

# Job Description for Professional Posts

**Reference:** NA2024/14

<b>Position and Grade:</b>	Associate Soil Spectroscopy Officer, P2
<b>Organizational Unit:</b>	Soil and Water Management and Crop Nutrition Laboratory Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture
<b>Duty Station:</b>	Seibersdorf
<b>Type/Duration of Appointment:</b>	FT – JPO, 1 year

## Organizational Setting

The Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture is located in the Department of Nuclear Sciences and Applications of IAEA in Vienna. The Joint Centre assists Member States of the Food and Agriculture Organization of the United Nations (FAO) and IAEA in using nuclear techniques and related technologies to improve food security, to alleviate poverty and to promote sustainable agriculture. It does so by coordinating and supporting applied research, providing technical and advisory services, laboratory support and training, and collecting, analysing and disseminating information.

The Joint Centre consists of five sections in the areas of: animal production and health; plant breeding and genetics; insect pest control; soil and water management and crop nutrition; and food safety and control. Each section has an associated laboratory, as part of the FAO/IAEA Agriculture & Biotechnology Laboratories (ABL) located in Seibersdorf, 45 km southeast of Vienna.

The Soil and Water Management and Crop Nutrition (SWMCN) Section and its Laboratory, assist Member States in developing improved soil and water management practices for sustainable intensification of agricultural production systems through applied and adaptive R&D activities, technology transfer and capacity building. The SWMCN Laboratory, through the application of nuclear techniques, focuses on the development of methodologies and cost-effective soil-water technology management packages to: (i) improve soil quality and fertility for crop nutrition and production; (ii) increase on-farm and area-wide nutrient and water use efficiency to combat water scarcity and prevent the inefficient use of applied fertilizers and water; (iii) minimize the impacts of climate change on agricultural soil and water management; and (iv) improve preparedness and response to environmental pollution (through nuclear emergencies, anti-microbial agents and micro-plastics) affecting food and agriculture.

## Main Purpose

The Associate Soil Spectroscopy Officer is responsible for assisting in the development of research protocols for the estimation of soil properties using nuclear and conventional spectroscopy techniques.

## Role

The Associate Soil Spectroscopy Analyst is a junior expert. He/She will assist in the development of methodology for estimating and monitoring soil properties using portable and airborne gamma spectroscopy and infrared soil spectroscopy. He/she will support the analysis of soil monitoring campaigns for protocol development and publication; he/she is also a technical and scientific writer.

## Partnerships

The Associate Soil Spectroscopy Officer reports to the SWMCN Laboratory Head and will work closely with staff members of the SWMCN Laboratory and Section. He/She will also be involved in related coordinated research activities relating to soil property mapping, including agricultural water management and environmental pollution.

## Functions / Key Results Expected

Under the overall guidance of the Head of the Soil and Water Management & Crop Nutrition Laboratory and its team, the Associate Soil Spectroscopy Officer will:

- Work on techniques and procedures for sampling, sample preparation and field and laboratory-based analysis using gamma and infrared spectroscopy for soil property monitoring and mapping in agro-ecosystems.
- Implement experiments in the laboratory and field using gamma and infrared spectroscopy for enhancing soil property monitoring and mapping.
- Carry out gamma and infrared spectroscopy analysis of soil samples.
- Develop methodologies for soil property monitoring and mapping in agro ecosystems using gamma and infrared spectroscopy.

## Competencies and Expertise

Core Competencies		
Competence	Occupational Role	Behavioural Indicator
Communication	Individual Contributor	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen and understand the perspective of others and proposes solutions.
Achieving Results	Individual Contributor	Takes initiative in defining realistic outputs and clarifying roles, responsibilities and expected results in the context of the Department/Division's programme. Evaluates his/her results realistically, drawing conclusions from lessons learned.
Teamwork	Individual Contributor	Actively contributes to achieving team results. Supports team decisions.
Planning and Organizing	Individual Contributor	Plans and organizes his/her own work in support of achieving the team or Section's priorities. Takes into account potential changes and proposes contingency plans.

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<b>Functional Competencies</b>		
<b>Competence</b>	<b>Occupational Role</b>	<b>Behavioural Indicator</b>
Analytical thinking	Associate	Gathers and analyses information, identifying critical relationships and patterns among data and proposes workable solutions.
Commitment to continuous process improvement	Associate	Gathers and analyses information, identifying critical relationships and patterns among data and proposes workable solutions.
Judgement/ decision making	Associate	Consults with supervisor/manager and makes decisions in full compliance with the Agency's regulations and rules.
Technical/ scientific credibility	Associate	Acquires and applies new skills to remain up to date in his/her area of expertise. Reliably applies knowledge of basic technical/ scientific methods and concepts

<b>Expertise</b>	
<b>Expertise</b>	<b>Description</b>
Soil and Water Management and Crop Nutrition	Good understanding of soil property monitoring and mapping
Analytical methods in biogeochemistry	Practical experience in the use of gamma spectroscopy and/or infrared spectroscopy in the laboratory and field for soil property monitoring and mapping

## **Education, Experience and Language Skills**

- University degree in agronomy, soil science, biology or environmental sciences with a major emphasis on soil property monitoring and mapping.
- Minimum of two years of proven laboratory experience in soil science in the field of soil property monitoring and mapping or related environmental sciences.
- Experience in the use of gamma spectroscopy and/or infrared spectroscopy for soil property monitoring and mapping is an asset.
- Fluency in English. Knowledge of other official IAEA languages (Arabic, Chinese, French, Russian or Spanish) is an advantage.

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