



Joint FAO/IAEA Programme
Nuclear Techniques in Food and Agriculture

SOIL EROSION ASSESSMENT: MAKING A DIFFERENCE WITH ISOTOPIC TECHNIQUES

15 May 2019, 13:00 – 14:30 | Malaysia room/C227

(Light lunch provided)

Organised by the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture

Land degradation and soil erosion by water are associated with the irreversible loss of fertile soil, reduced soil productivity, increased siltation and pollution of water bodies. Agroenvironmental impacts related to soil loss have generated a pressing need for obtaining reliable information on soil erosion and sediment redistribution affecting agricultural land, to strengthen soil conservation strategies.

Investigations to find innovative and effective techniques for evaluating short- to long-term soil loss and deposition processes to complement conventional methods, have led to the development of isotopic approaches such as fallout radionuclides (i.e. ^{137}Cs , ^7Be , $^{210}\text{Pb}_{\text{ex}}$, $^{239+240}\text{Pu}$) and compound-specific stable isotope techniques.

This side event is organised by the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture. It will present state-of-the-art isotopic techniques used to investigate soil erosion as well as some recent methods development and success stories obtained in targeted African countries.



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GLOBAL SYMPOSIUM ON SOIL EROSION

15 - 17 MAY 2019 | FAO - ROME, ITALY

AGENDA

Welcome and Opening (13:00-13:05)

Opening by **Lionel Mabit**, Senior Soil Scientist at the Soil and Water Management & Crop Nutrition Laboratory, Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture, Vienna, Austria

Overview of the main isotopic techniques used to investigate soil erosion and soil redistribution (13:05-13:20)

Stable and radiogenic isotope approaches to assess on-site and off-site soil erosion processes, **Christine Alewell**, Professor at Environmental Sciences, University of Basel, Basel, Switzerland

Case studies and specific use of isotopic techniques to investigate soil erosion (13:20-13:50)

Moderator: Lionel Mabit, FAO/IAEA Joint Division

- *Use of fallout radionuclides to assess change in soil erosion and sedimentation rates in Northern Morocco*, **Moncef Benmansour**, Head of Division Water Soil and Climate, National Centre for Nuclear Energy, Sciences and Technology (CNESTEN), Rabat, Morocco
- *Madagascar highland traditional terracing agriculture improves soil preservation, as evidenced by the fallout radionuclide techniques*, **Naivo Rabesiranana**, Technical and Development Director, National Institute for Nuclear Science and Technology (INSTN-Madagascar), Antananarivo, Madagascar
- *Use of ^{137}Cs in evaluating conservation agriculture practices on soil erosion control in semi-arid areas of Zimbabwe*, **Emmanuel Chikwari**, Chief Research Officer and Head of Chemistry at the Chemistry and Soil Research Institute, Harare, Zimbabwe

Conclusion and way forward (13:50-14:05)

Refreshment (14:05-14:30)

