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Third Meeting of the Scientific, Technical and Advisory Committee (STAC) to the Protocol concerning Pollution from Land based Sources and Activities in the Wider Caribbean.

Miami, Florida, USA, 31 October to 2 November 2016

**REPORT OF THE ACTIVITIES FOR THE
LBS REGIONAL ACTIVITY CENTRES
IMA (Trinidad and Tobago) AND CIMAB (Cuba)
FOR 2015-2016**

For reasons of economy and the environment, Delegates are kindly requested to bring their copies of the Working and Information documents to the Meeting, and not to request additional copies.

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Activities report 2015 – 2016
Regional Activity Center (RAC) for the LBS Protocol - CIMAB, Havana, Cuba

Project Name and Code	Activity	Dates of Activity	Objectives	Source of Funds	Budget (USD)	RAC-CIMAB contribution (Cuban pesos)	Recipients/Participants	Outputs
SSFA: [“Human resources strengthening for domestic wastewater assessment in Spanish-speaking countries participating in the GEF CReW Project”] (GFL-2324-2732-4A58-[1161 and 2161]).	<p>1) Technical assistance by RAC CIMAB specialists during two (2) dissemination events to be held in Guatemala on regulations and technologies for wastewater management and treatment</p> <p>2) Outreach workshop on the Cartagena Convention and the LBS Protocol held in Honduras</p>	<p>October 2014 - June 2016</p> <p>Havana, Cuba.</p>	<p>1) Providing technical assistance with the monitoring and the assessment of wastewater to Spanish-speaking countries participating in the GEF CReW Project.</p> <p>2) Supporting Spanish-speaking countries participating in the GEF CReW Project as regards the coordination of national and regional activities related to the Project.</p>	UNEP-CAR/RCU GEF – CReW Project	<p>Total budget: 55,000.00</p> <p>Initial payment: 41,000.00</p> <p>Implemented: 23,200.00</p> <p>Refunded to the CAR/RCU: 17,800.00 (<i>unused funds for reasons non attributable to RAC-CIMAB</i>)</p>	60,000	RAC-CIMAB, Panama, Costa Rica, Honduras and Guatemala.	<p>1) The awareness of appropriate domestic wastewater management and treatment technologies has been strengthened in four municipalities of the Guatemalan Caribbean coast.</p> <p>2) 12 specialists from the four Spanish-speaking countries (three per country) participating in the GEF CReW Project have been trained in industrial and</p>

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	<p>3) Theoretical-practical training on “Monitoring and Assessing Domestic and Industrial Wastewater” for 12 specialists from the four Spanish-speaking countries (3 per country) participating in the GEF CReW Project</p> <p>4) Coordination and assistance with the design and the implementation of country-specific activities in Costa Rica, Honduras and Guatemala, as part of the GEF CReW Project</p>		<p>3) Providing technical assistance with the dissemination of appropriate technologies for domestic wastewater management.</p>					<p>domestic wastewater management and treatment techniques.</p> <p>3) Reports of conducted workshops and trainings.</p> <p>4) Progress report on the implementation of activities in countries.</p>
<p>Non-Programme Associated Project (PNAP) “Environmental Quality Monitoring in the bays of Cuba</p>	<p>Task 1: Compile the necessary information and bibliographical search on the ecosystem in question for the creation of the database</p> <p>Task 2: Assess the main water quality indicators</p>	<p>Puerto Padre, Nipe y Cienfuegos Bays in 2015 y Nuevitas, Matanzas y Guantánamo Bays 2016”</p>	<p>1) Update the hydro-chemical and sanitation quality of the bays in the water column</p> <p>2) Determine the current organic and inorganic contamination levels</p>	<p>Government of Cuba</p>	<p>2015: Cienfuegos (127 000 CUP, and 3 400 CUC) Nipe (130 000 CUP y 2 700 CUC) Puerto Padre (133 000 CUP 1 700 CUC)</p>		<p>Cimab and local authorities</p>	<p>▪ Result 01: Updated inventory of land-based sources of pollution</p> <p>▪ Result 02: Control of the environmental quality of the marine</p>

<p>Task 3: Assess the sanitation quality of bathing waters</p> <p>Task 4: Determine the current levels of organic and inorganic contaminants</p> <p>Task 5: Determine the current levels of heavy metals in sediments</p> <p>Task 6: Assess the degree of deterioration of the natural communities</p> <p>Task 7: Analysis and comparison of the results obtained with historic records</p> <p>Task 8: Update the inventory land-based sources of pollution to the ecosystem</p> <p>Task 9: Analysis of the effectiveness of the mitigation measures proposed in previous studies</p> <p>Task 10: Preparation of partial reports of each results and the executive summary</p>		<ol style="list-style-type: none"> 3) Determine the current levels of heavy metals 4) Assess the degree of deterioration of the natural communities through studies with biological indicators 5) Update the inventory of land-based sources of pollution 6) Assess the effectiveness of mitigation measures established in the land-based sources of pollution to reduce pollutant inputs to the bay 		<p>2016: Guantánamo (114 000 CUP y 4400 CUC) Nuevitas (120 000 y 5 300 CUC) Matanzas (110 000 y 3 400 CUC)</p> <p><i>CUP: Cuban Pesos</i> <i>CUC: Convertible Cuban Pesos</i></p>			<p>ecosystem</p> <ul style="list-style-type: none"> ▪ Result 03: Evaluación de la efectividad de las medidas propuestas para el control y mitigación de las afectaciones a la zona costera estudiada. ▪ Executive Summary
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<p>PNAP Programme “</p>	<ol style="list-style-type: none"> 1. Monthly samples of the toxic, bacteriological, chemical and physical indicators in the bay waters 2. Monthly samples of environmental quality of the rivers and drains that flow to the bay. Determine the pollutant load. 3. Determine the pollutant of 10 facilities that flow directly or indirectly to the bay on a yearly basis 	<p>Annual monitoring with monthly samples</p>	<ul style="list-style-type: none"> • Diagnose and update the hydro-chemical and sanitation quality, and toxicity in the bay waters and sediments • Provide an updated status of the environmental quality of the bay, showing the variations (positives or negatives) of the situation. • Update the pollutant load that reaches the Havana Bay through the main sources: rivers, drains and industrial sources 	<p>State Working Group for Sanitation, Development and Conservation of Havana Bay</p>	<p>250 000 CUP 30 000 CUC</p> <p><i>CUP: Cuban Pesos</i> <i>CUC: Convertible Cuban Pesos</i></p>		<p>Cimab and Havana city and bay authorities</p>	<ul style="list-style-type: none"> ▪ Annual report on the updating of the environmental quality of the Havana Bay ecosystem ▪ Annual report on the pollutant load from the main sources of land-base pollution (rivers, drains and industries)
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Related activities:

- One RAC-CIMAB specialist participated in the **Regional GEF- CReW and GWP-CAM Workshop for Journalists focused on Wastewater** held in Panama City (Panama) on July 2014.
- The Director of RAC-CIMAB, along with one specialist, participated in the **Second Meeting of the Contracting Parties (COP) to the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol)** in the Wider Caribbean Region, and the **Sixteenth Intergovernmental Meeting on the Action Plan for the Caribbean Environment Programme (IGM16) and Thirteenth Meeting of the Contracting Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (COP13)** held in Cartagena (Colombia) on December 2014.
- One RAC-CIMAB expert participated in the **Regional Technical Workshop for Caribbean Sea Report (SOCAR)** in August 2016.
- Active participation in the **Regional Experts Group on Monitoring and Assessment** teleconferences conducted during the period, discussions and other activities conducted by the group since its creation with the intent of collaborating for developing the SOCAR (State of the Cartagena Convention Area).
 - Review and approve the questionnaire for the classification of coastal marine waters
 - Review and approve the questionnaire on environmental quality standards and standard methods to measure SOCAR parameters /indicators
 - Review and approve the template to collect the information to be included in SOCAR
 - Review the terms of reference for hiring the SOCAR consultant

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ACTIVITY REPORT 2015 – 2016
REGIONAL ACTIVITY CENTRE LBS-RAC/IMA, Trinidad and Tobago

Project Name and Code	Activity	Dates of Activity	Objectives	Source of Funds	Budget (USD)	Estimate of “in kind” Contribution of RAC-IMA (TT\$)	Recipients/ Participants	Outputs
Environmental Monitoring and Assessment of Hot Spot Areas in Trinidad	On-going water, sediment and biota monitoring. Parameters include nutrients, total suspended solids, total organic carbon, chlorophyll a, hydrocarbons.	Sampling conducted during the dry and wet seasons in 2015/2016 at sites within the Gulf of Paria, Trinidad	<p>To assess the contribution of land-based sources of pollution in Trinidad</p> <p>To establish tropical marine water quality standards and / or ambient guideline limits.</p> <p>To utilize oysters (<i>Crassostrea rhizophorae</i>) as biomonitors for hydrocarbon pollution.</p>	Government of Trinidad and Tobago	\$10,000	\$	Trinidad and Tobago	<p>Water quality data for selected hot spot sites in Trinidad.</p> <p>Water quality data for SOCAR report.</p> <p>Data used towards producing a State of the Marine Environment Report 2016 for Trinidad and Tobago</p>

Project Name and Code	Activity	Dates of Activity	Objectives	Source of Funds	Budget (USD)	Estimate of “in kind” Contribution of RAC-IMA (TT\$)	Recipients/ Participants	Outputs
Bacteriological water quality at popular recreational water-use areas in Trinidad	Sampling conducted during the wet and dry seasons at popular bathing beaches on Trinidad west and north east coast using both traditional methods and rapid assessment method (IDEXX)	Sampling conducted during the dry and wet seasons in 2015/2016 at sites within the Gulf of Paria, Trinidad	<p>To assess bacteriological water quality at popular recreational sites in Trinidad and detect trends- seasonal and /or tidal.</p> <p>To identify possible sources of sewage contamination and conduct environmental health assessments</p>	Government of Trinidad and Tobago	\$20,000		Trinidad and Tobago	<p>Bacteriological water quality data.</p> <p>Research Report.</p> <p>Data used towards producing a State of the Marine Environment Report 2016</p>

Project Name and Code	Activity	Dates of Activity	Objectives	Source of Funds	Budget (USD)	Estimate of “in kind” Contribution of RAC-IMA (TT\$)	Recipients/ Participants	Outputs
Monitoring of coral reef and seagrass beds in Trinidad and Tobago	<p>Coral reefs in Tobago are monitored annually to determine changes in % coral cover</p> <p>Productivity and biomass of seagrass beds at selected sites in Trinidad and Tobago are monitored 4 times per years</p> <p>Water quality sampling (nutrient, TSS, chl A) is conducted at 12 sites in SW Tobago four times per year</p> <p>Water quality sampling at 4 sites along the NW peninsula of Trinidad is collected 2 times per year</p>	2015-2016	To monitor ecosystem health and determine impacts from land-based sources of pollution.	<p>Government of Trinidad and Tobago</p> <p>IDB</p>	<p>\$25,000</p> <p>\$2,000</p>		Trinidad and Tobago	<p>Data on ecosystem health.</p> <p>Research reports and peer review publications.</p> <p>Water quality data for Tobago used in the CReWs project-Economic valuation of wastewater treatment conducted by WRI</p> <p>Data used towards producing a State of the Marine Environment Report 2016</p>

Project Name and Code	Activity	Dates of Activity	Objectives	Source of Funds	Budget (USD)	Estimate of "in kind" Contribution of RAC-IMA (TT\$)	Recipients/Participants	Outputs
Hydrobiogeochemical approach to the estimation of pollutant discharge from the Caroni River Basin	<p>Fine scale digital elevation model (DEM) development.</p> <p>Development of preliminary data products required for hydrological modelling, including estimating evapo-transpiration.</p> <p>Calibration and validation of the hydrological model using various objective functions used to assess the goodness of fit for the models.</p>	<p>On-going project</p> <p>2015-2016</p>	<p>To develop a spatiotemporally distributed hydrological simulation tool to estimate river discharge.</p> <p>To estimate the amount of sediment and nutrients (nitrogen and phosphorous species) discharged from the Caroni River Basin into the sea using isotopic analysis.</p>	<p>Government of Trinidad and Tobago</p> <p>UWI-Research Development Impact Funds</p>	<p>\$30,000</p> <p>\$10,000</p>		Trinidad and Tobago	<p>PhD thesis</p> <p>A spatiotemporal hydrological model of the discharge of the Caroni River Basin.</p> <p>Estimation of sediment and nutrient transport throughout the Caroni River Basin, the largest hydrometric area in Trinidad</p>

Related Activities:

1. Participated and presented at Second Regional Planning of the Caribbean Platform for Nutrient Management (24-25 February 2016), Port of Spain, Trinidad and Tobago.
2. Participated in Regional Workshop of Technical Experts Development of the State of Convention Area Report (SOCAR) for the Wider Caribbean Region (WCR), 15th to 17th August 2016, Kingston, Jamaica.
3. Participated in teleconferences during the 2015-2016 period- Working Group on Assessment and Monitoring. The objective of the working group is to provide feedback on the advancement of the outline of the SOCAR Report and on selection of water quality criteria parameters, treatment of data etc.
4. Participated in LBS WG Lab Capacity Questionnaire. Completed survey sent to Global Affairs and Policy Office of International and Tribal Affairs U.S. Environmental Protection Agency.
5. Participated in Questionnaire on Water Classification Systems and Standards of Water Quality Measurements in the Wider Caribbean Region. The objective of the questionnaire was to assess the Countries capacities in performing standard methods required for SOCAR Parameters and to assess the water classification system in countries to facilitate the production of the SOCAR Report.
6. Reviewed and provided feedback on the Standards methods for measuring the SOCAR Parameters
7. Reviewed the ToRs for hiring of consultant for SOCAR Report.
8. IMA's has been designated the alternate focal point for CLME+ project and is the national focal point for the Caribbean Marine Atlas (CMA2 project) regional initiatives.
9. IMA chaired a Steering Committee with responsibility to develop an Integrated Coastal Zone Management Policy Framework, Strategies and Action Plan for Trinidad and Tobago. The draft policy incorporates recommendations from the Trinidad and Tobago National Programme of Action for the Protection of the Coastal and Marine Environment from land-based sources and activities 2008-2013 produced 2008.

10. IMA is part of an initiative headed by the Environment Management Authority to address pollution in the Gulf of Paria, Trinidad. Dr. Darryl Banjoo made a presentation entitled “State of the Gulf of Paria, Trinidad and Tobago” on 7th September 2016, EMA's, North Office on 8 Elizabeth Street, St. Clair, Port of Spain that linked pollution and need for greater regulatory control.
11. IMA produced a State of the Marine Environment Report 2016 for Trinidad and Tobago which highlights impacts from land-based sources of pollution and provides recommendation for addressing impacts. An action plan was developed to address the issues identified in the report and sent to Cabinet for approval.