

# International Conference on the Management of Naturally Occurring Radioactive Materials (NORM) in Industry

VIRTUAL EVENT

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## Running the environmental monitoring programme in Cameroon: From exploration and mining to site characterization and remediation

Mining activities are growing in Cameroon. The Law No2016/017 of 14 December 2016 instituting the mining code in Cameroon was enacted by the President of the Republic. From 2014-2018 a project funded by the World Bank on strengthening the capacities in mining sector of Cameroon was implemented by the Ministry of Mining, Industry and Technological Development with the assistance of the Institute of Geological and Mining Research and the French Bureau of Geological and Mining Research. The second phase of the project will start soon. As main results of the project, more than three hundred anomalies of mineral resources were discovered. Uranium, thorium, gold, diamond, bauxite, copper, rutile, cobalt, and iron, rare-earth metals were evidenced ranking Cameroon among the countries with important underground mineral resources. Various activities were organized by the Government to promote mining activities in Cameroon. The third Cameroon International Investment Mining and Exhibition Conference (CIMEC2019) was organized in September 2019. It is well known that mining activities lead to the environmental pollution by radioactive materials and heavy metals. The ore deposits, even not yet exploited should be subject to baseline studies to better assess later the impact of mining activities.

Within the framework of technical cooperation with the International Atomic Energy Agency (IAEA), Cameroon has built an environmental monitoring programme. Various technical cooperation projects contributed to develop capacity building to characterize the environment such as the ore bearing and mining sites or closed mines. Dozens of scientists were trained in nuclear techniques ( $\alpha$ ,  $\beta$ ,  $\gamma$ -spectrometry and XRF spectrometry) and various nuclear instruments were provided. Two institutions mainly benefited from IAEA the support to establish environmental monitoring capacity in Cameroon: The Institute of Geological and Mining Research and the National Radiation Protection Agency. The present work will focus on the inventory of ore deposits and mining sites of Cameroon with highlight on environmental monitoring activities developed by the Institute of Geological and Mining Research in these areas using laboratory and in-situ gamma spectrometry to determine activity concentrations of natural radionuclides in soil, alpha spectrometry for radioactivity in food and drinking water, RADUET detectors for indoor radon and thoron, XRF spectrometry for toxic trace elements in soil. These measurements were carried out to prevent health effects stemming from exposure to NORM and heavy metals. Results of radioactivity and heavy metals measurements followed by radiation dose assessment will be presented.

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