

APPLY 39/2021

# Researcher in water quality modeling and assessment

WATER SECURITY RESEARCH GROUP, IIASA BIODIVERSITY AND NATURAL RESOURCES PROGRAM

The **Water Security (WAT) Research Group** is one of four groups within the IIASA **Biodiversity and Natural Resources (BNR) Program**. The water security group works across various water-related sectors and management scales by incorporating water science into integrated assessment and planning studies. The group has about 30 scientific staff and (co-)hosts 5-10 visiting PhD students each year through the IIASA Young Scientists Summer Program (YSSP). The successful candidate will benefit from the multidisciplinary and multicultural environment working on all aspects of water sciences. IIASA is located in the Schloss Laxenburg, which dates back to the 18<sup>th</sup> century. Laxenburg is about 15 km south of Vienna and easily accessible by public transport.

## PROJECT DESCRIPTION

This position is under the research project titled Sustainable Water Quality Management supporting Uganda's development ambitions. The project is funded by the Austrian Development Agency (ADA) and implemented jointly by IIASA, the University of Natural Resources and Applied Life Sciences (BOKU) and the Directorate of Water Resources Management (DWRM) of the Uganda Ministry of Water and Environment as the local partner.

The research project objective is to contribute to the sustainable management of water resources in Uganda, integrating water, health, agriculture, industry and environmental sectors. This is in line with the integrated water resources management approach stipulated in the Ugandan National Water Policy and the Uganda Catchment Management Guidelines.

The expected outcome is to improve knowledge and enhance the institutional capacity in sustainable water quality management in Uganda in support of policymaking and effective water resources management.

## JOB DETAILS

The successful candidate will develop and apply a multi-scale water quality modeling framework for Uganda and contribute to the national water quality assessment for the country. The modeling framework includes a hydrological model Community Water Model (CWatM, including water quality modules) and a lake water quality model (PCLake+), and complemented by lake water quality information from Remote Sensing products and river water quality data from

monitoring in the project. The framework will enable linking water quality issues to the pollution sources, critical source areas, and underlying drivers, as well as to their impacts on the ecological status of major lakes including potential for algal blooms. The spatial scale of modeling include the extended Lake Victoria Basin, Uganda, and a selected Water Management Zone within Uganda.

## MAIN DUTIES

- Carry out data collation, analysis and pre-processing in order to set up the multi-scale water quality modeling framework for Uganda
- Set up and calibrate the water quality models using the modeling framework
- Conduct scenario analysis in the modeling framework using climate, hydrological and socio-economic projections
- Contribute to the water quality assessment in Uganda, primarily on status of water quality, underlying stressors and pollutants, and climate and human impacts
- Assist with training activities on data analysis and water quality modeling in the project
- Assist and support the WAT group in the different ongoing projects
- Publish relevant results of own research in peer-reviewed journals and participate in scientific conferences and workshops
- In line with the team spirit that prevails at IIASA, the incumbent may occasionally work on other tasks assigned by their superiors, that might not be directly related to this appointment but where the post holder has relevant experience and skills, and/or a shortage of immediate personnel capabilities requires such.

## QUALIFICATIONS, SKILLS AND SPECIFIC REQUIREMENTS

- A master's degree (or equivalent) in Hydrology, Environmental Engineering, Environmental Sciences, Environmental Chemistry, or other relevant area
- Good knowledge of hydrological and water quality modeling
- Good knowledge of or strong interest in data analysis and statistics
- Interest in capacity enhancement and stakeholder engagement activities
- Good programming skills in scientific programming language(s) (e.g., Python, R)
- Experience with geographic information systems (e.g., ArcGIS, QGIS)
- Demonstrated ability to work well both independently and as part of a multicultural team
- Interest in connecting research work to stakeholders' engagement processes
- Willingness and interest to work in different socio-economic contexts including travels to developing countries (particularly East Africa)

## APPOINTMENT TERMS

The selected candidate should be available to take up the position in February 2022. We offer an initial fixed-term, one year, full-time (40 hours per week) employment contract with the possibility of extension thereafter. Eligible applicants wishing to work part-time hours may be considered.

Duties will be carried out at the IIASA premises in Laxenburg, near Vienna in Austria (up to 100 days per year home office working possible).

The corresponding profile for this opportunity is **R1** according to the [IIASA profiles for research careers](#).

## WE OFFER:

A **minimum** gross annual salary of EUR 33,924.00 (full-time equivalent), which is exempt from income tax in Austria.

The advertised salary is:

- Negotiable, based on the qualifications, skills and experience of the selected individual.
- Subject to deductions for health insurance and/or social security.

- Excellent communication skills (both written and verbal) in English, good presentation skills and the ability to write scientific articles and contribute to science-policy reports
- IIASA offers an interdisciplinary and international workplace, and the possibility to interact with researchers of different nationalities, with strong ties to a world-wide network of research institutions engaged in environmental systems research. The successful candidate must be able to work in, and have respect for, an intercultural environment, and [IIASA core values](#).

- Not directly comparable with other employers in Austria, due to the unique legal status and privileges granted to IIASA.
- Subject to the principle of income aggregation (Progressionsvorbehalt in German).

### IN ADDITION:

- Educational subsidies for children of school age enrolled in private schools in Austria.
- A generous annual leave entitlement.
- Moving and settlement allowances and paid home leave for employees in scientific and professional categories hired from international locations.
- The possibility to work up to 100 days per year in home office (within Austria)
- Assistance for newcomers to Austria with visa, work and residency permit applications.
- Support finding accommodation in Austria.

Further details [here](#).

## About IIASA

IIASA is committed to a working environment that promotes equality, diversity, tolerance and inclusion within its workforce. This is reflected in our [Core Values](#). We encourage qualified candidates from all religious, ethnic, and social backgrounds to apply. In the case that candidates are equally qualified, preference will be given to applicants from countries where IIASA has a [National Member Organization](#) (NMO).

## Further Information

For further information about this opportunity please contact:

[Taher Kahil](#), WAT Research Group Leader

For general information about working at IIASA, please contact:

[recruitment@iiasa.ac.at](mailto:recruitment@iiasa.ac.at)

## Applications

**To apply for this opportunity, you will need to provide the following documents in English:**

- A cover letter outlining your motivation for and fit to the position
- A detailed Curriculum Vitae
- The names, addresses (including e-mail), and telephone numbers of two work-related reference givers.

**Deadline for receipt of applications: Until filled**

**APPLY**

