime and beyond that. The land reclaimed will house the reserve staffs that are mandated to protect and ensure conservation of the marine coastal ecosystems in the marine area are secured. The land will also provide areas for the visitors to spend the day and recreate before going on dives or snorkels and Bar B Q. This time spent on the island will also allow the staff to give presentations on the reserve and the collection of visitor fees and the sale of gift shop items.

The ToR will be drafted for the erosion study and submitted for approval to PACT. The total cost for the erosion study consultancy is US\$15,000.00 to be covered by the project. As a part of the consultation tide and current instruments will be used to measure and determine flow and rate of currents and wave action in the area that are causing the erosion. It is hoped that the study will determine the best mitigation measures to be installed or used to prevent further lost and that of existing land reclaimed. The minimum estimated time for the study to be done is two months. By the end of the second month the technical report should have been sent to PACT and MAR Fund. The call for the consultation to create the report will be done in March and expect to begin work on the data collection by April. By May we expect the study to have been completed. In May we expect the document to have been submitted to PACT and revised by end June to have been approved for the continuation of the project.

BS.1.01.01: Containment and Reclamation

In 2006 an investment on an erosion control barrier was constructed around the Fisheries Department land on Twin cayes. Due to constructing without carrying out a study on wave energy, currents, seasonal phenomenon's etc. the entire barrier collapsed after a couple of years. For this reason using the recommendations arising from the erosion control study, a mechanism to mitigate the impacts of erosion will be constructed. The erosion study will ensure that the land reclaimed will not be lost and the new headquarters facilities along with it. This will incorporate presently used mechanisms as well as innovative or internationally recommended codes. After the studies and designs have been approved for the containment of the land; a land reclamation activity to gain the land lost to erosion and to accommodate the new infrastructure will be embarked. The foot print of this activity will be minimal as a burrow site where dredging occurred in 2006 is nearby and can easily supply the sand needed for the reclamation. By May all the necessary departments: (Department of the Environment, Mining, Building Association) will be contacted so that the necessary actions needed are taken for the environmental clearance. The department will comply with all the environmental clearance that is needed from all the relevant departments. Mainly a low level impact study will be carried and cleared with the Department of the Environment. As soon as the environmental clearance is given we shall issue a call for proposals to carry out the dredging activities to refill the island. It is expected that between June and July, with the clearance from KfW, we shall initiate the activities for the refilling of the island.

The total cost for the, containment and reclamation is US\$35,593 of which \$10,000 will be as counterpart from the Fisheries and the remainder will be covered by the Project (US\$25,593). The US\$35,593 will cover the cost of the contract for the service of reclamation which includes labour for the reclamation of land and materials to ensure the land reclaimed is not lost. This activity will help achieve the project objectives for the protection and conservation of marine coastal ecosystems in the marine area are secured for the projects lifetime and beyond that. The land reclaimed will house the reserve staffs that are given the mandate to protect and ensure conservation of the marine coastal ecosystems in the marine area is secured. The land will also provide areas for the visitors to spend the day and recreate before going on dives or snorkels and Bar B Q. This will allow the staff also time to educate the visitor hence strengthening the education and outreach component for the reserve.

BS.1.01.01: Construction of Main Headquarters

In order for the construction of the main headquarters take place a study needs to be conducted to ascertain that we can either rehabilitated the current building or if not feasible just begin construction of a new headquarters. A Central Building Authority consultant will be brought to the island to assess the existing infrastructure and to determine which possibility is the best: a) rehabilitating the field station or b) indicating that this infrastructure does not work and that is better to have a new one. He is to also include a fiscal analysis of the cost it would incur to renovate rather than to construct a new infrastructure. From the project funds, US\$2,678 will be allocated for payment to the contractor/consultant from the Central Building Authority in Dangriga for their services.

BS.1.01.03: Pier

In the first year of the project the department will be allocating funds towards the upkeep of the existing pier at the island so that it is safe for staff and visitors.

The current dilapidated state of the pier is unsafe and hence will need some repairs if only for the upkeep until the new pier is constructed at the base. The department will be contributing US\$3000.00 towards upkeep of the pier which will be used to procure the needed items (Nails, hammer, 4x4 lumbars, and 12x12 posts) and the caretaker along with the staff will ensure that the facilities are being properly maintained.

BS.1.01.05 Complementary of Solar System for Main Headquarters

The energy need for the new infrastructure shall be made of renewable energy consisting of a 24V inverter with solar panels and a new battery bank. Equipment that is needed to efficiently operate a base of operations includes laptops, printer, base radio, handheld radio, Freezer, lights and a radio. This new system will complement/upgrade the solar system financed by the MARfund project in 2014. In 2014 a new solar system was installed worth US \$25,000. The fisheries department has a caretaker hired whom is in charge of the day to day maintenance of the facilities. As counterpart the department will also spend US\$2,000.00 in materials and supplies for maintenance (battery water, bringing in technician to service) during the 2015. The department procures the needed items such as battery water and the caretaker along with the staff ensures that the facilities are being properly maintained.

BS.1.02 Investments in equipment.

The equipment to be procured in year one is: engine, internet, and uniforms which are all essential equipment to carry out efficient protection and conservation of the ecosystem and its services. The equipment procured will be used for the daily management needs of the reserve. Engines have a lifetime of 3 years at a reserve and are one of the key equipment needed for surveillance, protection and conservation of the area. The equipment will also allow staff to look and conduct daily enforcement/other activities more professionally and in a timely manner. The internet will allow for a much needed improvement in the communication gap between the community, the reserve and the headquarters. This will also assist in fulfilling our commitment by building our capacity for our education and outreach component of this project and our national and management goals. Also as part of the management plan in order to achieve the goals recommendations are made for this same equipment which include uniforms, fuel, more vessels, and to better the communications system between the reserves and the main office. The implementation of these activities will increase presence in the MPA, increase professionalism and will encourage stakeholders to participate and engage the enforcement officers as more presence will be seen in the MPA.

BS.1.02.01: Outboard 4 stroke engine

The Belize Fisheries Department will donate another engine to the SWCMR base. The engine is a Yamaha four stroke 100 horse power engine. The purchase of an outboard 4 stroke engine for the South Water Caye Vessel (SWCMR) will support enforcement activities and surveillance which will allow us to reach the projects goals in conservation and protection of the coastal marine ecosystem. The engine will be procured when the government approves the budget and will be bought from Marelco in Belize City. The cost of the engine will be US\$12,500.00 which will be covered by the department. The new 100hp four-stroke engine will be placed on the 25 ft vessel currently at the SWCMR base. The department will also be assisting the project as counterpart with the boats and engines. The total cost of these three vessels is \$22,500.00. The cost of engine on these vessels is \$25,000.00. The cost of maintenance for the engines is \$3,000.00 for the year 2015. It is important to have a fleet of patrol boats in good working condition to be able to respond to any infractions being committed at the reserve; hence allowing for the proper protection and conservation of the coastal marine resources. Currently the Department has two small vessels with 60 hp and a bigger vessel is needed to outrun poachers and take on long distance operations. Also with the building of a new station one of the smaller boat will be deployed in different areas of the reserve to maintain presence and the third faster vessel will be used as backup for either area. For the past year on two separate occasions, we encountered vessels that were attempting to flee due to infractions being committed in the park. The reason they desisted from fleeing was that they observed a larger vessel with a heavier horsepower engine being manned by a fisheries officer headed in their direction after attempting to flee from the smaller vessel; hence, the reason a larger horsepower vessel is needed. As has been proven in other reserves such as Holchan when two vessels are deployed in a given area even though one ranger is on board it is effective because it also helps to deter individuals from committing an offence. Also the offenders would know that a second patrol vessel is within a short range that can assist. As SWCMR is a hot bed for illegal activities assistance has been requested from the

Coast Guard and Belize Defence Force to have two officers work on a rotational schedule with the SWCMR rangers.

BS.1.02.04 Internet

The fisheries department is currently in negotiations to install a new phone line out at the reserve along with Internet. Internet is an integral part of the daily management of the reserve management. The new lines will be procured from the government supplier of telephone communications as a single bid. A new smart system is being installed for enforcement patrols. This will be used as a means of communication and it will also be used to disseminate important information. The cost of the internet and phone line is of US\$150.00, monthly to be covered by the department for a total cost at the end of the year of US\$1,800.00. The fee covers the cost of the phone and monthly service charge for internet and phone use. The department will cover the cost of the internet for daily management of the reserve for the lifetime of the project. This will also be a key piece of equipment in ensuring that the project is a success. With the new installed communication services, a greater level of efficiency should be achieved for the reserve staff and the headquarters. The installation will greatly assist in meeting report deadlines decrease the cost in fuel consumption for need of communication, and increase the reserve staff time to enforcement as these activities take away from staff time. Currently when in need of communication staff has to go to dangriga to be able to get good internet service. This is a cost of fuel and time the staff can spend on conducting enforcement to achieve the project result of protection and conservation of the marine ecosystem.

BS.1.02.04 Staff Uniforms

Uniforms will be purchased. This will allow the officer/staff to look professional while carrying out their duties. By being properly attire the officer are able to conduct enforcement activities. The officer are easily recognised and respected as enforcement officer when properly attire. The uniforms will assist the officers in carrying out enforcement duties hence assisting in the daily management of the reserve allowing the department to achieve the management goals. The cost of US\$1,335.00 to purchase uniform will be covered as counterpart by the department this year. A local supplier will be contacted for the printing of uniforms for the officers/staff. This includes caps, shirts, and pants. This activity is to be carried out in March and will allow for two sets of uniforms for each of the 5 staff members.

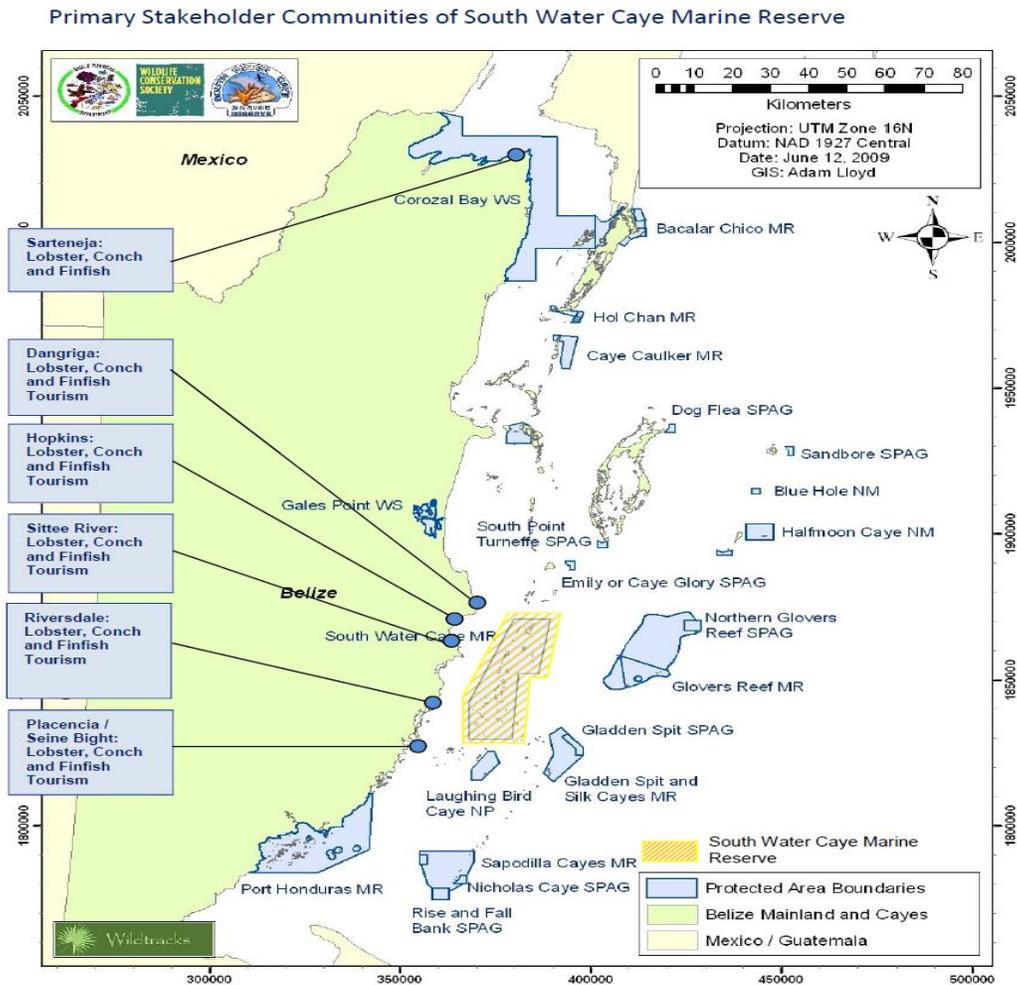
BS.1.04 Support for the implementation of the control and surveillance system.

A very important component for the conservation of the ecological functions in the South Water Caye Marine Reserve is enforcement. The Fisheries Department has invested in the management of the Marine protected area for five staff members to be present in the marine reserve all year round. The staff works on two weeks duty and one week off. At all times we have a minimum of three staff at the MPA. Part of the staff's daily management activities is to conduct enforcement activities. During the enforcement duties the staffs ensures the parks and fisheries regulations are upheld and respected. To ensure that the staff responsible for the area carries out their surveillance duties in a professional manner the department will ensure they go through enforcement training. Another activity that will ensure that enforcement activities are continued

will be the response to community based concerns. To build community support for the protected area we need to respond to confidential reports received of poaching and illegal fishing at South Water Caye Marine reserve destined to the black market on the mainland. Other reports are also received of stash houses with illegal products that are located deep within local communities. When enforcement activities are carried out they ensure the projects results are obtained for the protection and conservation of marine coastal ecosystems. Also being able to confiscate, arrest and respond to community based concerns increases the deterrence of illegal activities, hence protecting and conserving the marine resources.

BS.1.04.03 Enforcement and surveillance activities

A very important component for the conservation of the ecological functions in the South Water Caye Marine Reserve is enforcement. The staff head out on enforcement activities on a daily basis that cover the most important areas of the reserve. This includes the conservation zone 1 where we usually encounter many individuals trying to do poaching. The area is a very productive area hence the need for heavy enforcement. Under our mandate the officers are able to conduct arrest summons and prosecute individuals breaking the law. The cost per annum for fuel to conduct enforcement within the MPA is US\$16,200.00 to be covered by the department. These enforcement activities will help achieve the project objectives for the protection and conservation of marine coastal ecosystems in the marine area to be secured for the projects lifetime and beyond that.



Currently the enforcement is done on a daily basis. The patrol/enforcement plans are created based on intelligence gathered in the area, weather conditions, and other activities that need to be conducted. If the weather conditions are great then an early patrol is done to deter any illegal activities within the conservation zone. Patrol activities however do have an enforcement aspect for which we follow guidelines for our safety and to ensure proper arrest methods are conducted.

BS.1.05 Support for the implementation of assessment and monitoring system

The National coral reef monitoring network has identified water quality as a data gap. Especially the southern node which includes South Water Caye Marine Reserve due to the land based sources of pollutants. Over the years, we have found that an algal bloom spread over the coast line of Belize. This caused an immediate reaction from all the protected area managers no one knew how and where the bloom had originated. The purchasing of water quality equipment is key for monitoring as these can tell if any external factors are influencing the water quality. This will in turn allow managers to take the necessary steps to assist in the mitigation of these blooms.

Conchs Baseline data showed that the area between Tobacco Caye and South Water Caye is a nursery ground and hence is designated a conservation zone. It is an area important for the replenishment of mature conchs to the fishery industry. The monitoring program we have focuses on habitat, abundance and distribution for conch, corals, spags, lobster, sea cucumber, whelks and sharks, sea grass and mangrove data is used from Smithsonian institute. Great efforts are put into making these data collection and analysis to be used in management decision making. This data is used to determine catch quotas which allows a sustained fishery. These monitoring activities will help achieve the project objectives for the protection and conservation of marine coastal ecosystems in the marine area by allowing managers to make proper mitigation/management decisions to ensure the ecosystems health are being properly maintained. During the first year of the project a ground truthing activity will take place to ensure that the satellite imagery being used for the grasslands and mangroves are accurate. This will be done by the fisheries department personnel in certain sites of the MPA. This data will then be shared with the donors and at the end of the project, the same sites will be revisited to monitor the projects progress.

BS.1.05.01 Ground truthing for mangrove cover and marine grasslands in SWCMR.

One of the main objectives of the project is to contribute to the conservation of the ecological functions of the Mesoamerican reef system. As a part of this strategy the project indicators being used are mangrove areas and sea grass lands. In order to create a baseline, Satellite imagery will be used to scan the area. The SWCMR staff will conduct the ground truthing of the data collected by the satellite imagery. This will include the staff going out to the mangrove areas and grass lands to verify that these are indeed mangrove areas and a monitoring exercise will be conducted to ensure the validity. We will conduct analysis of the data collected as a part of this activity. We will verify that the data being shown by the satellite images is accurate by randomly selecting sites and going to collect data from these sites. The department will cover the fuel to visit the sites and equipment (pH and salinity conductor) to conduct these analyses in counterpart contribution of US\$660.00 in fuel (110 gals). The South Water Caye staff will conduct these activities in May, 2015.

BS.1.05.01 Generation of a baseline of mangrove cover and marine grassland in the five MCPAs

Based on the consultancy results of Phase I of the Project and in order to use the same methodology for the base line analysis of mangrove cover and marine grassland, a remote sensing consultancy will be hired to conduct this activity, using satellite imagery to determine the extent of mangrove and sea grass cover in the marine protected area. MAR Fund will be hiring the consultant and the payment of this contract will be done by the MPA. This consultancy will be implemented during April and May 2015. A total of US\$15,000 of the Project funds will be used to cover the cost of the activity.

BS.1.05.06: Monitoring species of commercial importance

On an annual basis during the peak spawning times of Nassau grouper in December for 10 days after the full moon the team conducts visual surveys to quantify spawning population. The spawning site is located approximately one hour from the main headquarters making it costly and exhausting. Night patrols are also conducted to ensure the compliance of the closed season. The cost of this survey is US\$500 for fuel and tanks, to be covered by the Belize Fisheries Department. The data will allow for managers to be able to detect trends in population densities for better management decisions for the protection of the species. The data would also show the need for improved management in different areas of the reserve. Therefore the monitoring activities contribute to protection and conservation of marine coastal ecosystems in the marine area by allowing managers to make proper mitigation/management decisions to ensure the ecosystems health are being properly maintained.

BS.1.05.06: Monitoring of Reef Health

Fisheries management started in Belize with species protection having size limits, closed seasons and no take zones. However realistically it has been converting into an ecosystem approach. Thus we have monitoring programs that focus on habitat, abundance and distribution for conch, corals, spags, lobster, sea cucumber, whelks and sharks, sea grass and mangrove use from Smithsonian institute. Great efforts are put into making these data collection and analysis to be used in management decision making. This data is used to determine catch quotas, size limits, close seasons, abundance and distribution estimates which allows managing a sustained fishery. The department uses the MBRS protocols for monitoring of fish abundance, Spags, and coral health. Conchs, Lobster, Sea cucumber, and whelks have their own protocols. Mangrove and sea grass monitoring are being monitored by the Smithsonian institute over the last twenty years using the CARICOMP protocol. The cost of this monitoring is US\$4,000.00 covered by the Belize Fisheries Department throughout the project lifetime. The total cost covers the fuel expenses to be incurred for all the monitoring and equipment rental such as tanks. In September the conch surveys will be carried out, Lobster monitoring in June, September for whelks, and sea cucumber and Spags in December.

BS.1.05.07 Monitoring of water quality and key parameters

The National coral reef monitoring network has identified water quality as a data gap. Water quality monitoring in the marine reserve is vital. The Fisheries Department will use the water quality equipment purchased to establish a water quality monitoring program. Water quality

monitoring is important to identify key changes in water parameters that affect healthy ecosystems. The water quality monitoring equipment (salinity, conductivity, turbidity Tester) will be purchased at a cost of US\$500, to be covered by the Belize Fisheries Department. The cost to conduct the monitoring in fuel will be covered by the department when conducting the coral reef surveys.

BS.1.06 Protection of fragile ecosystem

On a daily basis the reserve receives visitors which include catamarans, yachts and other live aboard vessels. These vessels usually find anchoring areas close to the reef in sea grass beds where they are also sheltered from storms by the local islands. In following the guidelines of the management plan the reserve staff shall deploy mooring buoys for these vessels to safely anchor in front of the islands. Two major sub activities will take place in this section includes the installation of mooring buoys and demarcation buoys. By anchoring at these designated buoys we will also be able to protect the sea grass beds and corals in the area. By creating safe anchorage we will be achieving the project results of protection and conservation of coastal marine areas. In the second instance the demarcation buoys will allow fishermen and visitors to be able to properly know the proper zonation of the reserve and where the different uses are allowed. This will increase compliance with the resource users in protection and conservation of the marine areas.

BS.1.06.01. Placement and Maintenance of Mooring buoys and arrays

Mooring buoys and arrays for the safe anchoring on sea beds will be procured and will be installed by staff from the area. The buoys will assist in reaching the management goals under the management plan strategies for protection of the sea beds and corals. The rental of the equipment to install mantas is \$2,500.00 and the labour of the team to be hired to install the buoys is US \$3,600.00 to be covered in counterpart by the Fisheries Department. Also eight buoys and four rolls of rope at the approximate cost of each is \$300 respectively. Therefore a total \$2,400 will be spent on buoys and \$1,200 on ropes. The total counterpart contribution for all these activities is US\$9,700. These are all the projected funds to be spent in the first year of installation.

BS.1.06.02 Placement and Maintenance of Demarcation buoys and arrays

Demarcating the protected areas boundaries will be done through the installation of demarcation buoys. Demarcation buoys in the area is important as it informs visitors of the perimeter of the no take boundaries and encourages them to respect the rules and regulations of the reserve. The demarcation buoys will assist in the enforcement of the protected areas hence protection of the commercial species and coral species in the no take zones. This will assist the reserve staff in achieving the management goals of the protected area. The demarcation buoys and arrays will be procured and a team will be hired to install them in the area. There is a portion of the reserve that is already demarcated, however, some demarcation buoys are often lost and replacements are always needed. The reserve purchased in 2014 demarcation buoys under another project as counterpart US\$9,500. The rental of equipment to install mantas US \$2,500 in addition to the labour for the crew to install US\$3,600 will be covered as counterpart by the department. In year one total counterpart funds is US \$15,600, as no maintenance will be included since the buoys will

have been recently installed. The demarcation buoys will enhance the protection and conservation of the marine ecosystems by allowing visitors to know where the reserve boundaries are; hence achieving result one of the project.

RESULT 2: BEST PRACTICES ARE APPLIED TO THE MANAGEMENT AND SUSTAINABLE USE OF MARINE-COASTAL RESOURCES.

The South Water Caye Marine Reserve is currently carrying out the day to day management of the marine reserve using its Management Plan. Every year the reserve manager prepares an implementation plan which focuses on activities stated in its Management Plan. The Management Plan of the reserve is valid for 5 years currently the management plan is up to date and will expire in 2015. Stakeholder's engagement is very important to have updated information on the uses of the marine reserve and stakeholders. A management plan is needed to have adequate activities needs to be implemented for better management of the reserve. The management plan assists the reserve staff in continuing implementing the adequate measures to manage the reserve and work with stakeholders. This will also ensure that the results will be met for the project. Schools and other educational clubs will be invited to visit the marine reserve on field trips. This is to assist in the education and outreach component for the reserve.

BS.2.03 Participation of organized community groups in the management of natural resources

Under the projects guidelines for the successful implementation of the project there are components that need to be achieved such as an education and outreach, more trained community members involved in the day to day management of the MPA. In the first year as a part of the socialization through the advisory board meeting the local stakeholders will be engaged and updated on the projects status. Programs will be adopted to involve the current stakeholders and create stewardship through these programs that will encourage participation and an empowered sense of ownership of the reserve. Schools and active environmental clubs will be targeted along with parents and other community members as a part of the socialization of the project. In the first year a major subactivity to take place is the taking out of two local institutions/environmental clubs to the reserve. This will allow the local stakeholder to get to know their South Water Caye Marine reserve by taking them to the reserve. This will enhance and promote students interest and knowledge in marine ecosystems, and reserves. Presentations will be given to visiting groups on the best fishing practices, importance on protection of ecosystems, and lastly the why it is important to follow the laws of the reserve along with a reef and mangrove cleaning component to be carried out by the visitors. This community based program will ensure that the results of the project are achieved as best practice and sustainable use of marine resources will be promoted. As a part of being able to qualify for the trip the club must engage in a cleaning campaign for the island of Twin cayes. A thorough clean up campaign will be embarked on by both the reserve staff and the visitors. The vessels will be used to transport the garbage back to the mainland to be carried out prior to BS.1.01.01 containment and reclamation.

BS.2.03.02 Education and outreach trips to the cayes with local educational institutions/environmental clubs, formation of environmental clubs with assistance of outreach person.

Through the MAR Fund Project we will seek to educate and give the opportunity to many local stakeholders to visit the South Water Caye Marine Reserve. The sad reality is that the cost to visit a local Marine Reserve is high and most Belizean cant and never will be able to afford a visit. Through these trips not only will we grant them the opportunity to visit a marine reserve but will seek to encourage more interest in the protection and conservation of the marine ecosystems. This is a strategy the department will use to strengthen ties with the community. The trips will hopefully also encourage more students to study marine ecology, and natural resource managers. The total cost to the project will cover food, fuel, and rental of gear. Presentations will be given to visiting groups on the best fishing practices, importance on protection of ecosystems, and lastly the why it is important to follow the laws of the reserve along with a reef and mangrove cleaning component to be carried out by the visitors. This community based program will ensure that the results of the project are achieved as best practice and sustainable use of marine resources will be promoted. Three overnight trips will be conducted with at least thirty individuals. The cost to the project is of US \$6,000.00 of which US\$2,000 will be used per trip to cover food, snorkel gear and fuel (\$800 in food, \$1,000 fuel and \$200 gears) and counterpart funding for use of boats will be of US \$1,000.00. The associated cost to the project will include assistance with bus if necessary, fuel for the boats, food for the groups, and rental of gears. The timeline for these activities is in June and July, 2015. Initial meetings with the local institutions will be held between April and May, 2015 to work out the logistics and dates for the trips. During this period, the staff will work on presentations and basic introduction to marine biology. As a part of being able to qualify for the trip the club must engage in a cleaning campaign for the island of Twin cayes. A thorough clean up campaign will be embarked on by both the reserve staff and the visitors. The vessels will be used to transport the garbage back to the mainland.

All garbage that is found within the perimeter and that is accessible within the mangrove will be picked up and bagged; this refers to the areas which don't have extremely dense mangrove areas. The garbage will be separated into recyclables (plastic bottles) and non-recyclables. The patrol/enforcement vessels will be used to transport all the garbage back into town where a trailer that has been offered by a local stakeholder will be used to transport the garbage to the municipal dumpsite. The only associated cost is expected to be fuel to transport the items from the island to the dumpsite. This expense is already being allocated as part of the fuel expenses for this line item under the project and any additional or unforeseen cost related with such will be covered by the Department.

It is important to note that FiD staff has already commenced clean up of the island by transporting the garbage collected weekly (tin cans, paper bottles, plastics and other items) along with the larger items like the old mattresses, stove, butane tanks, etc to the mainland. Most of the garbage items that were found on the base such as old mattresses, stove, butane tanks, etc were only on base for government inventory purposes but now

are being discarded of properly. The smaller items are placed in local garbage bins which are then collected by the town council in Dangriga.

The Department is hoping to continue with this clean-up annually as drifting garbage is a challenge for them all year round. For the activities marked for this year since a stakeholder has offered assistance with local transportation to the municipal dumpsite, we will proceed as mentioned but will work to create an agreement with the local municipal authorities in the long term.

I.6 Unforeseen expenses

I.6.01.03 Unforeseen expenses.

Throughout the projects lifetime the prices of materials and supplies may increase due to global changes in the market. As a contingency, a small amount of money from the project is set aside to cater for these activities. A total of US\$1,928.00 to be covered by the project is set aside.

2. SUSTAINABILITY STRATEGY

Institutional sustainability.

The Fisheries department is a part of a ministry in the government of Belize which is endowed with enactments that are geared at sustainable development. In this vision the government of Belize has mandated that the Fisheries Department along with its policies and laws that govern the fisheries resources fortify and consolidate its resources for the sustainable management of the people's fishery. With this mandate it has also given the department most of the resources needed to carry out that mandate. This project will enhance the mission and vision of the department by allocating more needed resources. The Department currently has a total of five staff hired for the sole purpose of the management of the area. It has invested in a building and boats that are used for enforcement activities. Under UNESCO and NPAS the department has embarked on other projects for education and outreach, and financial sustainability.

Financial sustainability.

As has been mentioned before the Fisheries Department is a ministry in the government of Belize. The project will enhance the current work being done by the fisheries department. Currently the department is funded by the government of Belize. There is a variety of ways that the department contributes back to the government and as such is an asset to the country not only the Government. The management of the CMPA contributes to the country's tourism industry by maintaining pristine areas that appeal to tourist that in turn then contribute to the country's revenue. The protection of the CMPA ensures that a strong sustainable fishery which contributes to the country's revenue consolidated funds. The department also collects a park fee from visitors that visit the CMPA. Through another project with NPAS the department has managed to acquire items that are to be sold to visitors. These funds will be used for the assistance and management

of the area, also to assist some students from the local communities with scholarships. The program has not been as successful as projected due to the base does not having a good pier. As is; the dock is in deplorable conditions and is a hazard and a liability for tourist. This project will enhance the CMPA base and allow for more revenue to be collected as the boats will be able to dock at the base visit the reserve station, purchase items from the gift shop, pay their park fees.

Environment.

Environmental considerations are being made and all appropriate standards will be met for the construction of both buildings. All the items in the project being made are with due consideration to all the environment risks and environmental impact studies and all other environmental rules and regulations will be adhered to. The project will not have any negative human effects. The project goals of conservation and protection of the marine coastal resources will all be achieved through the various programs (education and outreach, enforcement, research and monitoring, being undertaken by the department. Enforcement activities will be increased will improve with the acquisition of the new engine and bases. The fisheries department will be able to house more enforcement teams such as coast guard, Belize Defence Force, and Police department to continue and increase presence in all areas. Hence this means an increase in protection and conservation. The more comprehensive education and outreach programs along with the community development strategy being implemented will increase knowledge of the MPA and promote compliance with the regulations. The research and monitoring program will allow for better improved decisions that will assist in proper management.

Appropriate technology.

The technology being introduced at the CMPA is consistent with the traditions, capacities and knowledge of the stakeholders. Some of the technology being introduced will enhance enforcement activities and be environmentally sound. A new smart technology is being introduced where we can track all patrol routes, vessels, infractions, and fuel. This new technology will assist in planning enforcement and tracking infractions from poachers.

Sociocultural sustainability.

The project has taken into consideration the stakeholders of the CMPA and their needs. The project will greatly benefit the stakeholder communities in the area through the education and outreach component, the sea-grass project, community researchers, the specialised tour guide seminars and the casitas project. For many years the fishers of this community have been seeking the assistance from the department through projects such as this. Due to the high number of fisher folk and decrease in fishing product they have been seeking other alternatives. The project will not only assist but enhance the working relationship of the department with its stakeholders. The project will also provide many needed jobs to the local stakeholders. The projects do not

discriminate in any way and seeks to benefit women children and men of all ages that are to be engaged through the project activities.

3. PROJECT DEVELOPMENT TABLE

Objective	Expected result	Main Activities	Sub-activities													Performance Indicator	Impact Indicator	Sources of Verification	Supposition on risks	% Execution	
				J	F	M	A	M	J	J	A	S	O	N	D						
Consolidation of the Marine-Coastal Protected Areas (MCPAs) selected in the region of the Project, with conservation and sustainable use of marine and coastal resources secured in the medium term	RESULT 1 - CONSERVATION OF MARINE-COASTAL ECOSYSTEMS.	BS.1.01 Investment in infrastructure.	BS.1.01.01 Twin Cayes Beach erosion study			X	X	X	X								SWCMR has a comprehensive erosion study that will address current issues affecting Twin Cayes	The erosion study successfully addresses erosion issues at twin cayes after implementation of reclamation	Approved document	Marfund revises the document and needs many changes and reclamation cannot begin on schedule, a consultant cannot be found to address the problems needed in the study.	
			BS.1.01.01 containment and reclamation						X	X							Reclamation activities begin by late November	Reclamation activities are in full effect	Land is reclaimed	Weather conditions do not allow for the activities to take place. The approval of the	

Objective	Expected result	Main Activities	Sub-activities													Performance Indicator	Impact Indicator	Sources of Verification	Supposition on risks	% Execution
				J	F	M	A	M	J	J	A	S	O	N	D					
		BS.1.02 Investments in equipment	BS.1.02.01 Outboard 4 stroke engine			X	X	X	X	X							New engine installed on vessel	Presence at the reserve is increased, increased compliance of fisherfolk who use to outrun fisheries staff when conducting illegal activities, Patrol operations occur more smoothly with functioning boat engine	Receipt provided for engine, engine/fuel/daily logs show use, quarterly reports for Marfund/Kfw, and Fisheries Dept.	Government does not approve the budget for the other engine
			BS.1.02.04 Internet		X	X	X	X	X	X	X	X	X	X	X	X	Internet is installed	Increased performance on reports, Response time on reports and research is quicker, more time can be employed at the reserve for enforcement, Can meet deadlines in a timely manner, Less fuel burnt and time on searching for a internet source on the islands Timely monthly report,	Receipts from paying internet bill and attached copies in the monthly reports, and quarterly reports to be handed to fisheries Dept, and Marfund/Kfw	Government does not approve the budget in time to install the internet in July

Objective	Expected result	Main Activities	Sub-activities													Performance Indicator	Impact Indicator	Sources of Verification	Supposition risks	% Execution	
				J	F	M	A	M	J	J	A	S	O	N	D						
			BS.1.02.04 Staff Uniforms			X											staff conduct patrols in full uniforms	staff in uniforms increase compliance from fisherfolk and tourist due to professional look	receipts, photos in monthly reports	Government budget is not approved in time for all the uniforms to be purchased	
		BS.1.04 Surveillance and Control	BS.1.04.03 Enforcement and surveillance activities	X	X	X	X	X	X	X	X	X	X	X	X	X	patrol logs indicate patrols carried out in a daily basis at least two times per day	Decrease in number of infractions, Increase in number of patrols in logs, Decrease in number of warnings, and arrest	Patrol logs, daily logs, fuel logs, quarterly and monthly reports to fisheries Dept, and Marfund/Kfw	high staff turnover,	
		BS.1.05 Support for the implementation of assessment and monitoring systems	BS.1.05.01 Ground truthing for mangrove cover and marine grasslands in SWCMR					X									Baseline data collected and Data is sent to Marfund	Data will be used to compare and contrast from the beginning of the project until the end of the project the difference.	Biological Monthly, quarterly report show data	Project begins on projected timeline and no bureaucratic delays from the governments behalf	

Objective	Expected result	Main Activities	Sub-activities													Performance Indicator	Impact Indicator	Sources of Verification	Supposition on risks	% Execution
				J	F	M	A	M	J	J	A	S	O	N	D					
			BS. 1.05.01 Generation of a baseline of mangrove cover and marine grassland in the five MCPAs					X	X											
			BS.1.05.06 Monitoring species of commercial importance												X	Data collected in December	Data will be used to compare and contrast on a yearly basis the if an increase or decrease in number of the species is recorded and mitigation/managment measures are taken to ensure the survival of the species	Quarterly reports include data collected on dives for the Department and Marfund/Kfw	Weather conditions are not appropriate to conduct surveys, funding is not received to be able to get sufficient fuel to conduct surveys.	
			BS.1.05.06 Monitoring of Reef Health						X	X	X	X			Reef monitoring conducted	Data will be used to compare and contrast on a yearly basis the if an increase or decrease in number of the species is recorded and mitigation/managment measures are taken to ensure the survival of the species.	Patrol logs, daily logs, fuel logs, quarterly and monthly reports to fisheries Dept, and Marfund/Kfw	No staff turnover, weather conditions are good, funding received to conduct surveys on time.		

Objective	Expected result	Main Activities	Sub-activities													Performance Indicator	Impact Indicator	Sources of Verification	Supposition on risks	% Execution	
				J	F	M	A	M	J	J	A	S	O	N	D						
			BS.1.05.07 Monitoring of water quality and key parameters.								X						Data collected	Key parameters are observed and over time management decisions are made with comparison of data over the years as to water quality.	Patrol logs, daily logs, fuel logs, quarterly and monthly reports to fisheries Dept, and Marfund/Kf w	equipment is not bought in time, budget not approved in time	
		BS.1.06 Protection of fragile ecosystem	BS.1.06.01 Placement and maintenance of Mooring buoys and arrays														Vessels are using mooring buoys	The sea grass beds are protected from anchors of boats as the buoys are used	Photographs of vessels using buoys in report, Patrol logs, daily logs, quarterly and monthly reports to fisheries Dept, and Marfund/Kf w	Funds are approved on-time	
			BS.1.06.02 Placement and maintenance of Demarcation buoys and arrays															buoys are placed	less infractions in replenishment zones	Photographs in monthly report	Aquatic bill not approved

