

International Atomic Energy Agency

**Fellowship on Master of Human Nutrition and Nuclear Techniques Curriculum
RAF6059 'Building Capacity to Use Stable Isotope Techniques to Improve
Micronutrient Status Among Children (AFRA)'**

(EVT2302236)

INFORMATION SHEET FOR CANDIDATE NOMINATIONS

Title: Group Fellowship on Master of Human Nutrition and Nuclear Techniques Curriculum related to the Regional Project RAF6059

Place: International University of Rabat, Rabat, Morocco

Dates: 1 October 2023 – 31 July 2025

Deadline for Nominations: **30 April 2023**

Organizers: The International Atomic Energy Agency (IAEA)

Host Country: Morocco
Organizer: Mr KHALID EL KARI
Centre national de l'énergie, des sciences et des techniques nucléaires (CNESTEN)
B.P. 1382
Rabat
MOROCCO
Tel: +212668282518
Email: khalidelkari73@gmail.com

IAEA Contacts:

Ms. Anna Grigoryan
Programme Management Officer
Division for Africa
Department of Technical Cooperation
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 Vienna
Austria
Tel. :+43 1 2600 26092
Fax : +42 1 26007
Email : A.Grigoryan@iaea.org

Mr Victor Owino
Technical Officer
Division of Human Health
Department of Nuclear Sciences and Applications
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 Vienna
Austria
Tel. :+43 1 2600 21657
Email : V.Owino@iaea.org

Language: French

Purpose: To train African nutrition professionals using a 2-year standardised curriculum culminating in the award of a Master of Human Nutrition and Nuclear Techniques.

Expected Output(s):

- A new group of trained nutrition professionals able to address African nutrition issues from a regional lens
- Nutrition professionals who complete the degree programme will gain competencies in using nuclear and related techniques in nutrition assessments. Graduates will have the skills to pursue diverse career pathways, including doctoral research, or work in various institutions, such as government agencies, or research institutes.
- New information on aspects of African diet quality and related nutrition outcomes generated using nuclear and related techniques disseminated through student dissertations, conferences, and peer reviewed publications

Scope and Nature:

This will be a 2-year academic programme based at the International University of Rabat, Rabat, Morocco where primary teaching and supervision will be provided. The student will also have supervision in home country during data collection towards thesis.

The 2-year MSc programme will be organised into 4 Semesters with courses tailored according to host university requirements based on the following generic guideline:

YEAR 1

Semester 1: Principles of Nutritional Science and Nuclear Techniques, Nutrition Throughout the Life Course, Malnutrition Pathophysiology, Dietary Assessment, Nutritional Epidemiology, and Biostatistics.

Semester 2: Application of Nuclear Techniques in Nutritional Assessment

African Food Systems, Contemporary Nutrition Issues in Africa, Nutrigenetics, Nutrigenomics and Bioinformatics, Nutrition Policies, Programs, and Interventions in Africa, and Research Methodology

YEAR 2:

Semester 3:

Nuclear Techniques in Nutritional Status and Disease Risk Assessment, Nuclear Techniques in Total Energy Expenditure and Physical Activity Assessment, Nuclear Techniques in Nutrient Bioavailability and Body Stores Assessment, Nuclear Techniques in Human Milk and Dietary Intake Assessment, Research Protocol & Seminar, Information Technology Applied to Nutrition, and Project Management

Semester 4: Final evaluation: End-of-Study Project and Dissertation

Background
Information:

Background: Micronutrient deficiencies are highly prevalent in Africa and are some of the major factors related to growth retardation, morbidity, mortality and slow psychomotor development and physical disability in children. Micronutrient deficiencies also affect women of reproductive age with significant adverse impact on offspring nutritional status and health in early life and limited development and human potential. For example, almost a quarter (38%) of all women of reproductive age in Africa suffer from anaemia that is related to iron deficiency. Children's diet in Africa is predominantly plant-based. Plant-based diets are often deficient in critical micronutrients such as iron and zinc and protein needed to metabolize these nutrients. Additionally, plant-based foods have naturally occurring compounds that compete with micronutrients for absorption sites in the gastrointestinal system. It's therefore important to design diets in a way that enhances micronutrient absorption from foods. However, there is limited technical know-how and laboratory capacity in Africa to assess micronutrient bioavailability from foods and how this relates to micronutrient status among vulnerable groups like children.

RAF6059 aims to develop both human and laboratory capacity in the application of stable isotope techniques to evaluate diet quality in relation to micronutrient and macronutrient absorption from foods with a focus on iron, zinc, vitamin A and protein.

Capacity building will be guided through a Master of Science Programme involving the design of a curriculum in the first phase followed by enrolment and training of students in the next phase in a 2-year academic programme that culminates in a thesis focusing on one of the micronutrients and/or how their absorption is influenced by food-based strategies. A suite of stable isotopes techniques including those to assess iron, zinc, vitamin A absorption will be covered in the curriculum. Additionally, there is now available a dual stable isotope tracer method to assess protein quality in foods. Results from this project will help member states to design and evaluate interventions to address micronutrient deficiencies and to combat stunting among children for better health and economic development.

The curriculum was validated at a stakeholder event held in Lusaka, Zambia from 31 October – 4 November 2022. The curriculum has been officially approved at North-West University, South Africa and by the Board of the International University of Rabat, Morocco. The curriculum is also at various approval stages at the University of Ghana, Ghana and at the

Universite Cheikh Anta Diop de Dakar, Senegal. The programme will commence at the International University of Rabat will admit students into the programme in September 2023. The programme will commence at the North-West University in January 2024. The purpose of this call is for participating IAEA Member States to nominate duly qualified candidates for the MSc Human Nutrition and Nuclear Techniques.

Participation: This event is open to ONE participant per Franco-phone Member State from the following countries: Benin, Burkina Faso, Cameroon, Comoros, Djibouti, Ivory Coast, Mali, Mauritania, Niger, Senegal.

The eligibility criteria for this AFRA Master programme are the following:

- Candidates should be citizens of the nominating Member State;
- Be 35 years old maximum at the start of the training programme;
- Complete the attached application form of the AFRA Fellowship Programme;
- Have a Bachelor Degree (BSc) in life sciences: nutrition, biology, food science and technology, medical, pharmaceutical or biomedical sciences, public health or Equivalent or higher degree in the same fields.;
- Application forms must be submitted with a copy of the following documents:
 - BSc degree;
 - University transcripts;
 - A medical certificate from a certified physician confirming their physical fitness to undertake the course of study; If fellowship is granted, the candidate will submit another medical certificate prior to departing for training;
- Candidates should show evidence of bonding to go back to work in his/her country upon completion of the programme;
- Candidates who are currently being trained under an IAEA fellowship training (short or long term) or have accepted an IAEA fellowship award will not be considered;
- Applications from female candidates and those from Least Developed Countries (LDCs) are highly encouraged.

Master en nutrition humaine et techniques nucléaires: conditions d'admission

Participants' Qualifications:

- Le candidat doit être titulaire d'une licence en sciences de la vie, nutrition, biologie, sciences et technologies alimentaires, sciences médicales, pharmaceutiques ou biomédicales, santé publique ou d'un diplôme équivalent ou supérieur dans les mêmes domaines.
- Il convient toutefois de noter que l'admission est compétitive. Seuls les candidats ayant un excellent dossier académique ont de bonnes chances d'être acceptés.

- Les étudiants qui remplissent toutes les conditions seront invités à un entretien.
- Les diplômes obtenus en dehors de l'université d'accueil doivent faire l'objet d'une demande d'homologation auprès des services compétents de l'université d'accueil.

Master of Human Nutrition and Nuclear Techniques

- Admission requirements
- The applicant must have Bachelor's degree in life sciences, nutrition, biology, food science and technology, medical, pharmaceutical or biomedical sciences, public health or Equivalent or higher degree in the same fields.
- However, it should be noted that admission is competitive. Only applicants with excellent academic records have a good chance of being accepted.
- Students who comply with all the requirements will be invited to an interview.
- Degrees obtained outside the host university must apply to have their degree approved by the relevant departments of the host university.

Nomination Procedure:

Nominations should be received before the deadline through the IAEA's InTouch+ platform <https://Intouchplus.iaea.org> under the event EVT2302236. Should this not be possible, applicants may use the official Nomination Form submitted with the Call for Nomination or download a template from the IAEA's webpage <http://www.iaea.org/technicalcooperation/How-to-take-part/train-course/index.html>. Completed forms must be endorsed by the relevant government authority and should be sent to IAEA official mail: Official.Mail@iaea.org. Completed forms should be endorsed by relevant national authorities and sent to the Programme Management Officer for this project, Ms Anna Grigoryan (IAEA Official Fax: +43-1-26007 or E-Mail Official.Mail@iaea.org), through the official channels, i.e. the designated National Liaison Office for IAEA matters, not later than **30 April, 2023**. Please be advised that late nominations or replacements of participants after the closing date for nominations will not be accepted.

Security in the Field:

Administrative and Financial Arrangements:

Nominating Governments will be informed in due course of the names of the candidates who have been selected and will, at that time, be given full details of the procedures to be followed with regard to administrative and financial matters.

Selected participants from countries eligible to receive technical assistance will be provided with a round trip economy class air ticket from their home countries to Morocco, and a stipend sufficient to cover the cost of their accommodation, food, and minor incidentals. Shipment of accumulated meeting materials to the participants' home countries is not the responsibility

of the IAEA.

The organizers of the regional coordination meeting do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the training course, and it is clearly understood that each Government, in nominating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.