Strengthening of the Marine Meteorological System in Cuba

THE PROJECT

The project aims to strengthen the Cuban marine meteorological system through the use of information from Synthetic Aperture Radar, (SAR), and SEonSE service tools, to improve the effectiveness of the National Marine Forecasting System of the Institute of Meteorology, (INSMET), in case of extreme hydro-meteorological events; The project also aims to strengthen the initialization processes of the PETROMAR - 3D model, starting from satellite information and the evaluation of its effectiveness in predicting the dispersion of oil at sea; and introduce new hydro-meteorological and environmental services with more complex technology that can respond to the variability of climate change and improve the alert and dissemination of information, useful for the prevention of disasters among the population.

BACKGROUND

The Cuban archipelago is very vulnerable to global climate change, since it is a small island state located in the tropical region of the planet. The climate in Cuba is now hotter and more extreme than in the past, and in the last forty years there has been a rise in sea level parallel to the retreat of the coastline, with consequences also in terms of saline intrusion of underground aquifers . A strong variability in cyclonic activity has also been observed, and it is expected that intense hurricanes and other extreme weather events will continue to pose the greatest danger to the country in the future, causing coastal flooding and destruction of natural and human heritage. Climate change, therefore, is aggravating and will aggravate in the future the environmental, economic and social problems in the nation, gradually becoming a determinant issue of sustainable development.

CONTRIBUTION TO

- 2030 Agenda: Goal 13 Climate
- NDC CUBA

OBJECTIVE

Strengthen the Cuban marine meteorological system to improve the effectiveness of the National Forecast System for the purposes of adaptation to climate change.

PLANNED ACTIVITIES

- Strengthening the effectiveness of the INSMET marine forecast system, towards extreme weather events, through the training of experts in predicting wind, tidal and marine current fields, carrying out an evaluation of the marine forecast system and proposals to improve its effectiveness, and the publication of an article with the results.
- Strengthening the PETROMAR – 3D model initialization and evaluation processes, starting from high resolution satellite information, through the training of experts in satellite image processing, the creation of a report on the results of the model initialization and evaluation process, and the publication of an article with the results.
- Improving existing hydro-meteorological and environmental services, and introduction of, at least, one new service through the training of experts in process automation, the identification of possible changes in services in line with the introduced technology and new needs, the assessment of satisfaction with the improved and introduced services, and the INSMET Scientific Council approval of the proposed modifications in the state commitments and in the scientific-technological services.

SUBJECTS	DURATION	TOTAL COST OF THE INITIATIVE
Promoters: • Ministry of the Environment and Ecological Transition (MITE) • Ministry of Science, Technology and Environment (CITMA) **Actuators**:	3 YEARS (2019-2021)	**€ 1,569,653.80** MITE contribution: € 1,204,216 CITMA contribution: € 275,737.80 INSMET contribution: € 89,700

- Institute of Meteorology (INSMET)
- UNDP

OUTPUT

- Acquisition of high-performance IT equipment.
- Evaluation of the INSMET marine forecasting system with proposals for improvements.
- Report on the initialization process' results and evaluation of the model used.
- Approved proposal of possible changes in existing hydro-meteorological and environmental services.
- Evaluation of the satisfaction levels with the improved and introduced hydro-meteorological services.
- Experts trained in the estimation of wind fields, waves and ocean currents, in the elaboration of satellite images, in the automation of processes.
- Publication of studies.
- Final project workshop.
- Creation of a brochure.

Status of the project ✓realized ✓in progress