

International Atomic Energy Agency's (IAEA) contribution to the SG report on the implementation of UN General Assembly resolution 73/229, entitled "*Towards the sustainable development of the Caribbean Sea for present and future generations*"

The International Atomic Energy Agency (IAEA), through its regional and national technical cooperation projects in Latin America and the Caribbean, contributes to build human and institutional capacities for monitoring coastal erosion, ocean acidification, harmful algal blooms and microplastics in the Caribbean Sea. Nuclear, nuclear-related and isotopic techniques are used to measure and monitor the impacts of ocean acidification, to analyse harmful algal bloom events and assist in identifying the sources of pollution in the sea — essential information for populations that relies heavily on the sea for their food and income.

In 2021, the IAEA launched the Nuclear Technology for Controlling Plastic Pollution -NUTEC Plastics initiative that aims to assist IAEA Member States in integrating nuclear and nuclear-related techniques in their efforts to address challenges of plastic pollution. It provides science-based evidence to characterize and assess marine microplastic pollution, while also demonstrating the use of ionizing radiation in plastic recycling, transforming waste into reusable resources.

Regional observatories have been established in Colombia, Costa Rica, Cuba, and Mexico to provide data on a monthly basis about ocean acidification in the Caribbean Sea. In addition, the IAEA has supported two regional reference centers in Colombia (INVEMAR) and Cuba (CEAC) to detect marine biotoxins during harmful algal blooms and to develop a national alert system to control and manage the blooms.

The IAEA support focuses on harmonization of monitoring methodologies and sampling and sample preparation, and sample analysis protocols, human resource development to monitor marine stressors through the transfer of nuclear technologies, and on strengthening analytical capacities of collaborating laboratories in the region through acquisition of specialized equipment. Ocean acidification and microplastic monitoring kits are being provided to analytical laboratories in Antigua and Barbuda, Belize, Dominica, Trinidad and Tobago, as well as Jamaica which also received a specialized equipment (micro FTIR) that allow the characterization and quantification of microplastics.

Nuclear techniques have been used to analyse sediments and heavy metals in the Caribbean Sea. The results are reported to decision-makers for the articulation of policies and strategies on marine and coastal resources management. For instance, nuclear techniques have been applied to determine the elemental composition of sargassum bloom in the Caribbean.

The IAEA has also facilitated the creation of a regional marine network, REMARCO, (*Red de Investigación de Estresores Marino-Costeros de Latinoamérica y el Caribe*) that connects countries in the region to provide scientific data through the use of nuclear and isotopic techniques to address common challenges and vulnerabilities in a view to contribute to sustainable marine management and SDG 14.