IAEA Technical Cooperation Programme

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Supporting product quality in Latin America

The challenge…

Industries and trade must be able to demonstrate the quality of their products and their compliance with regulatory requirements and market demands if they are to participate in local or export markets. In addition, data from laboratory analyses must be proven reliable and traceable before they can be used for evaluations and decisions. For this, laboratories participate in proficiency tests and use reference materials to validate analytical methods and ensure the quality of results.

Studies in Latin America and the Caribbean have shown this kind of analytical information to be scarce and of poor quality, affecting the ability of decision makers to minimize environmental health risks. Countries do not have locally organized proficiency tests or cannot produce reference materials, and lack analytical knowledge, qualified personnel, funding to establish a good laboratory infrastructure and appropriate quality management systems. An efficient quality assurance and control system with adequate quality assurance and control procedures is of crucial importance.

The project…

A regional IAEA technical cooperation project was set up to contribute to the self-sufficiency of Latin American and Caribbean laboratories by improving analytical quality control systems and the preparation and certification of matrix reference materials that support trade, science, environment and industry.

The project provided training in quality control, as well as in proficiency testing using nuclear analytical and related techniques. Training on the preparation of reference materials was also carried out. The project has facilitated the deployment of common reference materials, allowing comparisons of results between laboratories. The project also supported the sharing of efforts and the optimization of capacities and knowledge of more experienced laboratories.

The impact…

Analytical performance in 80 participating laboratories in 17 Member States increased. In El Salvador and Paraguay, national networks of laboratories were established for the exchange of information and experience in the harmonization of analytical measurements, standards were established and certified reference materials prepared. Also in El Salvador, a number of laboratories achieved qualification for technical competence on the basis of the ISO 43 standard. In Uruguay, new laboratories were commissioned to support new areas of analysis, including standards and materials for the determination of ^{90}Sr in food and ^{3}H in water. Also in Uruguay, and in Peru, new laboratory capabilities to prepare reference materials have reduced import costs .

Overall, the capacity and quality of the institutions involved in the project have improved greatly. Most are now able to prepare reference materials and to implement proficiency tests in other national laboratories (Argentina, Bolivia, Costa Rica, El Salvador, Guatemala, Mexico, Peru and Uruguay).

Technical cooperation project RLA/2/014: Improving Analytical Quality Through Quality Assurance Training, Proficiency Testing and Certification of Matrix Reference Materials Using Nuclear Analytical and related Techniques in the Latin American Nuclear Analytical Technique Network (ARCAL XCVII)