

A network for the measurement of radionuclide contaminants in water and soil

Ground water and soil contamination can have a significant impact on the health and wellbeing of local communities. In remote or poor, under-resourced areas, where water treatment and regulation is not always feasible, the impact of contamination is increased. In rural communities based for example around agriculture and fishing, contaminants can be easily ingested by people directly from the water source, through contaminated fish and animals, through crops etc. The amount of contaminants can be enhanced through man-made activities such as mining, chemical processing and pesticide drift.

One type of contamination is through the presence of radioactive material. Naturally Occurring Radioactive Material (NORM) can be found everywhere from bedrocks, water and even in some food sources like bananas and brazil nuts. However, human activity can increase the amount of radionuclides in nature, the so called Technologically Enhanced Radioactive Materials (TENORM). Mining, smelting, and the coal and oil industries are some of the major sources of TENORM.

An extensive network for the measurement of background radiation in water and soil can help us map the presence of NORM and TENORM in African countries. Such a project can provide valuable information to inform regulating authorities and legislators on the environmental impact of man-made activities, provide benchmark values for NORM from regions with low anthropogenic impact and identify regions with potentially harmful amounts of radionuclides. These measurements can also act as the starting point for further research on for example the long-term impact of industry to local communities.

Various techniques can be used to measure and monitor the presence and emission of radionuclides. For example, permanent and mobile radiation monitoring systems, small-scale airborne detectors and chemical analysis.

In this presentation we will introduce the concept of such a broad measurement network. The aim is to identify possible stakeholders and their needs, in order to establish such a network and pursue funding.

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