Nonprofits Roles in Strengthening Radiological Security in Africa: Lessons and prospects

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The most common radionuclides contained in category 1-3 radioactive sources include Co-60, Cs-137, Ir-192, Am-241 and Se-75. When used properly, their ionizing radiation has useful applications across many fields in the world around us. However, risk associated with human exposure to ionizing radiation is well established and divided into stochastic and deterministic effects. The workers, public and environment must be protected from the risk of ionizing radiation whenever radioactive sources are in use. Radiological safety and security programs aim to maintain personnel and environment radiation doses below regulatory limits and as low as reasonably achievable, to prevent unplanned or accidental exposure to ionizing radiation, and to prevent release of radioactive material into the environment. In the case of deliberate release of ionizing radiation by a terrorist group, using a so called radiological dispersal device or dirty bomb, the explosion could create fear and panic sought by terrorists, contaminate property, and require potentially costly cleanup. Radiological security is the corner stone of preventing nuclear terrorism. An attack anywhere in the world would be an attack everywhere. Currently, radioactive source security largely depends on actions by individual states. A comprehensive global system is needed to provide confidence in each states material security.

Recently, there has been renewed interest among policy makers, development professionals and security experts in Africa to strengthen the sustainability and effectiveness of the radiological security regime. The regime is an essential framework for sharing the benefits from the peaceful use of radioactive materials and radiation-generating machines. Radioactive sources and technologies find various peaceful applications, which most African countries use to contribute to and meet their development objectives in areas including human health, food production, water management and environmental protection. The use of these sources and techniques contributes directly to 9 of the 17 Sustainable Development Goals (SDGs) set out in the United Nations 2030 Agenda for Sustainable Development. These are exciting, positive developments—but they are occurring on a continent burdened by a growing number of terrorist groups and attacks, weak regulations, porous borders, and unstable governments. These factors create security challenges for international trade of dual-use sensitive materials and take considerable financial and political tolls on African states which in turn weaken global efforts to combat nuclear and radiological terrorism.

The present study examines the roles played by nonprofit organizations in strengthening the sustainability and effectiveness of the radiological security regime in Africa during the past decade. The study strives to portray the different ways in which nonprofit entities raise awareness of the need to strengthen national commitments to radiological security conventions and best practices as well as complement and fill gaps in human capacity development efforts of national governments, regional organizations and international partners. The findings can contribute to a better understanding of the challenges and opportunities arising from the work of nonprofits in enhancing radiological security in the region. This study should, therefore, be of value to national development practitioners, political elites and security professionals wishing to draw from the lessons and experiences of extant nonprofits working in the field of nuclear and radiological security in Africa.