PROTECTING THE MARINE

1 The Cienfuegos Environmental Studies Centre (CEAC) in Cuba is a marine environmental research centre with expertise in nuclear and isotopic technologies. Cuba's food security, transportation and tourism depend upon a healthy marine environment. CEAC scientists master resource challenges to produce the validated data needed for better environmental management.

2 The refurbished CEAC laboratory is able to perform complex analysis using donated equipment, including some procured through IAEA technical cooperation support, such as gas chromatography, high-resolution gamma spectrometry and microwave digestion systems. CEAC scientists undertake research, advise on environmental management, engineer solutions for environmental challenges, and monitor pollution.

3 Miguel Gómez Batista, a CEAC scientist and IAEA technical cooperation (TC) fellow at the IAEA Environment Laboratories in Monaco, studies how arsenic accumulates in Cienfuegos oysters. Carlos Alonso Hernandez, CEAC's lead researcher, said, "Thanks to the IAEA's TC programme, CEAC uses nuclear techniques to solve environmental problems in its marine ecosystems and coastal areas."

4 Without scientifically validated monitoring data, Cuban policy-makers found it difficult to take action against marine pollution. Now, CEAC scientists use gamma spectrometry to detect radioisotopes like lead-210 that help register in great detail pollution accumulation in sediment over several decades. This insight helps policy-makers develop and assess effective prevention and remediation strategies.

ENVIRONMENT IN CUBA

5 A scientist analyses toxins released by 'red tides', or harmful algal blooms (HABs), which accumulate in seafood, posing a risk to human consumers. Michel Warnau, Head of the IAEA's Radioecology Laboratory said, "Through the commitment of its staff CEAC became a regional centre of excellence, supporting other countries in the region."

6 CEAC participates in regional TC projects in Latin America. Through a bio-monitoring network that cooperates with the IAEA, ARCAL (a regional cooperation agreement), UNEP and GEF, CEAC and Cuba help determine the impact of chemical contamination, HABs, climate change and ocean acidification on communities and marine ecosystems' sustainability throughout the region.

7 Regional projects helped CEAC expand its expertise to investigate marine environmental processes. CEAC's scientists now mentor peers in the region, conduct IAEA TC training courses and undertake expert missions throughout the region. CEAC serves as a resource centre for the Caribbean region, e.g. by providing analytical services.

8 CEAC participates in the IAEA's coordinated research projects, which bring together researchers from around the world to address a shared problem. CEAC anticipates increased cooperation with the IAEA, UNEP, GEF and the International Centre for Theoretical Physics, as well as regional collaboration to enable coordinated and effective action on regional environmental issues.

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