

Developing national capabilities to monitor and assess marine radioactivity in the Asia and the Pacific region

The challenge...

While the safe operation of nuclear power plants does not have the adverse environmental effects associated with the burning of fossil fuels, there may be potential risks from planned and unplanned releases of radionuclides from nuclear power plants into the marine environment. More than 20 of the world's operational nuclear power plants are in the Asia and the Pacific region. Adequate national capabilities and sustainable programmes to monitor and assess radioactivity in the marine environment, and to ensure that there are no significant impacts from radionuclides on marine biota, are essential.

The project...

Through an IAEA technical cooperation (TC) project carried out under the Regional Cooperation Agreement in Asia and the Pacific (RCA), the IAEA helped 13 Member States in the region to establish a benchmark for assessing the radiological impact of nuclear power activities on the marine environment. The TC project also provided assistance in the establishment of a documented quality management system (ISO 9001) for regional marine radioactivity monitoring programmes and helped to expand an existing regional database (ASPAMARD¹) by incorporating new data from national monitoring programmes.

A total of five regional meetings and nine expert missions were conducted. In addition, four regional training courses were carried out on topics covering the application of nuclear techniques for measurement of nuclear contaminants, dose response and risk assessment for marine organisms, nuclear and stable isotope tracers and transfer and dose assessment for marine organisms.

The impact...

The project was an important step in promoting and strengthening coordinated approaches for regional marine radioactivity monitoring, and in the refinement of risks associated with consuming seafood. Information from the regional database, updated with new data from the national monitoring programmes, was used to identify large-scale oceanographic circulation processes and establish better-defined benchmarks on radionuclide concentrations in the marine environment.

The project also helped to generate essential pre-Fukushima baseline data, against which data collected under follow-up projects can now be measured. A follow-up TC project is now successfully using this data to help RCA Member States assess and evaluate the extent and possible impact of the releases of radioactivity from the Fukushima Daiichi nuclear power plant into the marine environment.

Furthermore, the project has promoted cooperation and partnerships within the region. As a result, it has strengthened collaboration between national nuclear agencies and research organizations, environmental authorities and universities, and has created a basis for potential partnerships. This enhances information sharing and supports the development of integrated regional response strategies for marine conservation.



Seafood is an affordable staple food in most countries in Asia and the Pacific, especially in island states such as the Philippines

Technical cooperation project RAS/7/016: Establishing a Benchmark for Assessing the Radiological Impact of Nuclear Power Activities on the Marine Environment in the Asia-Pacific region (RCA)