



IHE Delft is the largest international graduate water education facility in the world and is based in Delft, the Netherlands. The mission of IHE Delft is to work in partnership to strengthen capacity in the water sector, to achieve global sustainable development. IHE Delft has a permanent staff of 230 of which more than 140 are academics from all over the world, while about 250 guest lecturers from academia and industry contribute to our educational programmes. Each year 750 professionals (including about 200 new MSc students per year) from all over the world attend various water-

related courses at IHE Delft. The Institute has an international staff & student community with English as the working language.

Integrated Water Systems and Governance Department

The Integrated Water Systems & Governance Department covers a broad range of disciplinary knowledge – sociology, law, economics, public administration, political science, information technology, mathematics, hydrological and hydraulic modelling sciences, engineering, knowledge management and innovation studies. With our research we seek to contribute to a better understanding of what makes water systems sustainable, resource efficient, resilient and how they contribute to social and environmental justice, in particular in, but not limited to, the Global South.

IHE Delft is developing together with its partners IWMI and FAO an international framework for the determination and reporting of crop water productivity. By doing so, it helps the implementation of UN and Dutch policies to make water management in the agricultural sector more efficient.

The Integrated Water Systems and Governance Department is looking for a:

Lecturer / Senior Lecturer in Remote Sensing and Crop Water Productivity – 1.00 FTE/38 hours

Responsibilities

The candidate is responsible for the implementation of concepts related to Crop Water Productivity in Africa, Asia and the Middle East. While the concept has been promoted by many international agencies, the implementation of crop water productivity is hindered by a lack of tools to measure it at different scales and to set targets for the near future. IHE Delft has collaborated with partners to develop remote sensing software to facilitate a fast computation of crop water productivity on the basis of Landsat images. This tool needs to be developed further for routine implementation. In addition, a Water Productivity Analyser tool needs to be developed that evaluates water productivity and supports identifying the package of best practices during the growing season.

The candidate will apply these analytical tools and validate the predictions on crop yield and soil moisture where feasible with local field measurements. A second task is to build capacity within the irrigation community (Farmers, Departments of Agriculture, but also for Irrigation and for Environmental Protection Agencies) on water productivity and related concepts such as irrigation efficiency.

The successful candidate should contribute to the imbedding of the concept of crop water productivity in irrigation system management, applied to case studies. The successful candidate will develop and deliver tailor-made courses on energy balance and biomass production modelling (to develop ET and biomass/yield maps) and the application of the analyses for improving crop water productivity at field and scheme level. The candidate is expected to prepare a set of manuals on image processing and water productivity ranking. IHE Delft is encouraging its staff members to develop scientific publications, preferably together with partner organizations. It is expected that the candidate supervises MSc students and provides lectures in water management related modules.

The successful candidate will (in brackets the additional responsibility at senior level):

1. (Lead and) implement projects, timely and adequately reporting project outputs (and, supervising junior research staff).
2. Be able to work and collaborate with project partners and stakeholders in the global South
3. Conduct research and implement projects on crop water productivity analyses including:
 - a. Collecting and processing Landsat images using pySEBAL model
 - b. Validating remote sensing products with field data
 - c. Summarizing the crop water productivity statistics by crop type and by irrigation sub-systems
 - d. Defining gaps of crop yield and crop water productivity
 - e. Analysing yield gaps, and identifying plausible reasons for the gaps detected, including socio-economic factors and issues related to water governance
 - f. Identifying target values of attainable water productivity in geographical contexts
4. (Prepare and) contribute to scientific publications for peer reviewed journals
5. (Acquire and) implement research and capacity building projects in the Global South
6. Develop teaching materials and contribute to teaching in the MSc programmes at IHE Delft on topics related to crop water productivity
7. Supervise MSc (and PhD) students on topics related to crop water productivity and agricultural water management.

Requirements

IHE Delft is searching for an academic with a doctoral degree relevant for crop water productivity assessments. The applicant should have proven field experience in agricultural water management. The candidate should also have demonstrable experience with remote sensing and programming skills in Python and QGIS. The candidate should have excellent analytical and communication skills. Overseas working or training experience is preferred, particularly in the Global South.

Terms of employment

This position is initially for 1 year after which the candidate will be evaluated based on performance. The position is based in Delft, The Netherlands, with short missions abroad. A competitive salary is offered depending on qualifications and experience in accordance with the conditions of employment for Dutch Universities. The appointment implies entry into the Netherlands' Civil Service Pension Fund (ABP).

Information and application

Additional information can be obtained from Dr. Janez Susnik, Deputy Head of the Integrated Water Systems and Governance Department (+31 (0)15 215 2368) or Prof. Dr. Wim Bastiaanssen (w.bastiaanssen@un-ihe.org) or Dr. Marloes Mul (m.mul@un-ihe.org).

Applications (in English) should respond specifically to the requirements and should be sent before **30 June 2019 (closing date)** including curriculum vitae, statement of teaching and research interests, motivation letter and the names and contact details of two contactable referees (*as one PDF file with your family name as the filename*), to IHE Delft, attn. Human Resource Management (E: recruitment@un-ihe.org), PO Box 3015, 2601 DA Delft, The Netherlands, stating vacancy-number **19-IWSG-03**.

Reactions from staffing agencies and other 3rd parties are not appreciated.