“Priorities in researcher related with environmental quality of Cuban bays and coastal areas”

EU-Caribbean Workshop on Marine Cooperation

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¿Who we are?

Research institute with financial autonomy (self-financed), subordinated to the Ministry of Transport of Republic of Cuba. As research institute we receive guidance methodologies of the Ministry of Science, Technology and Environment (CITMA).

40 years of experience

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Empresa Cimab

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Coastal Marine Environmental Management Division

The mission of this division is to contribute to the preservation of the marine environment, through the investigations and application of scientific and technical solutions.

This Division has a lab essays acredited by Norm NC ISO 17025:2017 of the Republic of Cuba

Since 2002, Cimab is one of the Regional Activity Center (RAC) of the LBS Protocol of the Cartagena Convention (Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region)

Coastal /Marine Thematic Research

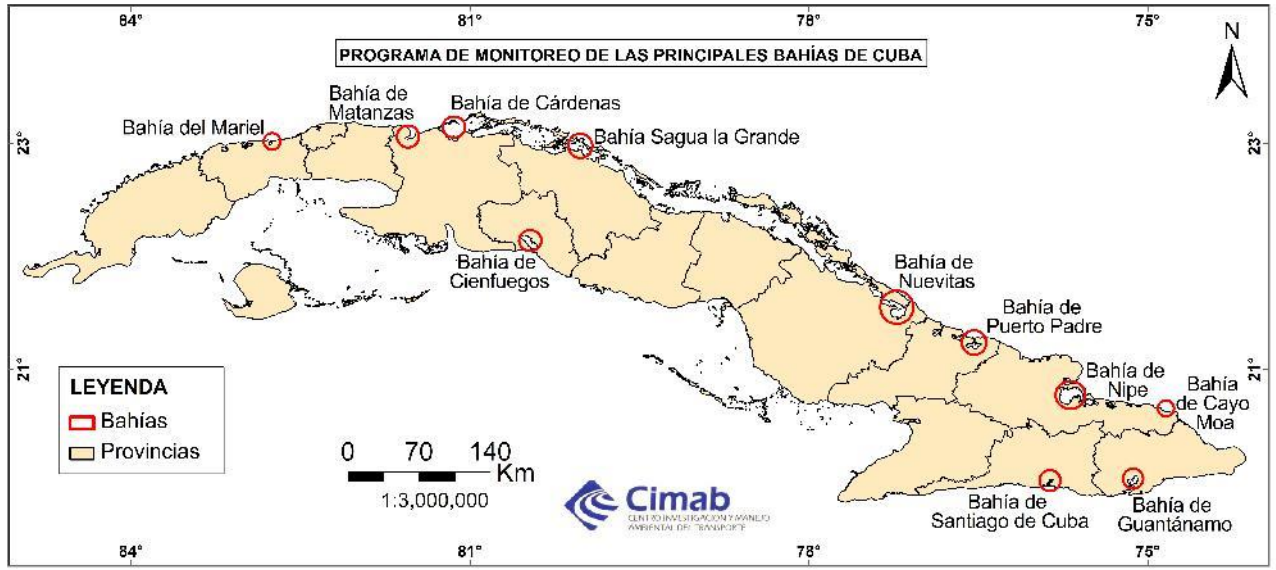
- Environmental Impact Assessment (EIA) in coastal areas and deeper waters
- Environmental line base studies for marine and coastal ecosystems
- Studies of environmental quality of marine and coastal ecosystems, including analytical lab essays physical, chemical and microbiological indicators in samples of water, sediments and biota
- Projects of evaluation and management of liquid and solid waste, including flow measurement and physical chemical characterization of wastewater (domestic and industrial waste)
- Dredging and coastal engineer projects
- Oceanographic and hydrographic projects

National Project:
"Environmental monitoring for mains bays in Cuba"
Financed by
Cuba Government
(Science and Environmental Minister, CITMA)

1.- Update of the inventory and analysis of principals land based sources of pollution (LBS) of each bays

2.-Evaluation of the marine pollution by the analysis of physical, chemical and bacteriological indicator of the water and sediment (include nutrients, organic matter, organic and inorganic toxic indicators, heavy metals, hydrocarbons, etc.)

3.- Historical record and evolutions of the environmental quality of the ecosystems



CIMAB RESEARCH PRIORITIES AND CAPACITY BUILDING NEEDS

Create capacities (analytical and human resources) for the execution of projects on emerging pollutants (microplastic) and strengthen existing capacities for the determination of the indicators included in SDG Goal 14

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Indicators: 14.1.1 (a) Index of coastal eutrophication and 14.1.1 (b) plastic debris density

Indicator 14.1.1a: Index of Coastal Eutrophication (including ICEP)

Proposed indicators and levels to ODS 14.1.1a:

Level 1: Proposed global indicators	**Level 2: Proposed national indicators**	**Level 3: Supplementary indicator**
• Indicator for Coastal Eutrophication Potential (based on Nitrogen and Phosphate loadings) (training need) • Chlorophyll-a deviations and anomalies (training need)	• Chlorophyll-a concentration (laboratory supplies) • National modelling of coastal eutrophication potential (training need) • *In-situ* concentration of nitrogen, phosphate and silica	Other water parameters (Oxigen % saturation, Secchi depth, river discharge, salinity, temperature, pH, alkalinity, organic carbon, toxic heavy metals, persistent organic pollutants) (institutional strengthening, laboratory equipment and supplies)

Indicator 14.1.1.b: Marine plastic debris

Proposed indicators and levels to ODS 14.1.1b:

Level 1: Proposed global indicators	Level 2: Proposed national indicators:	Level 3: Supplementary indicators:
• Plastic patches greater than 10 meters (for Areas Beyond National Jurisdiction or Total Oceans) • Beach litter originating from national land-based sources	• Beach litter count per km2 of coastline (surveys and citizen science data) • Floating plastic debris density (visual observation, manta trawls) • Water column plastic density (demersal trawls) • Seafloor litter density (benthic trawls)	• Beach litter microplastics • Floating microplastics • Water column microplastics • Seafloor litter microplastics (sediment samples) • Plastic ingestion by biota (e.g. birds, turtles, fish) • Plastic litter in nests • Plastic pollution potential (based on the use and landfilling of plastics)

Training need and institutional strengthening (laboratory equipment and supplies)

Cuban institutions that carry out research in MARINE ECOSYSTEMS

Centro de Investigaciones Marinas (Universidad de La Habana)	CIM.UH Centro de Investigaciones Marinas Universidad de La Habana	http://www.cim.uh.cu/
Instituto de Ciencias del Mar (CITMA)	ICiMAR INSTITUTO DE CIENCIAS DEL MAR	http://www.icimar.cu/
Centro Nacional de Áreas Protegidas (CITMA)	Centro Nacional de Áreas Protegidas CNAP	http://www.snap.cu/

Cuban institutions that carry out research in MARINE ECOSYSTEMS

Centro de Estudios Ambientales de Cienfuegos (CITMA)	CEAC Centro de Estudios Ambientales de Cienfuegos ... un puente al desarrollo sostenible	http://www.ceac.cu/
Centro de Investigaciones pesqueras (MINAL)	CENTRO DE INVESTIGACIONES PESQUERAS CIP	http://www.cipnet.cu/
Entro de Investigaciones de Ecosistemas costeros (CITMA)	CIEC CENTRO DE INVESTIGACIONES DE ECOSISTEMAS COSTEROS	http://www.ciec.cu/