

DETERMINATION OF NATURAL RADIOACTIVITY AND ESSENTIAL ELEMENTAL CONCENTRATION LEVELS IN THE VICINITY OF MINJINGU MINING - TANZANIA

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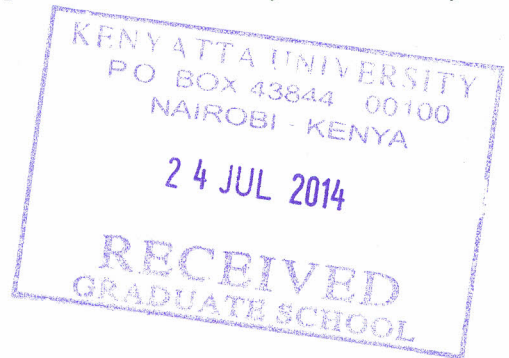
A research proposal submitted in partial fulfilment of the requirements for the award of the degree of Master of Science in the School of Pure and Applied Sciences of Kenyatta University

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## ABSTRACT

The international body known as the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) periodically reviews the effects of ionizing radiation on the environment. Last year, the Committee, for the first time, issued a report that contained a review specifically focused on the effects of ionizing radiation on plants and animals. While the review contained no surprising findings, it does serve to focus attention on the changing nature of the scientific community's assessment of radiation's potential environmental effects. The release of radioactive wastes to the environment is known to increase the radiation exposure to humans. Minjingu, as one of the largest phosphate mine in Tanzania is expected to increase radiation exposure to its vicinity. This work aims to review the effect of naturally occurring radioactive substances in the villages around Minjingu since last research, 2000. This work will determine background radioactivity levels in soil and background concentration levels of essential elemental composition in soil and to estimate the committed effective dose received by the population in the vicinity of Minjingu mining phosphate. Gamma ray spectrometry and Energy Dispersive X-ray Fluorescence (EDXRF) will be used for sample analysis.

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