



UNESCO-IHE
Institute for Water Education

The **UNESCO-IHE Institute for Water Education** offers graduate education in Delft, The Netherlands, and carries out research and capacity building projects all over the world. The mission of UNESCO-IHE is to contribute to the education and training of professionals and to build the capacity of sector organizations, knowledge centres and other institutions active in the fields of water, the environment and infrastructure in developing countries and countries in transition.

UNESCO-IHE has a permanent staff of 180, of which 90 are scientific staff, while about 250 guest-lecturers from academia and industry contribute to the educational programme. Each year 750 participants (incl. about 200 new MSc students per year) from all over the world attend the various regular and short courses at UNESCO-IHE. The institute has an international staff & student community with English as working language

Department info

The Integrated Water Systems & Governance (IWSG) 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 such systems sustainable, resource efficient, resilient and how they contribute to social and environmental justice, in particular in, but not limited to, the Global South. UNESCO-IHE is developing together with its partners (IWMI, FAO and WWAP) an international framework for water accounting. The newly developed framework is referred to as Water Accounting Plus (WA+). An open-access data repository is under continuous development that shares the water accounts of river basins with all professionals involved in decision making processes (www.wateraccounting.org).

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

Remote Sensing Expert for Water Accounting (m/f) - 0.21 FTE

Responsibilities

The candidate is responsible for developing global data bases on agricultural water management, such as cropping systems, cropping calendars, crop evapotranspiration (including separation into transpiration and evaporation), crop production and soil moisture that will be used to determine river basin scale water accounts and consumptive use in rainfed and irrigated landscapes. The work will contribute to the implementation of water accounting and water productivity in Africa and the Middle East, as part of a newly started FAO project. The FAO project explores remote sensing data in support of solutions to reduce agricultural water productivity gaps. While efficient use of water in the agricultural sector has been promoted by the Sustainable Development Goals (SDG's), the reporting by countries is hampered by the lack of tools to measure it. The candidate will develop together with other members of the Water Accounting Group tools to support the productive use of water, and check whether the consumptive use can be met sustainably.

The candidate will apply various remote sensing algorithms and is aware of the latest developments in the field of earth sciences. The candidate should be aware of various satellite sensors including the newest systems developed by North American, European, Chinese and Japanese Space Agencies. He or she should have a strong analytical background on land surface processes, including knowledge on fluxes of water vapor, heat and carbon between land and atmosphere. Coupling water and energy balances is the way forward, and the candidate should be able to improve the parameterization of these processes for developing countries where field data are scant. The

candidate should couple global datasets and fuse particular parameters in the water accounting context for demonstrating which river basins over-exploit water for agricultural purposes. The results should be demonstrated to students, and disseminated at international symposia.

The successful candidate should contribute to the international science in the field of earth observations, water accounting and water productivity. The candidate is expected to educate the UNESCO-IHE students both via lectures and supervision of MSc. and PhD. students. UNESCO-IHE is encouraging its staff members to develop international publications, and it would be preferred to do this together with the recipient organizations.

The successful candidate will be working on:

1. Development of a global ensemble ET product on the basis of 6 existing energy balance models
2. Validate various remote sensing products with field data, wherever feasible
3. Develop automated procedures to identify crop types from space-borne sensors in fields smaller than 1 hectare
4. Survey and map unsustainable agricultural water management practices in Africa and Middle East
5. Help defining SDG goals related to agricultural water use
6. Publish the newest methodologies and provide all statistical data to FAO
7. Assisting with teaching at MSc level on topics related to remote sensing for water accounting
8. Assisting with supervision of MSc and PhD students on topics related to water accounting and crop water productivity

Requirements

UNESCO-IHE is searching for a mid-career academic person with a doctoral degree in both (i) remote sensing and (ii) land surface processes as well as (iii) experiences in developing global data sets. An existing professorship at an internationally prominent university or institute is strongly preferred. He/she should have proven excellent analytical and communication skills, and have an interest in agriculture and river basins systems. The candidate should have proficient programming skills. He/she should have an Elsevier Scopus Index exceeding 10. Overseas working or training experience is a pre-requisite.

Terms of employment

This position is a temporary position for two years and is explicitly subject to the condition of availability of funding in the FAO Remote Sensing project. The contract of employment will end prior to the agreed end date if the project funding is not available. The intention is to extend the temporary contract with an additional two years, subject to the condition of availability of project funding.

The position is based in Delft, The Netherlands. 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). A Dutch work permit will be required.

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 (+31 (0)15 215 2321 - w.bastiaanssen@unesco-ihe.org).

Applications (in English) should respond specifically to the requirements and should be sent before **08 August 2016 (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 UNESCO-IHE, attn. Human Resource Management (E:

vacancies@unesco-ihe.org), PO Box 3015, 2601 DA Delft, The Netherlands, stating vacancy-number **16-IWSG-10**.

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