

Project on Improving Management of Coastal Resources and the Conservation of Marine Biodiversity in Selected CARICOM Countries

Executive Summary



Programme Details:

PROGRAMME TITLE: Management of Coastal Resources and the Conservation of Marine Biodiversity in Selected CARICOM Countries

DURATION: Four Years

TYPE: Technical Assistance

TARGET COUNTRIES: Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines

FUNDING: The Federal Republic of Germany/Ministry of Economic Development and Cooperation (BMZ)

EXECUTING AGENCIES: The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
The Caribbean Community Secretariat (CARICOM)

IMPLEMENTING AGENCY: Caribbean Environmental Health Institute (CEHI)

PROGRAMME UNIT: Caribbean Environmental Health Institute, St. Lucia

START/END DATES: January 2013 to December 2017

Programme Background

The German Ministry of Economic Development and Cooperation (BMZ) pledged in December 2009, to support the Member States of the Caribbean Community (CARICOM) in their efforts to prepare for the anticipated impacts of climate change. In this regard, resources have been committed to the execution of a four year programme for the management of coastal resources and the conservation of the marine biodiversity of the Caribbean Community (CARICOM). The target countries are Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

The core problem can be described as follows: *“Addressing the increasing vulnerability of Caribbean SIDS to climate change and the attendant negative impacts on marine and coastal biodiversity, ecosystems and communities are challenged particularly by human resource capacity limitations, weak knowledge transfer and decision making processes among academia, policy makers and the civil society, as well as poor engagement of private sector in sustainable coastal resource management.”*

It is anticipated that this programme of support will address some of the main threats and challenges posed by climate change to coastal and marine environments and coastal communities as highlighted in the Intergovernmental Panel on Climate Change (IPCC) (2007) Fourth Assessment Report on small islands and low-lying coastal developing states.

Programme Concept

At the regional and national level, the Programme focuses on strengthening the capacity of stakeholders through a common institutional framework for integrated coastal management and the strengthening of management of marine protected areas (MPA) in the Caribbean Region. The Programme will also provide advice to local communities and relevant public and private stakeholders in selected member countries of CARICOM. Particular emphasis will be laid on improving the resilience and adaptation capacity of communities by implementing biodiversity and ecosystem conservation measures as well as the promotion of mechanisms for sustainable use of natural resources.

Overall programme objective

The management of existing marine protected areas in the selected Caribbean countries is strengthened.

Programme Indicators

1. At least 5 marine and coastal protected areas are being managed according to sustainability criteria, including the effects of climate change and gender-sensitivity, based on business plans, adopted by the countries involved.
2. In at least 5 marine protected areas, best practice models for sustainable environmental and resource management and negotiation procedures for the resolution of conflicts over competing uses are implemented by the responsible

agencies with the involvement of local communities and the private commercial sector.

3. CARICOM has adopted directives and regulations to enable management plans for marine protected area to be developed, implemented, and updated.

Proposed intervention areas/key service packages for the programme

- Support to a conducive legal and institutional framework for coastal ecosystem management.
- Support to harmonization of national and regional policies of relevance to coastal ecosystems and climate change (e.g. financing mechanisms, payment for ecosystem services).
- Contribute to coordination mechanisms at and between national and regional levels.
- Support to integrated monitoring and information systems and knowledge transfer.
- Piloting innovative approaches and up-scaling of experience and lessons learnt (e.g. protection, management and rehabilitation of coastal ecosystems; measures to add value to products from agriculture and fisheries; measures to link land-based waste/water management systems to marine conservation).

Programme Baseline Study

A Baseline Study was undertaken by the Caribbean Environmental Health Institute (CEHI) during the period September to December 2012 with the objective of determining the issues and challenges related to coastal and marine biodiversity, and also to obtain an overview of the stakeholders involved. It was prepared on the basis of group consultations with stakeholder and direct discussions with relevant persons in each of the target countries, supplemented by a literature review. Regional organisations and programmes were also consulted. Further, it is expected that detailed planning for activities will be done at the beginning of programme implementation through a regional workshop. It will then be determined what interventions might be possible within the programme to support the target countries in collaboration with other partners.

The full Baseline Study presents information on each target country on 1) Country Geographic and Socio-Economic Characteristics; 2) Governance and Institutional Framework; 3) Relevant stakeholders 4) Description and status of each marine protected area (MPA); 5) Country Needs and; 6) Priority Interventions. Information is also provided on identified best practices, innovative solutions, lessons learned, gender, livelihoods and private sector linkages in each country. A section of the report is devoted to regional initiatives by donors and technical agencies. The report concludes with proposed strategic matters related to programme implementation.



Key findings of the Study

The countries in the programme share geographic and biological similarities and are impacted by common environmental issues. In particular, the five island states of St. Lucia, Dominica, Grenada, St. Vincent, St. Kitts and Nevis are small land masses, with relatively steep topography and similar terrestrial and marine species complement. These islands are primarily volcanic in origin, share a similar climate and are all impacted by hurricanes and tropical storms. The islands also have similar histories, cultural and current socio-economic conditions. They are heavily dependent on tourism and agriculture including fisheries. Tourism infrastructure and housing settlements are concentrated in the coastal zone. While coral reefs, mangroves, seagrass beds and the coastal environment in general are critical for tourism and fisheries, these resources are also heavily impacted by land based sources of pollution. Additionally, there is evidence of declining fish stocks, rising sea temperatures and sea level rise.

The need to manage land based pollution was a recurring theme in the stakeholder consultations, especially the need to manage sediment and sewage. Management of these impacts were seen as key to building resilience in light of future climate change impacts and important for the protection of marine biodiversity. There is an urgent need for community involvement and community ownership as well as livelihood options for the communities within and around the MPAs.

Some of the MPAs are directly affected by sewage and sedimentation caused by watershed degradation and soil erosion. Grenada has four established MPAs and has asked that the GIZ-implemented assistance focus on the Molinere/Beausejour Protected Area, in particular to address the impacts of a sewage outfall. Capacity building for the MPA staff and community stakeholders is also needed. Grenadian community stakeholders have requested assistance in the development of alternative livelihood and public awareness programmes to discourage illegal fishing in the MPA.

In Dominica, there is a need for a greater sense of ownership within the community surrounding the Scott's Head Marine Reserve and alternative livelihoods for the fishermen who have been displaced. However, the most pressing need in Scott's Head is sewage discharge into the MPA via the Alum Stream from households which directly or indirectly empty their waste into the stream. There is a stronger management regime and more activities targeted at the Scott's Head Marine Reserve as opposed to the other MPA, Cabrits, located in the North West of the island. St. Vincent stakeholders focused on land based pollution affecting the South Coast Marine Conservation Area.

St. Kitts and Nevis has no officially-declared MPA although there is a draft zoning proposal which requires Cabinet approval. Nonetheless, conservation activity in St. Kitts is concentrated around the proposed MPA at the South East Peninsula where siltation is a problem. St. Lucia's most recognised and active Marine Management Area is the Soufriere Marine Management Area. There is also the Point Sable Management Area which has been the focus of a number of programs and the Anse La Raye/Canaries Marine Management Area, which has received the least attention of the three. There are also a number of marine

reserves but these lack active management plans and are hampered by the fact that some of them include private lands. St. Lucian stakeholders have also pointed to sedimentation in the Soufriere Marine Management Area as a concern.

In terms of MPA management, the five smaller islands are not as advanced as Jamaica or continental Belize. Belize and Jamaica have a longer history of MPA management, and a number of best practices and co-management models to share with the five small island states. Jamaica has more MPA based activity and very community oriented MPA management regimes. Jamaica also differs from the other Caribbean islands in that it has a larger land mass and different geological makeup.

Although Belize is a continental land mass, its barrier reef and associated cays share similar “island type” issues with the targeted Caribbean islands in the study. For the two major inhabited cays of Caye Caulker and Ambergris Caye, sewage pollution is a major concern and a specific request from stakeholders is for funding a sewage plan for Caye Caulker. Belize also has a strong MPA management history and in particular community co-management initiatives. Stakeholders have suggested however, that the link between terrestrial and marine resource management is not very strong and that this link needs to be strengthened given the effects of land based pollution on the Belizean marine environment. The watershed concept (ridge to reef approach) is more developed in the Caribbean islands and it may be that best practices from watershed management efforts in the Caribbean islands could be useful for enhancing the Belize coastal resources management initiatives. Given Belize’s location in Central America, it has transboundary issues related to coastal areas management. It is felt that much of the solid and liquid waste pollutants within the Belizean marine space originate from Honduras and Guatemala.

The outlier in the target countries is Guyana. Unlike the other countries, there are no coral reefs. There are also high levels of sedimentation from large rivers such as the Demerara, Orinoco and Amazon. While sewage and sedimentation are factors, an equally pressing issue is the pollution of the marine resources by mercury used in mining in the interior. Because Guyana is a low-lying coastal state, mangrove management and sea defence issues are also major concern. While the fishing effort is largely artisanal in the other countries, Guyana also has significant commercial shrimp trawling activities.

All countries cited overfishing as a major concern and the need for alternative or supplementary livelihoods for fishermen. Government responses to overfishing include the promotion of aquaculture e.g. in Guyana. In Belize aquaculture is promoted by some of the environmental NGOs and in St. Kitts and Nevis there is a current push towards aquaculture as well. The other countries such as St. Lucia are also exploring aquaculture as marine fishing alternatives. The fisheries



related programs in the countries are also promoting Fish Aggregating Devices (FADS) and value added fish products. A general concern is lionfish management.

Best practices and lessons learnt

The Study sought to identify best practices and their potential for replication. Best practices identified generally spoke to marine zoning, co-management and financial models for MPA management. Additionally, there were instances of best practices for community stewardship and livelihoods. Many of the best practices were identified in Belize and Jamaica.

Belize has good financial models for some of the marine reserves e.g. the Hol Chan Marine Reserve. Other well known examples from Belize are the zoning and managed access for fishing in the MPAs. In the Sapodilla Cayes for instance, the MPA is divided into a general use zone (some fishing allowed), conservation zone 1 (only scuba, snorkelling and non extractive sport fishing), conservation zone 2 (some subsistence fishing allowed), and preservation zone (no activities). In the Gladden Spit MPA, fishing is not allowed during peak spawning periods. The Department of Fisheries (pers. comm.) have also indicated recent successes in staggering the conch harvest to allow for conch recovery and to avoid glut periods for the conch processors. A number of the MPAs in Belize are also co-managed between the Fisheries Department and local NGOs such as SEA and TIDE.

In terms of community environmental stewardship and livelihoods, in Guyana, Mangrove Village Councils were established to continue work in mangrove management initiated by an EU- funded Mangrove Rehabilitation Project. Guyana mangrove stakeholders have also developed a business plan and ecotourism ventures as livelihood alternatives to mangrove clearance. In St. Lucia, an Economic Diversification Project funded by the Federal Republic of Germany built business management capacity for fishermen and other private sector representatives. This included training and development of marketing plans. To foster better environmental stewardship among the private sector, tour operators in Belize were given training in good environmental practices. A Grenadian Fishing Association sought to increase its revenue by creating value added products e.g. salted and smoked fish.

Measures to mitigate the threat of pollution included the adoption of appropriate technologies, such as the establishment of a wetland filtration wastewater treatment system promoted by CEHI for sites with high water tables or impermeable soils. Composting toilets are also in use by at least one Belizean MPA which is a means of reducing wastewater discharges.

In terms of tools and methodologies, St. Lucia has been using a simple and user-friendly reef check monitoring programme. St. Lucia has also utilized a participatory GIS model for resource assessment for a sea urchin management project. Participatory GIS modelling is being promoted across the region by CANARI and is a viable tool to foster better community management of natural resources and promote ownership. In Participatory GIS, information on resources and community knowledge is built as a physical model. This helps with easier visualisation and promotes discussion and appreciation of resources by

communities. Similarly, the Healthy Reefs initiative in Belize has developed a ecosystem health report card format for the Meso-American Reef System, which displays ecosystem information in an easy to understand format. The Nature Conservancy (TNC) has developed decision support systems for MPAs. While not directly related to marine resources, Grenada has established a system for data storage, processing and display. St. Lucia has an internet based Water Information System. In terms of watershed management tools, CEHI has piloted a watershed hotspot assessment tool in St. Lucia to identify and prioritise point and non-point pollution sites for mitigation interventions. While the above represent only some examples of best practice, consideration should be given for documenting Caribbean as well as relevant international best practices.

Private sector, community livelihoods, cultural and gender perspectives

In the Caribbean, men generally fish while the women may be more involved in fish processing. Women are also more likely to be working in spinoff tourism activities e.g. administrative work in charter companies. In Belize, because the men are at sea fishing, their wives and partners are generally the ones who would attend workshops and meetings. In contrast, the men attend workshops and meetings in the Grenadines. In Belize as well where there have been numerous attempts to create supplementary and alternative livelihoods for fishermen e.g. pig farming, the women managed the land based income activities while the men go out fishing. Belize also noted that high level positions within NGOs were held by women. MPA wardens in Belize and the Caribbean islands were generally male. In St. Vincent there is a problem with young males “on the block”, i.e. unemployed males who may carry out illegal marijuana farming on erosion prone slopes with ensuing sedimentation and coastal pollution impacts. Finding suitable employment and activities for this group was seen as a means to reduce the stress on the hillsides which leads to erosion and coastal sedimentation.



In Belize, which has indigenous groups like the Mayans, gender and culture issues are factored into the how environmental agencies and NGOs carry out their work programmes. For instance, the Department of Environment noted that they send their male officers to do consultations in Mayan communities as female officers are not well received. The Department of Environment has also noted that interfacing with individual Mennonite land owners regarding environmental issues is difficult in that individual land owners are not directly accessible so the Department has to work through a council of male elders. Dominica and Guyana also have indigenous Amerindian groups, but these are more absorbed into mainstream culture so that gender and other cultural factors might not be an issue.

There is some private sector involvement in that four companies and dives shops are on a number of MPA management boards. In Dominica the push for a communal septic tank to alleviate sewage pollution in the Scotts Head MPA is from a private dive company which has seen this activity as something in their commercial interest.

Capacity needs assessment

The results of the capacity needs assessment indicated that the priorities are: 1) infrastructure e.g. sewage treatment facilities, 2) equipment e.g. patrol boats and 3) additional staff. It was generally felt that State Agency and Ministry staff had the expertise and were well trained (with a few exceptions). Training was less of a priority when compared to equipment, staffing and infrastructure needs. There will always be need for additional training for newly recruited staff and also training for operators that impact on MPAs e.g. wastewater treatment training for hotel wastewater treatment operators. Additionally, there is a need for capacity building at the community level such as for alternative and sustainable livelihoods.

In St. Vincent, Grenada, Dominica and Guyana, officials described heavy workloads and inadequate staff and as a result, many areas are neglected. The addition of new projects and programmes and ensuing administrative and reporting needs, place an additional burden on existing staff. Grenada has specifically requested support for hiring a biologist and communications specialist for the Molinere MPA. While it is recognised that staff salaries are not generally covered by donor funding, some precedent was set by one donor agency in funding a biologist for the Sandy Island MPA. The Grenada Fisheries Department (the MPA Coordinator) is attempting to negotiate similar arrangements with other donor agencies. The St. Vincent National Parks Authority proposed that a bank of professionally trained volunteers be established. A programme for junior volunteers e.g. college interns is another option. However it would be best if this was targeted towards graduate students with more professional experience to offer. Dominica had suggested funding and training for community stewards as a possible bridge for staffing shortages in Government agencies.

There were a few specific training requests from the Ministries and agencies as follows:

- GIS training for the Mangrove Secretariat in Guyana
- Short term forestry training in Grenada e.g. climate change impacts as well as long term degree programmes for forestry staff
- Coastal processes training for the Guyana Sea Defence Board.
- Additional capacity was also requested for EIA assessment reviews and water resources management in Belize.

The need for equipment is more pressing than training; Dominica and Grenada had specific requests for equipment related to patrolling of the marine parks, as well as MPA infrastructure e.g. mooring buoys. Procurement of long term GIS licences was requested by Belize. Some stakeholders e.g. the SMMA in St. Lucia requested capacity building for staff to

ensure smoother day- to -day operations and general long term viability e.g. development of management plans and standard operating procedures.

A number of agencies have asked for assistance with their monitoring regime inclusive of consumables and reagents, as well as equipment. This should be approached with caution however, especially since this type of assistance is unsustainable. If equipment is provided, it should be simple and easy to maintain. Often, the basic information gathered from such simple monitoring regimes is adequate for decision-making. Some of the agencies e.g. UNDP Belize, have also indicated that enough data exists in Belize but that it is the collation and analysis of these data that is the problem. Similarly, Guyana stakeholders felt that data storage and sharing of information were greater issues than the absence of data. There was a call for a Guyanese national central environmental information repository potentially housed by the EPA or Ministry of Environment that could be accessed for all stakeholders. In terms of institutional arrangements, stakeholders in St. Kitts/Nevis suggested the creation of an MPA Management Agency through legislation.

There a real need for capacity building at community levels. This includes environmental awareness and education e.g. interventions to discourage illegal fishing in the MPAs. The threat of invasive lionfish calls for ongoing and continued management, e.g. fishermen training and general public awareness on how to safely catch and cook lionfish. Many stakeholders focused on the need for building sustainable livelihoods. In countries such as Grenada and Dominica there were requests for assistance with alternative and supplementary livelihoods for displaced fishermen. Some countries are further along e.g. having already identified supplementary livelihoods, they now need training in producing value added products e.g. salted fish or seaweed based products or they need support for food processing and quality assurance. In some cases, assistance was requested for general business plans and the development of appropriate marketing and branding programmes. General business training, customer service orientation and personal financial management are also required. In Dominica there is a need to conduct community stewardship programmes for the Scott's Head MPA. There were similar calls for public awareness to discourage illegal practices in MPAs in Grenada. While promoting community livelihoods is important, programme activities should focus on where there is already demonstrated enthusiasm by community stakeholders. The approach should be to build on existing initiatives. Jamaica is a good example where there are past successes in community projects e.g. the GEF- funded IWCAM project and where Jamaica community stakeholder work is supported by a strong environmental agency (NEPA) with significant experience in community stakeholder work.

It is vital that capacity development be given priority attention within the programme. There are serious manpower limitations within the small islands in terms of the number of available experts or even mid-level technically qualified persons. While donor/technical assistance projects do not necessarily fund salaried positions, some creative ways must be found to fill the breach. It is suggested that the Programme develop and institutionalise an internship programme which has untapped potential in terms of addressing manpower needs, even on a short term basis. CEHI's internship programme which attracts graduate and post graduate students from within Caribbean institutions such as the Centre for

Resource Management and Environment Studies (CERMES) and St. George's University as well as outside of the region from the USA, Canada and Europe should be further developed. Another tried and proven support arrangement could be the use of UN Volunteers which can be negotiated with the UNDP and other UN Agencies, as well as through the Japan International Cooperation Agency (JICA) which already has a foothold in St. Lucia, for example. The Caribbean islands are an attractive destination and this should be exploited.

The participatory approach in the management of MPAs is critical for the programme to be successful and sustainable. Thus capacity building should involve CBOS and NGOs where they exist. Focused attention should be placed on capacity building for empowerment e.g. Community Based Resource Assessment within the MPAs, Conflict Resolution; Awareness Building, Business Management and Good Environmental Practices. The MPA capacity assessment carried out by Caribbean Marine Protected Areas Managers Network and Forum (CaMPAM) should also be used as a guide to inform interventions. Careful attention must be paid to the sustainability of initiatives so that sources are not depleted through over harvesting. In this regard, the Caribbean Regional Fisheries Mechanism (CRFM) should be actively engaged as a partner to assist in training and providing technical advice. Other organisations involved in participatory management of MPAs such as the Caribbean Natural Resources Institute (CANARI) should also be engaged.

Schools should be singled out for awareness building through fun, creative means. Jamaica (and Tobago, although it is not a target country) has some best practice for engagement of schools in monitoring programmes. The Caribbean Examination Council (CXC) should be engaged to develop and/or expand school curricula. Given widespread concerns articulated on the impact of wastewater on marine ecosystems, there is need for continuous short courses of a practical nature in wastewater management and water quality monitoring. This can be done in conjunction with agencies such as The Caribbean Water & Sewerage Association Inc. (CAWASA) and the Caribbean Water and Wastewater Association (CWWA). While developing and sustaining degree programmes for the region will be an expensive proposition, the programme should explore the opportunities for attachments at Universities and technical institutions for technical officers at the relevant Ministries and Government agencies which have responsibility for management of Coastal and Marine resources. The Centre for Resource Management and Environmental Studies (CERMES) at the University of the West Indies has programme options that should be explored. In addition, the Programme should engage the support of the Caribbean Community Climate Change Centre (CCCCC) for mainstreaming aspects of training.



Recognising the lack of or inadequate

capacity in Member States as an endemic problem, regional institutions of CARICOM were established, for among other things, to provide support in various technical areas. As the technical agency which is expected to sustain the programme, there will be need to build capacity at CEHI in addition to other relevant regional agencies which are expected to give continued support to this Programme beyond the shelf life of the Projects.

Legal/Policy Framework

Generally speaking, MPAs within the target countries have been designated on the basis of a legal framework such as an act of Parliament. Belize, for instance has 13 marine protected areas; in St. Lucia, two have been declared while in St. Kitts and Nevis, there are no declared MPAs but commitment to the proposed MPA at the South East Peninsula of the island. At the same time, countries have adopted relevant international conventions and protocols such as the Protocol concerning Specially Protected Areas and Wildlife Species (SPA), RAMSAR Convention and the Protocol for the Land Based Sources of Marine Pollution (LBS) derived from the Cartagena Convention. While legal commitments have been made by Governments, there is a lack of integration of the provisions of the instruments within national legislation, policies and plans. This lack of coordination has resulted in diffuse and uncoordinated action or even inaction, related to the effective management of MPAs. Further, most of the countries have identified as a root cause, the lack of integrated spatial planning occasioned by the lack of a policy for land use. This has resulted in unplanned or even ad hoc coastal development. This is especially worrisome since tourism is the mainstay of countries such as Grenada, Dominica, Jamaica and St. Lucia and touristic development takes place in the coastal zones and the impact on the coastal areas have already been noted. The coastal areas also provide significant livelihood opportunities for fishing communities. While a land use policy is necessary, this is a politically and socially sensitive, complex issue so that many governments shy away from even addressing the matter. However, they do recognise the need for it. While it is beyond the scope of this Programme, it is recommended that supporting catalytic action at least will be an important input in engaging the various governmental agencies and other stakeholders in a dialogue regarding land use.

There is need nonetheless for an examination of the national legal and policy frameworks for MPAs which exist in the countries with a view to harmonisation and rationalisation in order to bring them in line with existing policies in related sectors such as for tourism and fisheries. Otherwise, there will continue to be a fragmented approach to MPA management. Since land based pollutants from point and non point sources have been identified as a major threat to the sustainability of the MPAs, additional effort is needed in countries which have signed the LBS Protocol to develop and implement coastal recreational water quality guidelines. St. Lucia for instance has already developed such guidelines supported by the United Nations Environment Programme and CEHI, and these can be reviewed and modified for the other target countries.

Monitoring/Indicators

Environmental monitoring regimes are rather patchy at best. While it is recognised that valuable, relevant data and information are available on various aspects of coastal and marine resources, locally and regionally, a regional framework for capturing, storing, processing and dissemination of information is emerging as a key element/action to support the sustainability of this and other initiatives. The strength and usefulness of a regional system would be dependent in large measure on capacity and interest at the national level. Such a system therefore should be user-driven. On the whole, monitoring systems have been largely project-derived and in many instances, after significant investment, have not been sustained. There is a need for determining and agreeing on relevant indicators and for establishing monitoring regimes in each of the programme countries. Given the sensitivity about environmental quality data and the reluctance to share information and data, relevant protocols must be decided on. Already the consonance has been determined between the KfW-funded project on Coastal Zone Management to be implemented by CCCCC, one key aspect of which is intended to address monitoring and information. The synergies between these two initiatives should be further explored.

Information and Communications

Information and communications were deemed another critical area for support under the Programme. While data and information are available that are of direct relevance to the Coastal and Marine Environment, use and dissemination of these data should be carried out using efficient and affordable platforms. In this regard, an examination should be done of work already completed or in the pipeline in projects such as the BMU funded, TNC implemented International Climate Initiative- Climate-Resilient Eastern Caribbean Marine Managed Areas Network (ECMMAN) Programme which has a component on Decision Support Systems.

It is necessary for the Programme to engage expertise from the outset to develop and implement a communications and awareness programme. The GEF-Funded IWCAM Project and others should be reviewed with a view to determining best practices as well as to build on the networks already established or to build new ones, where necessary. The important factor would be to recognise the need for a participatory approach, building on a solid foundation of a good communications strategy. The application of technology in a Project Communication Strategy is also important and the use of the social media such as Facebook and other internet based medium should be explored. Text messaging for instance is being used in communities to convey quick but important messages since cell phone use in the Caribbean is at a sufficiently high level even in remote communities to make this feasible and effective.

The media (radio, newspapers and television) should be engaged from the very outset, since they play an important role in publicising messages, delivering information and shaping public opinion. Several of the countries such as Dominica, St. Kitts and Nevis and Grenada clearly indentified the need to engage communities and other public, including policy makers and planners. The means of conveying messages are generally culture -

bound so that distinct cultural and social elements, including language, must be factored into any programme targeted to specific groups. For example the case of the Mennonite Community in Belize and the communications issues that have been identified e.g. the need to communicate through village elders, warrant special attention so as to determine the best available options.

Suggested Programmatic Issues and Modes of Delivery

National Level

1. Once the Programme Unit at CEHI is established, the government Focal Point (Ministry of Environment) in the target countries should be clearly identified and formal communication sent regarding the Programme and details of start up.
2. The Ministry should be asked to identify a National Counterpart (TOR should be prepared for this) and a written commitment regarding counterpart contributions should be requested from the Ministry.
3. The Ministry should be asked to set up a Stakeholder Committee for the Programme or designate an existing one which can be built on. It is recommended that the Programme prepare a draft TOR for this Committee.

Regional Level

1. Consideration should be given to the establishment of a Programme Steering Committee comprising the Focal Point from each country (TOR to be prepared)
2. Consideration should be given to establishing a Regional Advisory Group whose focus will be to give technical direction to the program. It should comprise regional experts from key areas of relevance to the Program. (e.g. Climate Change, Coastal Zone, Marine, Communications).
3. The Programme should support and become a part of the Global Environment Facility Integrating Watershed and Coastal Areas Management/ Integrating Water Land and Ecosystems (GEF-IWCAM/GEF-IWECO) Partnership Forum which is designed as a network of persons and agencies, donors, etc. working in the field.
4. In order for uptake to the policy and political level, the CARICOM Secretariat and the OECS Secretariat should be engaged/represented on the Steering Committee.
5. All attempts should be made to have the Programme placed on the agenda of the OECS Ministers of Environment Meetings as well as the Meetings of the CARICOM Council for Trade and Economic Development (Environment COTED) when these occur.
6. The engagement of CBOs and NGO's to assist with programme implementation at the national and regional level is necessary, notwithstanding the fact that many of them need strengthening.
7. The Programme should "piggy back" or undertake value added activities to those already planned by other related projects. This should be negotiated on a case by case basis but also through formal (but simple) Memoranda of Understanding.
8. Where "centres of excellence" exist, implementation should be contracted out as relevant, based on a good track record and expertise.

9. A ground- up, participatory approach is necessary to ensure that there is stakeholder buy-in.
10. From the very outset of programme implementation, there should be a sustained communications and awareness strategy with adequate resources, including staffing (a permanent counterpart within the Regional Programme Unit).
11. The Programme should employ the relevant information technology to support activities such as for training and communications (webinars, Facebook and other social media).
12. Stakeholders emphasised that they were more interested in concrete, on-the-ground interventions rather than studies and research, much of the latter having already been done.
13. The suggestion is made for using national and regional experts where they exist.
14. Synergies must be established with regional and national projects such as the Caribbean Challenge executed by The Nature Conservancy (TNC), GEF-IWEco, and the Global Environmental Facility Caribbean Revolving Fund for Wastewater (GEF-CReW). The same should apply to regional organisations such as the Caribbean Community Climate Change Centre (CCCCC), the Caribbean Regional Fisheries Mechanism (CRFM), the University of the West Indies (UWI), the Caribbean Water and Sewage Association (CAWASA), the Caribbean Water and Waste Water Association (CWWA) and the Caribbean Natural Resources Management Institute (CANARI), the United Nations Environment Programme, Caribbean Regional Coordinating Unit (others to be determined).
15. CEHI's internship Programme should be supported as a means of delivering on actions in the program, using graduate students within and outside of the region.
16. The Programme should seek to foster technical cooperation among countries (TCC) as a means of exchange of experiences and expertise both within and outside of the Caribbean.