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SUB REGIONAL PROJECT ON THE NORTH BRAZIL SHELF LARGE MARINE ECOSYSTEM

Project document

TABLE OF CONTENTS

1. GLOSSARY 3
2. PROJECT SUMMARY 5
3. BACKGROUND AND JUSTIFICATION / SITUATION ANALYSIS 8
The North Brazil Shelf Large Marine Ecosystem 8
The Republic of Suriname 8
The Republic of Guyana 10
The Republic of Trinidad and Tobago 11
Reducing Marine Pollution in the North Brazil Shelf Large Marine Ecosystem 12
Collaborating Regional Initiatives 13
CLME+ Subproject on EAF for the Shrimp and Groundfish Fishery in the NBSLME 13
WWF Guianas Marine Spatial Planning Initiative 14
CI Mangrove Restoration Project 16
4. PROJECT OBJECTIVES 17
5. PROJECT DESCRIPTION 18
Strategic Actions 18
Project Implementation Schedule 22
Project Outcomes / Outputs 23
6. DETAILED WORKPLAN 25
Project Activities and Expenditure 25
Local-National Project Partners / Stakeholders 30
Project Coordination 30
Lead Implementing Organization / National Project Coordinators 30
7. BUDGET SUMMARY 31
8. REPORTING 32
9. REFERENCES 33

1. GLOSSARY

ADK	Anton de Kom University
AMEP	Assessment & Management of Environmental Pollution
A & E	Awareness and Education
BRDs	Bycatch Reduction Devices
CBD	Convention on Biological Diversity
CBO	Community-based Organization
CEP	Caribbean Environment Programme
CERMES	Centre for Resource Management and Environmental Studies
CI	Conservation International
CLME+	Caribbean Large Marine Ecosystem Project
CPUE	Catch Per Unit Effort
CRFM	Caribbean Regional Fisheries Mechanism
DNA	Deoxyribose Nucleic Acid
DOF	Department of Fisheries
EAF	Ecosystem Approach to Fisheries
EBM	Ecosystem Based Management
EEZ	Exclusive Economic Zone
EPA	Environmental Protection Agency (Guyana)
EU	European Union
FAO	Food and Agriculture Organization
GEAF	Governance Effectivenes Assessment Framework
GEF	Global Environment Facility
GHFS	Green Heritage Fund Suriname
GIS	Geographic Information System
GMCS	Guyana Marine Conservation Society
GPS	Global Positioning System
ICZM	Integrated Coastal Zone Management
IDB	Inter-American Development Bank
IMA	Institute of Marine Affairs
IUU	Illegal, Unreported and Unregulated fishing
MMAs	Marine Managed Areas
MPAs	Marine Protected Areas
MSC	Marine Stewardship Council
MSP	Marine Spatial Planning
MUMA	Multiple Use Management Area
NBSLME	North Brazil Shelf Large Marine Ecosystem
NCD	Nature Conservation Division of the Suriname Forest Service
NFP	National Focal Point
NGO	Non-Governmental Organization
NIC	National Intersectoral Committee
PAC	Protected Areas Commission (Guyana)
RAMSAR	Convention on Wetlands of International Importance
S&G	Shrimp and Groundfish
SOCAR	State of the Convention Area Report *for the Wider Caribbean region*
SPAW	Special Protected Areas and Wildlife
TEDs	Turtle Excluder Devices

UNEP	United Nations Environment Programme
UWI	University of the West Indies
VMS	Vessel Monitoring System
WECAFC	West Central Atlantic Fishery Commission
WG	Working group
WWF	World Wildlife Fund

SUB REGIONAL PROJECT ON THE NBSLME

2.PROJECT SUMMARY

Goal

Strengthening Ecosystem Based Management Frameworks and Ocean Governance in the North Brazil Shelf Large Marine Ecosystem.

Scope

This project seeks to develop and test various governance arrangements to enable effective ecosystem based management (EBM) of mangroves and wetlands. It will do this in the context of multilevel (local to regional) governance arrangements that will be developed via a series of interactive, focused, multi-stakeholder consultations, and the implementation of community-based conservation interventions. These interventions will be designed to mitigate pollution and their impacts within coastal mangroves and wetlands within the North Brazil Shelf Large Marine Ecosystem (NBSLME). The project will implement at least one (1) mangrove restoration/rehabilitation/protection and pollution abatement/prevention project in each of four (4) countries of the NBSLME:Trinidad and Tobago, Guyana, Suriname and Brazil. In so doing, this project will support national and regional coastal management programmes, assist participating countries in implementation of the SPAW (Specially Protected Areas and Wildlife) and LBS (Land Based Sources of marine Pollution) Protocols, and meet their international obligations with regards to RAMSAR and CBD(Convention on Biological Diversity). Through the establishment of robust monitoring and evaluation protocols, project successes and shortfalls will be well documented and analyzed thus enabling upgrading and replication of interventions in pollution abatement and coastal habitat restoration throughout the NBSLME.

Linkages with other national and regional initiatives

The proposed project will collaborate with several significant initiatives towards marine EBM that are ongoing or planned in the NBSLME. In the first instance, linkages will be established with other CLME+ Project activities/outputs, including those delegated to CEP: e.g. development of a Regional Action Plan for the Protection and Restoration of Key Habitats, and for Pollution abatement, and associated Investment Plan (CEP); development of SOCAR/SOMEE (CEP/CLME+ PCU). Secondly, project activities will be closely coordinated with the WWF Marine Spatial Planning Initiative that commenced in January 2017 in Guyana and Suriname, and the CI Mangrove Restoration Project, also planned for commencement in August 2017. This proposal seeks to strengthen and complement the planned WWF and CI stakeholder dialogues and mapping activities so that pollution, fisheries and habitat degradation hotspots associated with mangroves and wetlands may be identified and mapped, and actions to reduce pollution levels and impacts, and to restore affected ecosystems can be determined.

Under this project CI will focus on the assessment of forest cover in various mangroves throughout the northern Brazil, Guyana and Suriname coastal region. Data will also be collected on socio and economic activities ongoing in these mangroves. In order to enable effective community participation CI also seeks to engage in stakeholder consultations and has expressed a willingness thus, to

collaborate in the organizing and hosting of stakeholder meetings as the target groups are expected to be the same. In particular, CI has agreed to orient its assessment towards estimating fishery recruitment exports from mangroves to coastal small-scale fisheries and offshore commercial fisheries. This will help to underscore the value of mangroves beyond immediately adjacent areas.

By bringing government experts, NGOs, CBOs and other stakeholder groups together, it is anticipated that real solutions to mangrove degradation may be identified and addressed with assistance from other ongoing and newly planned initiatives (GEF or non-GEF), so that through the combination of resources a more comprehensive set of measures may be identified and implemented. Additional complimentary activities within the framework of the CLME+ Project will take place with Caribbean Natural Resources Institute (CANARI) in the development of the Community Strategic Action programme (C SAP) and CERMES to support the Monitoring and Evaluation of the Governance Effective Assessment Framework (GEAF).

The project will further partner with the CLME+ Shrimp and Groundfish (S&G) Pilot to be implemented by FAO with a start date of April 2017. Under the S&G Pilot the now dormant FAO WECAFC S&G WG (working group) will be revived. This will provide an opportunity for the work to be done in this project, together with the work to be done by CI and WWF described above to be taken up by a regional level technical body with a mandate for an EA to the interconnected SSF and commercial fisheries of the region. It is anticipated that the deliberations of and advice generated by the WG will be oriented towards EBM. It is further possible that the S&G Pilot will go beyond reviving a regional technical WG to initiating a regional ministerial forum where decisions can be taken regarding EBM for the NBSLME.

Finally, the project will collaborate with the appropriate agencies in French Guiana in an effort to learn from relevant activities and to share project findings. While French Guiana is not GEF eligible, every effort will be made to liaise with them to align activities that they may be undertaking with their own resources.

In summary this proposed project will seek to

- ✓ Promote the active participation of civil society (coastal residents, farmers, fisheries officers and fisherfolk, educators, biologists, student volunteers, researchers, conservation and development NGOs) together with Government Organizations in the identification of pollution hotspots within the region, whilst partnering with three regional initiatives;
- ✓ Support a community based assessment of targeted sites;
- ✓ Facilitate the defining of governance arrangements for the pilot sites, stipulating roles and responsibilities and mechanisms for engagement of the different relevant sectors (environment, fisheries, forestry, agriculture, planning/finances, law enforcement, rural development, education, and health);
- ✓ Guide, using an EBM approach, actions at pilot sites to address impacts and mitigate LBS;
- ✓ Facilitate the development of mechanisms for (a) vertical linkages between the local pilot initiatives and national level processes for marine EBM (possibly by supporting the strengthening of NICs) (b) vertical linkages between national level processes for EBM (ideally NICs) and regional level processes for marine EBM (most likely the regional WG developed in the S&G pilot, but also WECAFC and CRFM)

- ✓ Undertake a review of the mangrove project outcomes and the governance arrangements that were applied to evaluate appropriateness and replicability within the NBSLME.

Implementing Agencies

The project will be spearheaded jointly by the following organizations:

Trinidad and Tobago
Institute of Marine Affairs,
The University of the West Indies, St Augustine Campus
Council of Presidents of the Environment (COPE)
Department of Fisheries in the Ministry of Agriculture, Lands and Fisheries

Guyana
Protected Areas Commission, Ministry of Natural Resources
Environmental Protection Agency
Mangrove Department in the National Agricultural Research & Extension Institute (NAREI)
WWF Guianas (Guyana) Office
Department of Fisheries in the Ministry of Agriculture
Department of Natural Sciences, University of Guyana
Guyana Marine Conservation Society (GMCS)

Suriname
Nature Conservation Division of the Suriname Forest Service
Maritime Authority Suriname
WWF Guianas Suriname Office
Department of Fisheries in the Ministry of Agriculture, Animal Husbandry and Fisheries.
Anton de Kom University (ADK)
Green Heritage Fund Suriname (GHFS)

Brazil

This will be finalized during the Project Inception Workshop and Launch.

a. Project location: Sub-region within the North Brazil Shelf (Trinidad, Guyana, Suriname and Brazil coastal and inshore regions)

b. Proposed starting date: 01 July 2017

c. Project duration: 18 months

d. Amount requested from UNEP(US$): 277,700

e. Government(s) inputs: (US$) 100,000 (in kind)

f. Implementing agent inputs(US$) 100,000 (in kind)

g. Other donor inputs CI , WWF

3.BACKGROUND AND JUSTIFICATION / SITUATION ANALYSIS

The North Brazil Shelf Large Marine Ecosystem

This is comprised of the marine ecosystems of five countries, notably Brazil, French Guiana, Suriname, Guyana and Trinidad and Tobago. This project intends to focus on 4 of the 5 countries. However, there are several opportunities for participation of French Guiana(FG) either in stakeholder meetings and or application of proposed actions to mangroves within FG utilizing French funding.

The Republic of Suriname

The country is located between 2° and 6° North latitude and 54° and 58° West latitude on the Northeastern coast of South America. It borders on the Atlantic Ocean to the North, the Republic of Guyana to the West, Brazil to the South, and French Guiana to the East.

Suriname's marine area is subdivided into four zones; the first three are part of the Continental Sea, a shallow area that used to be dry land during Ice Age glacial periods:

- ✓ the Continental Inner or Brown-water Zone: the water reaches a depth of about 30 m and is opaque brown due to the heavy load of mud; along the coast, there are extensive mud banks which move slowly to the west, and sand banks that either also move along or have fixed locations near the mouths of major rivers;
- ✓ the Continental Mid or Green-water Zone: the water is between 30 and 60 m deep and is still a bit brown, but much less so than in the previous zone; the water has a greenish tint due to the abundance of algae and is thus biologically very productive;
- ✓ the Continental Outer or Blue-water Zone: the water is between 60 and 100 m deep and is clear, not muddy; the water has a blue tint due to the limited presence of algae and the absence of suspended solids, and is biologically less productive than the previous zone;

- ✓ the Deep Sea Blue-water Zone: the water is blue and deeper than in the previous zone; this zone starts where the continental slope begins to drop off (this slope starts at about 100 m and levels off at several 1000 m below the surface of the sea).[1]

Marine ecosystems

The marine, near shore ecosystems of the continental shelf of Suriname are strongly influenced by the East-West directed Guiana Current, an extension of the North Equatorial Current off Brazil, and the outflow of fresh, sediment-laden water of the Amazon River, the so-called Amazon plume, a 5-10 m thick layer of water of low salinity (25-35 ‰) separated from underlying oceanic water (35 ‰) by a sharp, 5 m halocline (Lentz & Limeburner 1995), which creates a shallow surface mixed layer. In effect, the Amazon plume creates high-suspended-sediment, low-salinity, estuarine conditions in the shallow, near-shore waters off Suriname (e.g. Longhurst & Pauly 1987). Each year approximately 1.5 x 10^8 tons of Amazonian sediments are transported in suspension with the Guiana Current and about 1 x 10^8 tons move along the coast of the Guianas in the form of mud banks (Eisma et al. 1991, DHL 1962). [2]

A special habitat that is known to occur off the coast of Suriname is that of old coral reefs. These reefs occur at about 100 m below the surface of the sea, at the transition of the Continental and Deep Sea; the reefs are fossil structures formed during Ice Age glacial periods.

Threats

A potential threat to the marine ecosystem is the expansion of oil exploration concession. Currently, the most important *threats* to marine biodiversity in Suriname are considered to be:

- ✓ over-exploitation / over-fishing,
- ✓ pollution (both land based and marine, industrial and agrochemical, sewage, plastics, oil),
- ✓ climate change (e.g. acidification); and
- ✓ habitat change (e.g. deforestation in coastal plains and wetlands, dredging, bottom trawling).

Challenges to managing its marine ecosystem:

- ✓ Deficiencies in systemic and institutional capacity
- ✓ Limited baseline information on the biodiversity of the marine area
- ✓ Limited consultations and hence very little monitoring: hardly any information on ecosystem trends
- ✓ Coastal communities continue to be unsatisfied with the legal status of their communal land rights;
- ✓ Limited zoning and land use planning.

Mangroves

Mangroves in Suriname cover an estimated 100,000 ha, dominated by dense populations of *Avicennia germinans*, (parwa) along the coastline, with other species dominating along tidal creeks (*Laguncularia racemosa*) and riverbanks (*Rhizophora* spp.). These mangroves provide several major

[1]Ministry of Labour, Technological Development and Environment (ATM), 2012: The Fourth National Report to the Convention on Biological Diversity

[2],Jan Mol 2011, Environmental and Social Impact Assessment for the *Staatsolie* (State Oil Company) River Seismic Project

ecological functions and services, including shoreline protection from erosion, sustenance of coastal fisheries and as habitat for millions of migratory shorebirds, breeding waterbirds and other wildlife. While two-thirds of Suriname's mangroves and other coastal wetlands are protected or managed for wise use, and various environmental laws and regulations are in place, the management of mangrove resources in Suriname is facing a number of major problems, such as habitat destruction and conversion, coastal erosion and sea level rise, hydrological disturbances and various other threats and challenges. Urgent, high priority problems that require immediate action include the expansion of urban areas into mangroves north of Paramaribo, severe coastal erosion at Weg naar Zee and Coronie, and the lack of awareness on importance of mangroves. Intermediate priority problems that require a response at the medium-term include the limited management capacity (protected areas and MUMA's – multi-use management areas), coastal erosion in other districts (maintenance of coastal defence structures), and hydrological disturbances that reduce vitality of mangroves (Coronie, Paramaribo-Wanica).

The Republic of Guyana

Coastal Ecosystems

Guyana is located between the estuaries of the Amazon and Orinoco Rivers and the movement of coastal currents and shoals impacts on the siltation of outfalls and the profile of the coastline. The coastal zone is considered one of the most important natural regions in the country. Over 90% of the population as well as economic and administrative activities are concentrated in this region. Much of the original vegetation of the coast has been removed. The natural landscape of the coastal zone is characterized by cultivated fields and secondary degraded vegetation The coastal zone is characterized by extensive inter-tidal mudflats, intersected by narrow sand and shell beaches, and major mangrove swamps that are bordered inland by shallow saline and brackish lagoons and swamps. The coastal ecosystem is renowned for its beaches that support the nesting and foraging grounds of migratory sea turtles and birds. Other sand and shell beaches along the wider coastal zone exist in a less pristine state primarily as a consequence of anthropogenic pressures. Mangrove forests are found in fringe communities as a band along the coast, interspersed by sandy beaches in a few places, as well as in small patches along the river mouths and rivers in proximity to the sea. Mangroves form unique ecological niches and habitats fora variety of marine and terrestrial animals.

Marine Ecosystems

Guyana's marine ecosystem is part of the North Brazil Large Marine Ecosystem and is considered a highly productive ecosystem with moderately diverse food webs. The high productivity of marine habitats of the Guianas is related to the high diversity and abundance of marine species it contains. Additionally, many river plumes including that of the Amazon River and other major rivers, such as the Corentyne and Essequibo Rivers enrich the marine habitats along the coast of the Guianas with nutrients. The entire coastal zone of Guyana lies below sea level and is protected by 370 km of sea defences, 80km of which are defensive structures that range from earthen banks to concrete walls, the rest being natural / mangroves and mudflats. The vulnerability of the coastal zone is made more acute by predictions of a rise in mean sea level driven by climate change.

Mangroves

Mangroves play a vital role in defending Guyana's coastline from the rising sea level. This is particularly important for poorer communities which are most vulnerable to natural disasters. As the majority of Guyana's population live within the naturally low-lying flood prone areas, almost the entire population, more or less relies on mangroves for protection. Given the importance of mangroves to Guyana, ensuring their protection and conservation is a priority. Guyana has developed a Sea and River Defence Policy, which calls for alternative solutions to the traditional 'hard structures'. This includes the restoration of mangroves for effective flood defense, and to protect environmental resources. The construction and maintenance of man-made sea defense structures averages US$5 million per one km of Guyana's 360 km of sea defenses. Research also shows that in natural disasters (storms, tsunamis etc.) that communities with considerably more mangroves have reduced impacts. Making shorter term investments in restoring mangroves along with longer term monitoring will ultimately be more cost-effective and beneficial compared to other alternatives.

Of special concern: The mangrove belt has been severely depleted apparently from heavy damage by human use, rise in sea level and increased wave force. The fringe of natural mangrove along the coast has been reduced to tens of meters wide or zero for some places.

The Republic of Trinidad and Tobago

Coastal ecosystems
Trinidad and Tobago is an archipelagic State, situated between 100 2' and 11º 12' north latitude, and 600 30' and 61º 56' west longitude. The country consists of the two (2) main islands, Trinidad and Tobago, and 21 smaller islands and islets. Trinidad is the larger of the two islands, with an area of approximately 4,827 km^2 while Tobago has an area of 303 km^2. The Exclusive Economic Zone (EEZ) of the country covers an area of seventy-five thousand square kilometres (75,000 km^2) – almost fifteen times as large as the land area of the islands combined. Trinidad and Tobago boasts a rich biota relative to its size. The country's rich biodiversity is directly attributable (though not exclusively) to its geological history and location to the South American continent.

Mangroves
Mangrove forests occupy a total area of 9,146.4 ha (91.46 km^2) in Trinidad and 229.9 ha (2.29 km^2) in Tobago. Within several wetland areas such as the Nariva and Caroni Swamps, mangrove acreage is reported to have decreased due to urbanisation. In addition, mangroves are also observed to be moving inland and encroaching on some freshwater wetland communities because of inland salt water intrusion. Wetlands are an integral part of the natural environment of Trinidad and Tobago. They have played, and continue to play, an important role in the social history and economy. With proper management it is likely that mangroves will continue to contribute to the country's social and economic development. A wide range of resources is derived from the State's swamps and marshes. These provide employment and income to several persons particularly at the level of the traditional subsistence economies and village communities. Directly exploitable resources (although regulated) include timber, charcoal, tannins, honey, medicinal plants, fish, oysters, mussels, conch and shrimp. The hunting of ducks and other waterfowl centres on wetland areas, as does much of the sport fishing.

Wetlands support commercial marine fisheries indirectly by providing nursery habitat for juveniles. In addition, the fringing mangroves especially help support coral reef ecosystems. Some of the nation's wetlands play important roles in floodwater retention and in groundwater aquifer recharge, which have subsidiary economical benefits. Despite their obvious value, more than 50% of the original wetland

area of Trinidad and Tobago has disappeared. The resources of the surviving wetlands are severely degraded, through misuse and over exploitation, and there is conspicuous conflict of interest among the wide variety of resource users. The results of the poor or absent management are declines in the quality and productivity of the wetlands and deterioration in living standards of the resource users and their families. Notably, the manner in which land is utilized has affected neighbouring wetlands. The reclamation of land in the Nariva Swamp for rice cultivation for example has affected species diversity in the area. Similar observations have been recorded in other coastal areas along the agriculture belt of the country.

Reducing Marine Pollution in the North Brazil Shelf Large Marine Ecosystem

The major sources of coastal and marine pollution originating from the land vary from country to country. The nature and intensity of urbanization, the sizes of the human populations living near to and depending on the mangrove for sustenance, the state and type of industry or agriculture are but a few of the factors contributing to each country's unique pollution and management problems. Within the region it is observed that runoff from the land is discharged either directly into the sea, or enters the coastal waters through rivers and across wetlands.

While in the target countries, an assessment of specific impacts of individual pollution types has not been comprehensively assessed, data from State of Environment and other associated reports point to negative impacts on both coastal and marine resources and on human health from a range of land-based activities. Solid Waste including Plastics, Domestic Wastewater or Sewage, Agrochemical run off, Sedimentation, Mining and other Industrial Wastes, and Oil Pollution among others have been reported to cause fish kills, impairment of the use of the area for recreational purposes and degradation of coastal and marine ecosystems.

In order to mitigate and control the impact of pollution on coastal and marine resources, it is essential that the type and load of pollutants be identified and where the extent and severity of the associated impacts described and/or quantified. This involves determination of the sources and their location, and the volume and concentration of the pollutants. Point sources of pollution are sources that can be identified to one location, such as industrial and sewage treatment plants. Such sources of pollution, though easy to identify, account only for a fraction of the land-based contributors of pollution. A significant amount of pollution occurs from non-point sources which are harder to identify, and include run-off and overflow discharges from urban and rural areas, as well as runoff from forest and agriculture.

Addressing pollution issues is not an easy task especially when coastal areas are remote and extensive, and human and other resources are limited. Pollution sources can be located relatively far away from coastal areas and still have an impact. Pollutants from sources and activities within a drainage area can be carried to the coast by rivers. Identifying and addressing all contributors (point and non-point sources) to a river's pollution load will require significant stakeholder interaction and cooperation. Inter-agency collaboration will also be integral and should be supported by a system of regulations, policy instruments and institutional frameworks. Public awareness and general support is also vital to the process of pollution abatement and ecosystem recovery. Essential to the process will be the assessment of results from the national projects against: (1) their robustness in the face of (uncertainty related to) climate change; and/or (2) their contributions to enhanced resilience of the socio-ecological

system in the face of climate change. Careful consideration will also be given to gender equity in the design and application of interventions at all stages of the project.

Collaborating Regional Initiatives

As indicated, this project proposal will be implemented in collaboration with at least three other regional projects:
1.FAO EAF Shrimp and Ground Fishery Project in the NBSLME
2. WWF Marine Spatial and Oceans Governance Project
3. CI Mangrove Restoration Project

An analysis will also take place on work on land-based sources of pollution that may be ongoing through the Guianas Shield Facility to identify opportunities for further collaboration.

CLME+ Subproject on EAF for the Shrimp and Groundfish Fishery in the NBSLME

Main Output of the project is:

Well-planned, progressive transition to an ecosystem approach for the shrimp and groundfish fisheries of the NBSLME
This output can be linked to the following Strategies of the CLME$^+$ SAP:
SAP Strategy 6: implement EBM/EAF of the Guianas-Brazil continental shelf with special reference to the shrimp and groundfish fishery
SAP Strategy 1: enhance the regional governance arrangements for the protection of the marine environment

The geographic scope of the Sub-Project corresponds to the North Brazil Shelf LME and the CLME$^+$ countries that participate in the shrimp & groundfish fisheries in this LME, more specifically: Trinidad & Tobago, Venezuela, Guyana, Suriname, French Guiana and Brazil. Through the dissemination of best practices & lessons learnt, the Sub-Project will also be beneficial to (a) other countries with transboundary shelf/shrimp & groundfish fisheries in the CLME$^+$ region, and (b) other CLME$^+$ fisheries (all CLME$^+$ States) aiming at adopting the EAF approach.

The Objectives of the Sub- Project are:

- ✓ Optimize the transboundary coordination and collaboration for the sustainable management of shrimp & groundfish stocks on the NBSLME, to foster long-term human well-being of direct and indirect stakeholders
- ✓ Full policy cycle implementation at the sub-regional (NBSLME) level, through the development, approval and initiation of implementation of a sub-regional shrimp and groundfish fisheries management plan
- ✓ Full policy cycle implementation at the national level, through the development, approval and initiation of implementation of national fisheries management plans (with special attention to IUU and safety at sea, and enhanced stakeholder participation/contributions in the transition to EAF)
- ✓ Capture and disseminate best practices and lessons learnt, for the replication and up-scaling of the EAF approach in other CLME$^+$fisheries

The activities, outputs and outcomes that will be produced to contribute to these objectives include:

- ✓ Formal adoption of the Governance Effectiveness Assessment Framework (GEAF), for the long-term planning and M&E of progress towards stock/ecosystem and socio-economic targets for the fishery, by WECAFC Session 16
- ✓ Sub-regional arrangement for participatory governance and management of the shrimp and ground fish fisheries, including a decision-making capacity for policy formulation and management
- ✓ Sub-regional data policy to support EAF management of the fishery
- ✓ Operational sub-regional data and information repository on fisheries and their associated ecosystems in the NBSLME
- ✓ Establishing an enhanced baseline on stock/ecosystem and socio-economic stressors in the NBSLME, with special attention to IUU fishing
- ✓ Development and approval of plans and agreements, at the sub-regional and national levels, to support actions against Illegal, Unreported and Unregulated (IUU) fishing in the shrimp & groundfish fisheries (building upon the results from Output 2.1)
- ✓ Participatory development and adoption of a Regional Management Plan for the shrimp and groundfish resources of the North Brazil Shelf LME, and of national implementation plans
- ✓ Enhanced MCS measures to combat Illegal, Unreported and Unregulated (IUU) fisheries, at sub-regional and national levels:
    - the signing of MoUs specific to actions to address IUU between States
    - The development and approval of MCS protocols
    - Preparation of training and inspection manuals that address aspects of MCS and establishment of training programmes for inspectors

WWF Guianas Marine Spatial Planning Initiative

This project proposal is intended to build on a recently commenced WWF, EU funded initiative that will seek to, amongst other things, **catalyse enhanced marine spatial planning (MSP) processes which will provide an ecosystem based framework for managing activities in the marine environment.**

Consultations with WWF Guianas country managers have produced consensus for collaboration; with the CLME+ project supporting components that are inadequately addressed in the WWF project. Stakeholders in Guyana, Suriname and Trinidad welcomed the possibility of mapping marine resources and designing regional management strategies to the extentnot possible with the limited funding under the CLME+ project.

The WWF Marine Spatial Planning Project has as its ultimate goal:
By 2020, enhanced *knowledge* of the marine environment, increased *capacity* and a *collaborative process with ocean users* leads to significant progress against Aichi targets: i) at least 10% of Suriname/Guyana Exclusive Economic Zone (EEZ) *designated for MPA conservation status*; ii) evidence of *informed spatial management* practices being applied outside MPAs across the EEZ.
The Targets to be achieved under this 4 year, 1 million Euro, EU Funded project to be undertaken in Guyana and Suriname, include:

Capacity Building

1.1 Convention on Biological Diversity (CBD) Gap Analysis & Legislative Review A 'CBD gap analysis' will be revisited to clearly define the gap between current progress in Suriname and Guyana and 2020 CBD targets.
1.2 Participatory 3D Modelling (P3DM). P3DM will be performed for the entire Exclusive Economic Zone of Guyana and Suriname, producing two unique 3D models of approximately 5 by 6 meters as visual data repositories, one for each country.
1.3 Development of a GIS Marine Atlas. Once 3D models are completed, a series of processes will be performed to develop a *living GIS Marine Atlas* which will integrate all local knowledge, published/unpublished and satellite derived data. WWF will develop terms of reference to secure external support for this process. The atlas will feature numerous layers of information which can continuously be updated.

Engagement of Stakeholders Ocean users are engaged, and have adequate capacity /resources to participate fairly and fully.
2.1 Stakeholder analysis and Equivalence-Gap Analysis for IP and Gender. Stakeholder analysis will be revisited to ensure actors whose interests should be taken into account when developing or implementing marine spatial plans have been accurately identified.
2.2 Capacity needs assessment and capacity building /training. GHFS together with NCD and PAC to identify gaps in capacity (both from a technical, and engagement standpoint), and also highlight existing and latent capacity.
2.3 Engagement platform - A number of structured engagement mechanisms are planned to ensure participation of key target groups in a systematic and coordinated way.

Protect Sites: At least 2,654,000 ha (10% of EEZ SU/GU) is designated as an MPA.
3.1 'quick wins' (high biodiv/low use):
3.2 MPA Pilot site designated, lessons extracted.
3.3 MPA proposals and designations.

'*Manage' - MSP***: *Zonation and management of human activities outside MPAs.*
4.1 Environmental sensitivity index maps:
4.2 Oil and gas national guidelines.
4.3 Zonation recommendations.

Learn and Communicate': *Ensure best MPA practices are adopted, maximise learning through networking with relevant projects and communicate/magnify results.*
5.1 Learning. To learn from each other's approaches PAC and NCD will make exchange visits to participate in stakeholder engagement activities in Guyana and Suriname.
5.2 Communications & Visibility. A number of communications and visibility outputs are generated. After the project launch, GHFS, in cooperation with NCD and PAC, will develop and implement strategic communication, advocacy, and negotiation plans for Suriname and Guyana.

CI Mangrove Restoration Project

The objective of the CI project proposal is *"To create the multi-disciplinary information base, regional coordination mechanism and multi-sectoral consensus required to implement elements of the CLME+ Strategic Action Plan pertaining to the mangroves that most directly underpin human wellbeing in the North Brazil Shelf LME."*The project seeks to achieve 2 main outcomes. However, nothing is yet confirmed until further dialogue with the Governments of the various countries of the NBSLME.

Outcome 1.1 The biophysical, social and economic information most relevant to the conservation and sustainable use of mangroves in Guyana, Suriname and Brazil (Amapa) is obtained from synthesizing results of existing work and undertaking new research where gaps exist as the technical foundation for building an NBS Integrated Coastal Management Plan for mangroves .

Specific outputs include
Output 1.1.1 Updated national mangrove cover maps showing extent of loss since 1980 baseline.

Output 1.1.2 Valuation of mangrove ecosystem services within each country of the NBSLME.

Output 1.1.3 Threat assessments for mangroves for the countries of the NBSLME.

Output 1.1.4 Policy analyses for each country that identify spatial management, use regulations and tenure arrangements relating to mangroves.

Output 1.1.5 Mapping and other relevant outputs from the project shared with the larger regional process of CLME+.

Outcome 1.2 Broad-based multi-sectoral consensus is reached regarding how to manage Guyana, Suriname and Brazil's (Amapa) mangrove in a coordinated fashion and with the goal of achieving progress on six Aichi Targets, UN Sustainable Development Goals (SDGs) and a zero net loss rate by 2030 and contributing to the achievement of the relevant SDGs and Aichi Targets.

Specific outputs include

Outputs 1.2.1 Intergovernmental regional coordination body (as mandated in the CLME+ SAP) is created and operational.

Outputs 1.2.2 French Guiana becomes a participating member in the NBS Mangroves Regional Coordination Body).

Output 1.2.3 The regional coordination body agrees on internal operational arrangements, a workplan and a timeline to produce the information base required for generating a framework for how to generate a three-country ICM plan for mangroves and share the mapping and other relevant outputs with complementary programs such as the CLME+ regional process.

Output 1.2.4 A framework charting the scope, content, process and institutional arrangements required for creating a transboundary Integrated Coastal Management (ICM) plan produced by 2021.

4. PROJECT OBJECTIVES

Site: the entire NBSLME

Objective 1:
To establish an inter-sectoral mechanism that links local national and regional levels for dialogue and management planning on marine EBM within the NBSLME.

Objective 2:
To define EBM approaches and ocean governance arrangements most effective in the mitigation of pollution, restoration and/or rehabilitation of degraded areas and/or preventative actions in four coastal mangroves wetlands within the NBSLME.

Objective 3:
To effectively reduce pollution levels and undertake ecosystem rehabilitation in coastal mangroves in a minimum of four countries in the NBSLME, through the application and testing of EBM mechanisms and proposed ocean governance arrangements and the sharing of lessons learnt and local, national and regional levels.

This project will contribute to the targets of the CLME+sub –project as described under element of O3.3:

- ✓ Develop and test the implementation of a methodology to identify (and where feasible map) marine pollution hotspots[3], and characterize pollution sources and types, and magnitude of (potential) impacts
- ✓ Habitat protection and restoration initiatives that will support enhanced community participation (particularly the participation of women) and management of coastal habitats

In addition, the intended methodologies are closely aligned with approaches utilised under the CLME+ project:

1) Establishment and operationalization of transboundary governance architecture/arrangements and processes, beyond the current baseline situation[4]
2) Ensuring adequate stakeholder involvement
3) Implementation of enhanced, socially just stress-reduction measures

[3]Special attention will be given in this context to matters relating to pollution that are known to affect fisheries and fish nursery habitats

[4]Consideration will be given to the selection of pilot sites for this Sub-Project where this baseline is relatively advanced, so that more attention can be given to the actual implementation of stress reduction measures

5. PROJECT DESCRIPTION

Strategic Actions

In order for the 3 objectives to be achieved, the project will be comprised of a number of strategic actions or strategies:

Towards achieving Objective 1

Strategy 1.1:*Organization of Stakeholder Meetings and Identification of Pollution Hotspots in coastal areas*

The Ecosystem Approach: EBM is an important concept that can be applied to large, diverse areas encompassing an array of interactions between species, ecosystem components, and humans. Where ecosystems are facing environmental threats or are in need of restoration, a holistic approach is proposed that combines environmental knowledge and co-ordination with governing agencies to initiate, sustain and enforce habitat and species protection. In seeking to conserve wetlands of biological and economic importance and to identify best practices for management, an EBM approach will be utilized. An important step in identifying the actions to be undertaken towards EBM is the holding of broad-based stakeholder meetings. These are essential if all the parameters related to the ecosystem functions are to be identified, correctly defined and appropriately addressed. Determining who the stakeholders are and so who should be invited to participate in management planning is not always easy. This is especially challenging when there are grey areas with regards to mandates, amongst Government institutions, the private sector, community-based organizations and NGOs. In this component the lead agencies will be expected to develop and or update existing stakeholder maps and thus identify, to some level of accuracy, the persons or agencies to be invited to national and regional dialogues.

Stakeholder consultations will be organized in collaboration with the WWF MSP, CI, under its mangrove management project and CLME+ S&G Pilot. Through these consultations, pollution hotspots in Suriname and Guyana will be identified. Through national consultations in Trinidad and Tobago, and in Brazil, which will be funded fully under this project, pollution hotspots will be similarly identified in these countries. Where possible, these stakeholder consultations will be convened in collaboration with other regional initiatives with similar objectives such as are proposed to take place under the CI Project. One of the roles of this project will be to facilitate the participation of stakeholders from Trinidad and Tobago and Brazil, in the regional meetings of WWF MSP to begin mid-2017 and which will occur either in Suriname or Guyana. This will be necessary as Trinidad and Brazil are not part of the WWF Guianas project. In addition, the CI Mangrove Restoration project will be implemented as only in Northern Brazil, Guyana and Suriname. Under this UNDP GEF CLME+ sub-project it is intended to fund the participation of key stakeholders from at least the Republic of Trinidad & Tobago and Brazil at regional meetings. Participation of country representatives at a minimum of 9 national and 3 sub-regional marine spatial mapping meetings are proposed for support during the project timeframe. Participants from French Guiana, where input is considered critical to the process, will be invited to participate at the regional meetings. As part of this component, meetings will first be held with the WWF Guianas and CI teams to review their project workplans and targets and identify the specific areas of collaboration and to fine tune workplans to facilitate the regional consultations. **Towards achieving Objective 2**

Strategy 2.1:*Assessment of Pollution Associated with Coastal Mangroves and Wetlands.*

Through the stakeholder consultations and based on a set of pre-determined criteria, each country will identify one critical mangrove or wetland area for assessment of levels and type of pollution. The sites selection will be fairly representative of mangroves within the country and should offer opportunities for addressing the more common but challenging pollution and habitat degradation issues faced by mangroves in the NBSLME. Understanding the role played by the selected site with regards to contributions to regional species diversity and to local and regional fisheries is therefore essential. Linkages will be closely established with the FAO Sub Project where relevant. Once the sites have been identified, the next phase will be to visit the sites to verify that they meet the criteria, especially with regards to pollution. These visits will also be used to commence the training of community volunteers and possibly students, in the collection, packaging and transportation of water, sediment and vegetation samples to the laboratory. Data collection throughout the region is expected to be similar, however, the actual tests to be conducted will be determined based on the suspected sources of pollution. The data collected will be used to directly guide the development of action plans to mitigate pollution and spearhead habitat restoration. In the assessment of the interventions to reduce, control and/or prevent pollution, consideration will be given to: (1) Overall impacts on the provision of ecosystem goods and services; (2) Extent of reversibility of pollution impacts; (3) Level of risks posed to future development potential for the associated ecosystem goods and services; (4) Trends in the polluting activities - increasing, decreasing etc. and (5) Cost Effectiveness and Sustainability of the proposed pollution abatement measures.

Strategy 2.2:*Developmentof ecosystems-based marine management plans and ocean governance arrangements to address pollution, land degradation and transboundary issues.*

Based on the outcome of pollution and habitat assessments, EBMplans for the assessed marine wetlands and mangroves will be developed with broad-based stakeholder input. These action and management plans will focus on identifying, amongst other things, the necessary legal, and institutional arrangements needed for effective management of the marine wetlands. The management framework(s) proposed will be community-based supported by private and public sectors partnerships and investments, as well as civil society at national and regional levels. The EBM plans will identify the institutional support needed at the national level and the proposed channels for communicating these needs. The EBM will also identify means for securing the long-term provision of essential goods and services from coastal wetlands. This may include the elimination of unsustainable activities such as illegal or over-fishing, halting of habitat degradation and biodiversity losses, elimination of invasive species, and significant reduction of pollution. The ultimate goal of these interventions will be elimination or reduction in poverty and to address in a meaningful way, the plight of women and children living in these areas. The implications of the cross-cutting issue of climate change for successful implementation of the plan will be considered. Ultimately, there should be the over-arching goals of social justice and enhanced human well-being. The intention of conducting communications and awareness activities highlighting the stakeholder consultations and outputs is deliberate to ensure the Objective 2 is realized.

Towards achieving Objective 3

Strategy 3.1:*EBM and Community-based Participation in Habitat Restoration and Protection and Field Testing of Proposed Governance Arrangements.*

This strategy addresses the implementation of conservation measures identified in the EBM plan. It is focused to a large degree on an inter-sectoral but largely community-led approach. Each selected site will be provided with the funds needed to implement the proposed pollution abatement and restoration measures needed to reduce pollution and reverse the various forms of site/habitat degradation. Funds will be provided either in full to local communities for project implementation, or in part, with some funds provided to NGOs, Government or the private sector. Funds will be specifically reserved for actions that reduce or eliminate sources of pollution from coastal wetlands including mangroves, and clearly aid in species recovery and or protection, which facilitate improved habitats and livelihoods, and or empower women in the sustainable use of marine resources.

Whilst using an EBM approach to habitat restoration, success of these pilot initiatives will also depend, to a large extent, on the governance arrangements that are used. It must be remembered that the objective of this project is to assess the effectiveness of various governance arrangements as originally defined by stakeholders during the inception and planning meetings. These governance arrangements will be tested during the implementation of the pilot projects. Ultimately the mangrove management actions are expected to facilitate the elaboration of governance arrangements that include public, private sector, Government, NGO and CBO at multiple levels; local to regional. They will include actions to address all ecosystem functions and will seek to take into consideration environment, social, economic and development concerns.

To ensure linkages with the work undertaken by CANARI as part of the broader UNDP GEF CLME+ project relating to civil society engagement and the development and implementation of the C-SAP, the approach to stakeholder engagement will be guided by the work of CANARI.

Strate*gy 3.2:Site specific technical communications on the Ecosystem Based Management Process defining the step by step actions, strategies and outcomes. Showcasing lessons learnt and recommendations towards regional ocean governance frameworks.*

This strategy will document the various processes, highlight outputs and outcomes and, very importantly, lessons learnt and best practices. Through effective communications, it will be possible to ensure maximum public participation in both the initial mapping of hotspots, data collection and restoration processes. All data, inclusive of pollution hotpots, the location of vulnerable wetlands and mangroves, and the stakeholders participating in the field activities, will have access to suitable arrangements for two-way communication at the community, national, and regional levels. In this way a truly EBM approach can be undertaken and ALL stakeholders will receive equal opportunity to share, become involved and have their concerns and interests represented in the decision making process. Such arrangements must be broad-based to enable efficient outreach to all stakeholders. Community residents, researchers, fishers, government officers, NGOs, industry, educators, farmers and many more stakeholders must have ready access to the consultative process and data arising from consultations and research. All communications between stakeholders and between governance levels must be bidirectional so that stakeholders are fully aware of responses to their concerns and actions. Through the communications arrangements identification of land-based sources of pollution, raising

of awareness and understanding of the benefits of mapping resources, sharing of results from water quality analyses, selection of community –based site restoration actions to mitigate coastal pollution, and discussion on the use of coastal resources that are shared either between different stakeholders or between different political territories, can be achieved. Various media will be employed to effectively communicate with stakeholders.

The UNDP GEF CLME+ Communications Strategy will be used to inform the design and dissemination of all communications products developed under this sub-project to ensure appropriate branding and consistency of message.

Summary of Strategic Actions:

- ✓ Stakeholder exchanges and involvement in marine management decision making;
- ✓ Stakeholder training and participation in sampling and data analysis;
- ✓ Data analysis and interpretation and application in marine management decision making;
- ✓ Pilot testing of methods at reducing levels of pollution and habitat degradation in coastal wetlands and mangroves;
- ✓ Active participation of coastal communities in marine ecosystem conservation and management, enabling them to play a pivotal role in the preservation of their livelihoods, traditions and economic development.
- ✓ Restoration of some degraded marine / coastal areas;
- ✓ Reduction and resolution of conflicts between current and future human activities; and with nature.
- ✓ Identification and testing of multilevel governance arrangements to facilitate community based management of coastal mangrove systems in a learning by doing mode.

A central approach across all of the Strategies within the project will be the Governance Effectiveness Assessment Framework (GEAF) which will be tested at the sub-project level and help inform the overall GEAF for the project. In the design of an appropriate Monitoring and Evaluation Framework at the sub-project level, close interaction with CERMES and the FAO sub-project are anticipated. In a similar manner, the experiences in data collection and analysis within the sub-project will be used as input to the SOCAR, State of Habitat and ultimately SOMEE Reports.

Project Implementation Schedule

Project Start Date: July 2017

2017: Q1 Jan – Mar;	Q2 Apr – Jun;	Q3 Jul – Sept;	Q4 Oct – Dec.
2018: Q5 Jan –Mar;	Q6 Apr – Jun;	Q7 Jul – Sept;	Q8 Oct – Dec.
2019: Q9 Jan – Mar;	Q10 Apr – Jun;	Q11 Jul – Sept;	Q12 Oct – Dec.

Strategic Actions / Strategies	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**
1.1.Stakeholder meetings and identification of pollution hotspots							
2.1Assessment of pollution associated with coastal mangroves and wetlands							
2.2. Design of ecosystems-based marine management plans and ocean governance arrangements to address pollution, land degradation and transboundary issues							
3.1. EBM and community-based participation in habitat restoration and protection and field testing of proposed governance arrangements							
3.2 Site specific technical communications on the ecosystem based management process defining the step by step actions, strategies and outcomes. Showcasing lessons learnt and recommendations towards regional ocean governance frameworks.							

Project Outcomes / Outputs

Strategy 1.1 / Outcome
Inter-sectoral framework for regional exchanges, ecosystem monitoring and management planning and effective application of ocean governance

Outputs
- ✓ National and regional stakeholders critical to mangrove conservation identified, and sites selected for application or testing of EBM tools and guidelines.
- ✓ Stakeholder maps developed.
- ✓ Increased opportunities for public awareness and appreciation of marine ecosystems and the interrelationships between various species and habitats achieved via focused and well targeted communications.

Strategy 2.1 / Outcome
Biochemical and physical structures of various mangroves defined.

Outputs
- ✓ Data verification: Biochemical analysis of water, sediments and vegetation, pollution hotspots mapped, and make-up of mangrove species, determined in and around marine wetlands and mangroves in Trinidad, Guyana, Brazil and Suriname and possibly French Guiana.
- ✓ Resource use maps developed, inclusive of pollution threats to coastal wetlands and mangroves forests.

Strategy 2.2 / Outcome

I. *Cross sectoral supporting arrangements at national and regional/transboundary levels identified and strengthened for addressing local level environmental stressors such as pollution and habitat degradation.*

II. *Governance arrangements for the management of pollution and habitat degradation at the selected sites defined inclusive of clear mandates for most sectors such as environment, fisheries, planning/finances, and community development.*

Outputs
- ✓ EBM mechanisms and ocean governance structures to manage coastal wetlands are defined.
- ✓ Frameworks for ocean governance at national levels are developed through stakeholder consultations and are field tested as part of the mangrove restoration country projects.
- ✓ Ecosystem Based Management plans for selected coastal wetlands and mangroves sites drafted.

Strategy 3.1/ Outcome
Targeted package of socially-just, stress reduction measures and governance framework defined and tested for each of the pilot sites.

Outputs

- ✓ A minimum of four coastal communities receive financial and technical support to implement pollution mitigation measures and habitat restoration activities.
- ✓ Funding made available to increase capacity of Government and private sector agencies to implement management strategies.

Strategy 3.2 / Outcome
Mechanism in place to track progress towards EBM and effective ocean governance at the pilot sites and to facilitate replication/up-scaling, and strategy to ensure continuity of efforts beyond the Sub-Project lifespan.

Outputs

- ✓ Monitoring and evaluation protocols based on the GEAF which include *inter alia* baseline values, process indicators and i) ecosystem/habitat status, ii) stock/species diversity status; iii) socio-economic status of persons living in or near the selected or test sites, iv) advisory and decision-making components of the relevant policy cycles.
- ✓ Data collection regimes and reporting schedules established.
- ✓ Elaboration of an *Operational M&E* system to support decision-making at the pilot site level.
- ✓ Multi-lingual materials (English, Dutch, Portuguese and French) documenting best practices & lessons learnt.
- ✓ Dissemination of informational materials to target audiences to ensure replication.
- ✓ Communications materials on pollution levels and impacts in assessed coastal areas produced.
- ✓ Report on lessons learnt.

6. DETAILEDWORKPLAN

Project Activities and Expenditure

Project Start Date: July 2017

2017: Q1 Jan – Mar;	Q2 Apr – Jun;	Q3 Jul – Sept;	Q4 Oct – Dec.
2018: Q5 Jan –Mar;	Q6 Apr – Jun;	Q7 Jul – Sept;	Q8 Oct – Dec.
2019: Q9 Jan – Mar;	Q10 Apr – Jun;	Q11 Jul – Sept;	Q12 Oct – Dec.

Activities	Time frame	Outputs	Indicators	Baseline	Budget US$
Strategy 1.1:Stakeholder meetings and identification of pollution hotspots					
1.1.1 NPCs conduct a simple stakeholder analysis to identify key organizations to participate in the MSP exercise for the NBSLME in collaboration with CANARI.[i]	Q3	Stakeholder map	No. of stakeholder maps developed	No national marine stakeholder map exists.	0.0
1.1.2 Implementing agencies in collaboration with the coordinating agencies, WWF, CI and CEP organize and host a 2 day Inception and Project Planning Workshop. **M1**	Q3	Workplans developed by implementing agencies.	No. of approved institutional workplans	Inter- agency collaboration rarely occurs	$9,000
1.1.3 Invite and facilitate the participation of organizations from Brazil, T&T and Fr Guiana to WWF meeting: Defining governance arrangements and mangrove management workplans in collaboration with CERMES.**M2**	Q3	Expanded and enhanced cross-sectoral governance structure and arrangements proposed or confirmed per country.	Number of mangrove management workplans developed; Number of countries establishing governance arrangements for EBM	Some "EBM" – like projects in the region but actions insufficiently coordinated among the relevant societal actors (different gov't divisions, private sector, civil society, academia).	$6,000
1.1.4 NPCs organize national meetings and data collection, site selection, project coordination, M&E.**M3**	Q5- 9	9 @ $500 national; 1@ $6000 sub-regional	Number of national meetings conducted Number of participants involved in national consultations	No marine meetings for the NBSLME	4500 + 6000 = 10,500
1.1.5 During mapping meetings undertake the collection of baseline data and establish a repository for such data.	Q3, Q5, Q7	Repository in each national implementing entity	No. of national data repositories developed	No regional repository for marine /fisheries data.	0.0

Activities	Time frame	Outputs	Indicators	Baseline	Budget US$
1.1.6 Field surveys towards data verification.**R1**	Q4- 8	NFP coordinates surveys	No. of Field Surveys conducted per country	No previous efforts at fisheries data.	2,000 x 4 = 8,000
1.1.7 Collaborating with CI and WWF utilize aerial surveys and satellite imagery, and in collaboration with WWF MSP process, map pollution hotspots and degraded mangrove areas.**R2**	Q4 - 6	Pollution hotspots identified and mapped	Report with aerial photos and satellite maps	Very few aerial surveys have been conducted at mangrove /wetland sites for the region.	6,000
Sub - Total					*39,500*
Strategy 2.1 Assessment of pollution associated with coastal mangroves and wetlands					
Activities	**Time frame**	**Outputs**	**Indicators**	**Baseline**	**Budget US$**
2.1.1 Establish protocols for sampling (consider the State of Convention Area/Pollution Report {SOCAR}and State of Habitat Report)	Q4	International standards	Protocols defined	Protocols exist.	0.0
2.1.2 Training of community and other agency staff in collection and handling of mangrove samples. **C1**	Q4 - 5	Stakeholders trained in soil, water, plant, and shellfish sampling	No. of staff trained in collection and handling of mangrove samples	Most persons are unaware of how to conduct simple sampling	4,000
2.1.3 Collection of water, soil, vegetation samples, fish and shellfish **C2**	Q4 - 9	Mangrove sampling across region	Number of samples collected and analyzed	No data on bacterial and heavy metal contamination for most coastal areas.	4 x 2,500 = 10,000
2.1.4 Transport samples either locally or overseas for analysis **R3**	Q4, 7, 9	Samples delivered to labs			1,600
2.1.5 Biological and chemical analysis of samples **R4**	Q4, 7, 9	Biochemical tests undertaken			35,000
2.1.6 Drafting / Publication **P1**	Q7	Regional report on Analyses	Report of biochemical analyses of all samples	No current regional report on mangroves	2,000
Sub-total					52,600
Strategy 2.2. Design of ecosystems-based marine management plans and ocean governance arrangements to address pollution, land degradation and transboundary issues					
Activities	**Time frame**	**Outputs**	**Indicators**	**Baseline**	**Budget US$**

Activities	Time frame	Outputs	Indicators	Baseline	Budget US$
2.2.1Hold regional MSP meetings to plan the management of selected mangrove areas guided by governance arrangements and EBM approach. **M4**	Q5 -6	Regional agreement towards improved management of the mangroves	Regional mangrove management strategy (ies)	Several habitat restoration projects (mangroves, coral reefs) in the region, but generally not well articulated among each other.	6,000
2.2.2Define stress reduction actions to reduce pollution levels and enable rehabilitation of degraded mangroves.	Q5-6	Targeted package of stress reduction measures implemented at the pilot sites.	Number of stress reduction measures identified.		0.00
Sub-Total					6,000
Strategy 3.1. EBM and community-based participation in habitat restoration and protection and field testing of proposed governance arrangements					
Activities	**Time frame**	**Outputs**	**Indicators**	**Baseline**	**Estimated Budget**
3.1.1Min. of 4 coastal communities receive financial and technical support to address conditions that threaten their livelihoods. Strategies for corrective action must comply with EBM guidelines. Financed @30,000 per country. **C3**	Q5 - 9	EBM strategies applied within agreed governance framework to address ecosystem threats to coastal regions.	Number of coastal communities engaged in EBM project interventions	Limited integration of actions, limited cases following a holistic approach combining simultaneous actions to deal with the wider variety of threats.	120000
3.1.2 Implement stress reduction actions to reduce pollution levels and enable rehabilitation of degraded mangroves.	Q5 -9	Reduced stressors present at pilot sites.	Number of stress reduction actions implemented		
Sub-Total					120000
Strategy 3.2 Site specific technical communications on the ecosystem based management process defining the step by step actions, strategies and outcomes. Showcasing lessons learnt and recommendations towards regional ocean governance frameworks.					
Activities	**Time frame**	**Outputs**	**Indicators**	**Baseline**	**Estimated Budget**
3.2.1 Produce min. of 1000 posters and other awareness materials on EBM mechanisms towards mangrove conservation. Include the final resource map of the NBSLME. **P2**	Q5 - 7	Site specific posters on EBM strategies and guidelines	Number of Posters disseminated.	Limited to no awareness on EBM in mangroves and wetlands in the NBSLME.	4,000
3.2.2 Produce t-shirts to promote participation in the mapping process and data	Q4 - 5	Min. of 1000 T-shirts printed promoting	No. of T-shirts produced	Little to no interests in MMAs and	9,000

Activities	Time frame	Outputs	Indicators	Baseline	Budget US$
gathering (tissue sampling and plankton trawls) and support for MMAs and EBM processes. **P3**		EBM approach to mangrove management.		MSP by fishermen and coastal residents.	
3.2.3 Produce videos of community success stories in order to promote ecosystem based co-management of natural resources.**P4**	Q5 - 8	Community actions documented and displayed	No. of Videos produced	Some videos exist that demonstrate the role of communities in conservation.	100 x 6 = 600
Sub-Total					13,600
4.1 Project Administration (monitoring of activities, data analysis, assessment of progress towards objectives, reporting on achievements and lessons learnt)					
Activities	**Time frame**	**Outputs**	**Indicators**	**Baseline**	**Budget**
4.1.1 Coordinate the project regionally **S1**	Q3 - 9	M&E, Technical and financial reports to UNEP.	Reports completed and received by UNEP.	Evaluation of project successes inadequately documented.	9,000
4.1.2 Four National Project Coordinators (NPCs) for Suriname, Guyana, Trinidad, Brazil, **S2**	Q3 - 9	Oversees the implementation of activities in his /her country and ensure timely delivery. Maintains communication with other NFPs.	No. of Countries establishing National Project Coordination Agreements	No NFPs appointed. No person / agency responsible for project monitoring and reporting.	$250 x 4 month for 18 months = 1000 x 18= 18,000
4.1.3Office rental	Q3 - 9	Contribution by each country	Office of the NFP	No office currently identified	0.00
4.1.4 Undertake M&E: Utilizes GEAF to track and evaluate progress towards EBM and to facilitate strategic/adaptive decision-making.**R5**	Q4 - 9	Progress report : Evaluation of progress towards EBM	No of Countries developing M&E protocols incorporating the GEAF	Governance assessments methodology available from CERMES case studies under the CLME Project (GEF ID 1032) and from the TWAP Project	2,000
4.1.5 Communicate on success stories & lessons learnt **P6**		Communication items	No, of case studies/lessons learned documents	Inadequate communication on lessons learnt, and success stories	3,000
4.1.6Administration per country @ $1500 (onetime payment)**A1**	Q3 - 9	Printing, telephone, use of vehicles to landing sites, use of meetings	No. of Financial Expenditure Reports		6,000

Activities	Time frame	Outputs	Indicators	Baseline	Budget US$
		rooms, conference space.			
4.1.7Travel costs (to pilot sites, mangroves) @ $2000 per country for the life of the project**A2**	Q4 - 8	Only for use to approved project site and functions.	No. of Travel reports		8,000
Sub-Total					46,000
Total					**277700**

Local-National Project Partners / Stakeholders

- Coastal community residents
- Artisanal fishers
- NGO groups (Guyana Marine Conservation Society, Green Heritage Fund Suriname, etc..)
- Marine area managers
- Marine and coastal zone biologists
- Wildlife conservation officers
- Sustainable development specialists
- Community development officers
- Sustainable finance officers
- Farmers
- Industry workers (working in establishments close to the coastal sites)
- Fisheries officers and managers
- Teachers and other educators
- Students and volunteers for field work
- Communications officers
- University and water quality testing laboratories

Regional Project Partners /Coordinators

- Caribbean Natural Resources Institute (CANARI)
- Conservation International (CI)
- Guiana Shield Facility (GSF)
- World Wildlife Fund Guianas(WWF)
- Food and Agriculture Organization (FAO)
- Caribbean Large Marine Ecosystem + (CLME+)Project Coordinating Unit (PCU)
- Centre for Resource Management and Environmental Studies (CERMES)

Project Coordination

It is recommended that one agency be identified to coordinate activities at the regional level. The Institute of Marine Affairs, the IMA has indicated its willingness to serve as the Regional Coordinating Entity (RCE).The IMA will therefore be responsible to oversee the technical and financial management and reporting to UNEP. Funds however will be transferred directly from UNEP to the Implementing organizations as per the recommendation of the RCE.

Lead Implementing Organization / National Project Coordinators

The following agencies have been recommended to undertake or oversee the tasks of the National Focal Points:

I. Institute of Marine Affairs - Trinidad and Tobago
II. Environment Protection Agency (EPA)– Guyana
III. TBD - Suriname
IV. TBD - Brazil

7. BUDGET SUMMARY

Item		Reference	Unit	Unit Cost	Total USD
Project Personnel	S1	Regional Coordinating Entity	1	500 x 18 months	9,000
	S2	National Focal Points	4	250 x 18 months	18,000
				Sub-Total	27,000
Meetings	M1	Inception meeting	1	Min. of 10 participants	9,000
	M2	1st MSP – Governance structure	1	Min. of 6 participants	6,000
	M3	Project planning using EBM and Governance frameworks	9	National x $500 = 4,500	10,500
			1	Regional @ 6,000	
	M4	Regional review of progress	1	4 x 3 representatives	6,000
					31,500
Research	R1	Field surveys at pilot sites to assess pollution and habitat degradation	4	$2,000 per country	8,000
	R2	Aerial surveys	4	1,500 per country	6,000
	R3	Samples collected and shipped	4	@400 per country	1,600
	R4	Testing for heavy metals, nutrients, toxins	4	Biochemical tests	35,000
	R5	Final project report M&E apply against EBM targets (maps, photos, tables, achievements against targets, final Governance structure etc)	1	Produced by Regional Coordinating Entity	2,000
					52,600
Community-based conservation actions	C1	Stakeholders trained in soil, water, plant, and shellfish sampling	4	$1,000 allocated for each country	4,000
	C2	Collection of soil, water, plant and tissue samples	4	$2,500 to support collections per country	10,000
	C3	Implementation of stress reducing factors through community initiatives in coordination with CANARI	4	$30,000 per country	120,000
					134,000
Publications Reporting Communications	P1	Report on biochemical analyses	1	Report on analyses at all sites	2,000
	P2	EBM mangrove restoration posters guided by CLME+ Communications Strategy	4	Min. 1000 posters per country	4,000
	P3	T shirts and other awareness items	4	Min. 1000 t-shirts and other items	9,000

Item		Reference	Unit	Unit Cost	Total USD
	P4	Community videos: Mangrove restoration work documented	4	@ 150 per site	600
	P5	Communicate on success stories & lessons learnt			3,000
				Sub-Total	18,600
Administration	A1	Office expenses per country	4	@ $1,500 per country	6,000
Travel	A2	Travel of NFP per country	4	@ $2,000 per country	8,000
				Sub-Total	14,000
Grand Total					**277,700**

8. REPORTING

The following reporting schedule is proposed, to be submitted to the UN Environment CEP as the responsible Executing Agency Partner by the RCE.

1. Inception Report (inclusive of stakeholder maps per country, confirmation of NFP and RCE, and schedule of national and regional consultations)*by August 31, 2017*
2. Communications and Participation Plan(aligned with the CLME+ Overarching Communications strategy) and informed by the communications and participation strategy for CLME+ by CANARI *by October 31st, 2017*
3. Report on Pollution Hotspots per Country (inclusive of pollution data, forest cover, deforestation levels) and Selection of Study Area *by December 31st, 2017*
4. Report on EBM Training Workshop / Regional Consultation *by December 31st, 2017*
5. Draft EBM plan and Governance Framework per Study Area, inclusive of detailed workplan, project implementers and budget breakdown *by December 31st, 2017*
6. First progress Report *by December 31st, 2017 (*For consideration and to be determined between UNEP CEP and the RCE. CEP is expected to report to the CLME+ PCU every 6 mths regarding with annual financial reporting on the implementation of CLME+ Project related activities)
7. Mid-term Progress Reports on Pollution Abatement and Habitat Restoration Projects (National Reports)*by July 01, 2018*
8. Final Progress Report on Pollution Abatement and Habitat Restoration Projects (National Reports)*by July 31 2019*
9. 2nd Progress Report – Communications Plan *by July 31st, 2019*
10. M& E Report *by August 31st 2019*
11. Final Technical Report: M&E applied against EBM target. Will include maps, photos, tables, achievements against targets, final proposed Governance structure. Draft Memo to Country Cabinet of Ministers. *By August 31st, 2019*

9. REFERENCES

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[i] To be undertaken in collaboration with CLME+ Environmental Mapping & Reporting Specialist, Ms. Andrea Salinas, at the CLME+ Project Coordination Unit, and CANARI.