

# Developing capacity for rapid response in the network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA)

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## Content

The International Atomic Energy Agency has established in 1995 the Network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA) with the objective to ensure that reliable data can be reported by the member laboratories in a timely manner in case of accidental or intentional radioactive contamination of the environment. In 20 years the network developed from 24 laboratories in 15 countries to 156 laboratories in 85 countries and continues to grow at a rate of up to eight laboratories every year. The IAEA supports member laboratories to improve, maintain and document the quality of the analytical data they produce in both routine and emergency situations. Professional networking, communication and capacity building through exchange of expertise are key to the development of the network and its participation in methodological development and IAEA reference material certification. Given the broad interests of member laboratories, the technical and strategic challenges are to support through network activities the development and use of methods improving precision, accuracy, sensitivity and response time. A group of ALMERA laboratories has also registered into the IAEA's Response and Assistance Network (RANET), which provides international assistance, upon request from a State, following a nuclear or radiological incident or emergency.

In the wake of the Fukushima Daiichi Nuclear Power Plant accident there was increased interest in rapid assessment methods. This interest was addressed by the IAEA through specific training courses, coordination of joint development and validation of rapid radioanalytical methods and organisation of customized proficiency tests (PTs). The yearly PTs involve six environmental and food samples, typically prepared by spiking natural matrix materials with anthropogenic and natural radionuclides. The radionuclides and levels are chosen so as to be relevant to the measurement of environmental radioactivity of different origins and to continuously challenge the participants. Radiochemical and counting techniques are comprehensively tested, with a reporting time of the order of several months. In addition, rapid reporting is requested for selected radionuclides and samples three days after the registered reception of the set of PT samples. This paper analyses the performance of the network laboratories in these rapid measurements over a period of three years, points out the strengths and areas needing improvement and describes the way the latter are addressed through methodological guidance and training.

## About the Presenter

Dr. Iolanda Osvath works as research scientist in the IAEA Environment Laboratories in Monaco. She is the coordinator of the ALMERA network and section head of the Radiometrics Laboratory, which operates a low-level underground counting facility in Monaco. Her research interests include marine radioactivity measurement, modelling and assessment, radiotracer applications to marine studies, low-level and underwater gamma-ray spectrometry.

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