

inventWater ESR-15

PhD Adaptation measures based on smart nutrient management at the catchment scale for future-proof water quality

WE ARE LOOKING FOR

Are you passionate about water quality and ecological modeling and developing innovative modeling approaches for nutrient management? And interested in scenario analysis, seeking solutions, and evaluation of water-related policy? Then you maybe the candidate we are looking for!

Within the inventWater consortium on "Innovative forecasting approaches to assess future trends in pollutant flows from land to water systems for advancing sectoral water quality services" we are looking for a PhD candidate.

Nutrient pollution is by far the most widespread water quality issue in many water systems such as reservoirs, lakes and rivers worldwide. Climate change is further influencing water quality through altered precipitation patterns and warmer temperatures that stimulate harmful cyanobacteria blooms. This project aims to develop an integrated modelling tool to assess expected nutrient flows from land to water systems, to determine its impacts on water quality and to provide management decisions for mitigation. The PhD candidate will focus on quantifying nutrient flows from the catchment into the river/reservoir/lake basin of the Dnieper in Ukraine that will serve as an example case. Modelling tools will be developed to determine the critical nutrient loads in selected reservoirs in the system. Scenario analyses with various combinations of measures will be run to evaluate the most promising set of interventions. The combined MARINA/PCLake modelling builds on experiences gained for several lakes and reservoirs in China and Africa, and this project will further integrate these existing models for future analysis of water systems under changing pressures and will provide a tool for water managers to evaluate nutrient stress in combination with predicted climate change, as well as a tool to evaluate what the most promising interventions will be.

The aims of this PhD-projects are: 1) Integrate existing modelling approaches for catchment nutrient flows (MARINA) and lake ecosystems (PCLake); 2) Analyze the impacts of future climate change and potential adaptation measures on water quality in a selected river/reservoir/lake basin; 3) Evaluate most promising adaptation strategies to reduce future nutrient driven water quality issues.

Secondments

The PhD candidate will do two secondments (internships as visiting researcher). One at the Netherlands Institute of Ecology (NIOO-KNAW) in Wageningen (4 months), and one at the Catalan Institute for Water Research (ICRA) in Girona, Spain. The PhD candidate will interact with Fellow PhD's within the inventWater project for global water quality modelling.

The PhD candidate will be supervised by Dr. Jeroen de Klein (WUR), Dr. Lisette Senerpont Domis (NIOO) and Dr. Miquel Lurling (WUR).

WE ASK

- A passion for water quality and ecological modelling (e.g. carbon and nutrient flows, aquatic food-web and ecosystem state, and with an interest in scenario analysis and evaluation of water-related policies.
- Master degree in Environmental Sciences or similar.

- Programming skills and data analysis, and willingness to face complex modelling problems.
- Basic knowledge about biogeochemical and ecological processes affecting water quality and aquatic ecology in rivers and lakes.
- Proficiency in the English language (a minimum of CEFR C2 level, [language page](#)), as well as good communication skills, both oral and written. Applicants from non-Anglophone countries or for those that have not completed their higher education with English as the language of instruction must have an English certificate in the application package (e.g. IELTS, TOEFL, Cambridge English).
- Experience with cross-disciplinary and/or multi-cultural collaboration will be an advantage
- You meet all the entry requirements of the [WUR PhD programme](#).

As a mobile and early-stage researcher you have to also fulfil the following conditions: you are in the first four years of your research career at the time of the recruitment (full-time equivalent research experience); and you do not already have a doctoral degree. Applicants of any nationalities are eligible and you must comply with the European Commission's Horizon 2020 Guidelines mobility rules. In particular, you must not have resided or carried out your main activity (work, studies, etc.) in the Netherlands for more than 12 months in the 3 years immediately prior to the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not considered. You must work exclusively for the project during the employment contract and fulfil the conditions to be admitted in the PhD programme indicated in the job vacancy. These conditions must be fulfilled at the starting date of the contract.

WE OFFER

In principle this is a 48-month PhD position. We offer you a temporary contract for 12 months which will be extended with three years if you perform well (after go/no go evaluation). Salary will increase from € 2395,- gross per month in the first year up to € 3061,- in the last year, based on a full-time appointment (38 hours per week).

YOUR TERMS OF EMPLOYMENT

Wageningen University & Research offers excellent [terms of employment](#). A few highlights from our Collective Labour Agreement include:

- working hours that can be discussed and arranged so that they allow for the best possible work-life balance;
- paid parental leave
- the option to accrue additional holiday hours by working more, up to 40 hours per week;
- there is a strong focus on vitality and you can make use of the sports facilities available on campus for a small fee;
- a fixed December bonus of 8.3%;
- excellent pension scheme.

In addition to these first-rate employee benefits, you will receive a fully funded PhD position and you will be offered a course program tailored to your needs and the research team.

Wageningen University & Research encourages internal advancement opportunities and mobility with an internal recruitment policy. There are plenty of options for personal initiative in a learning environment, and we provide excellent training opportunities. We are offering a unique position in an international environment with a pleasant and open working atmosphere.

You are going to work at the greenest and most innovative campus in Holland, and at a university that has been chosen as the "[Best University](#)" in the Netherlands for the 16th consecutive time.

Coming from abroad

Wageningen University & Research is the university and research centre for life sciences. The themes we deal with are relevant to everyone around the world and Wageningen, therefore, has a large international community and a lot to offer to international employees. Applicants from abroad moving to the Netherlands may qualify for a special [tax relief](#), known as the 30% ruling. Our team of advisors on Dutch immigration procedures will help you with the visa application procedures for yourself and, if applicable, for your family.

Feeling welcome also has everything to do with being well informed. Wageningen University & Research's [International Community page](#) contains practical information about what we can do to support international employees and students coming to Wageningen. Furthermore, we can assist you with any additional advice and information about helping your partner to find a job, housing, schooling, and other issues.

Do you want more information?

For more information about this position, please contact Jeroen de Klein, assistant professor, e-mail jeroen.deklein@wur.nl

For more information about the procedure, please contact Edgar Tijhuis, corporate recruiter, edgar.tijhuis@wur.nl

Do you want to apply?

To apply for this position, you need to do two things. First download an application form from the <http://u.pc.cd/LP8ctalk> website and fill in it, and add all required documents and merge them in one Pdf file. Secondly, use the **apply now button** on the vacancy page on our website (<https://www.wur.nl/en/vacancy/PhD-Adaptation-measures-based-on-smart-nutrient-management-at-the-catchment-scale-for-future-proof-water-quality.htm>) and upload the pdf both where a "letter" is asked for, and upload it where a "CV" is asked for.

This vacancy will be listed up to and including 22 April 2021. We hope to schedule the first job interviews soon afterwards.

Equal opportunities

Wageningen University & Research (WUR) employs a large number of people with very different backgrounds and qualities, who inspire and motivate each other. We want every talent to feel at home in our organisation and be offered the same career opportunities. We therefore especially welcome applications from people who are underrepresented at WUR. For more information please go to our [inclusive webpage](#). A good example of how WUR deals with inclusiveness can be read on the page working at WUR with a [functional impairment](#).

WE ARE

Wageningen University & Research

The mission of Wageningen University and Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment.

With its roughly 30 branches, 6.500 employees and 12.500 students, Wageningen

recruitment@wur.nl

University & Research is one of the leading organisations in its domain. An integrated approach to problems and the cooperation between various disciplines are at the heart of Wageningen's unique approach. WUR has been named Best Employer in the Education category for 2019-2020.

The Aquatic Ecology and Water Quality Management group (AEW) aims to generate novel insights that can help preserving and restoring marine and freshwater ecosystem services. We take a systems approach linking physical, chemical and biological processes across scales. The research is multidisciplinary (environmental engineering, environmental chemistry and aquatic ecology) and ranges from the laboratory scale to the scale of actual ecosystems (field studies). The multidisciplinary expertise of the team comes together in the development of integrated models for ecosystem and water quality management.

These are the points our employees list as good reasons to come work at WUR: [read the 5 reasons to come work at WUR](#)