



**Institute for  
Water Education  
under the auspices  
of UNESCO**

**IHE Delft Institute for Water Education**, the world's largest international graduate water education facility, works to strengthen water sector capacity to contribute to a world free of poverty and injustice, in which people manage their water and environmental resources sustainably and equitably.

More than 120 of IHE Delft's 200 staff members are academics from all over the world. About 250 guest lecturers from global academia and industry contribute to the Institute's educational programmes. Each year, 750 international professionals, including about 200 MSc students, attend courses at IHE Delft. Our working language is English, and we promote a healthy work-life balance through measures that include support to staff who want to work part of their time from home.

IHE Delft is a unique knowledge institute in the Dutch research and educational landscape that combines excellence in education and research with work to advance global sustainable development. Partnerships are integral to achieving this mission: The Institute works closely with universities, government agencies, NGOs, and private sector institutions in the Netherlands and around the world. Through research, education and institutional strengthening, Institute staff make a tangible contribution towards all Sustainable Development Goals (SDGs) in which water is key.

## PhD Candidate in Eco-hydrology

38 hours per week

### Description and Responsibilities:

IHE Delft Institute for Water Education seeks a PhD student to conduct hydrological studies in highland "water-tower" and lowland "rangeland" systems in Kenya and Ethiopia, as part of an EU DeSIRA programme-funded project, ESSA (Earth observation and environmental Sensing for climate-smart Sustainable Agro-pastoral ecosystem transformation in East Africa). Mountains as water-tower systems are important for water supply for drier lowlands, and in tropical systems, are often dependent on the fog-collecting capacity of native forest vegetation and rainfall recharge feeding springs and rivers. In East Africa, such systems are vital to the livelihoods of millions of people, supporting agroforestry and smallholder mixed-cropping systems on mountain-sides and livestock husbandry in the drier lowlands. These systems are under threat from land-use change and climate change, jeopardizing the sustainability of the livelihoods they support.

The role of IHE Delft in the ESSA project is to study the hydrology and water quality of two water-tower systems in Kenya and Ethiopia. (Site in Ethiopia is chosen with security and infrastructure support in mind, and evaluated over time accordingly.) Specifically, the PhD student will, through fieldwork, data collection and interpretation: i) **establish conceptual models of highland-lowland and hydrology-land use interrelations;** ii) **compare the impact on the hydrology from land use (change) vs. climate (change/variability), as well as existing feedback mechanisms;** and iii) **evaluate different adaptive land and water management practices to compensate for hydrological changes due to land use and climate change in the water tower systems.** The PhD student will also apply principles of hydro geochemistry and isotope tracing to understanding surface-water ground-water interactions, and land use change impacts on water quality.

Activities will include **mapping** (land use, springs, infiltration and recharge areas); **field work** for studying groundwater/surface water hydrology (collection of meteorological data, spring/river discharge measurements, groundwater level measurements, water quality sampling); and **water balance modelling**

(including for rangelands). The PhD student will be responsible for managing a field team comprising several MSc students in **water-quality sampling** in order to relate land-use and potential changes in hydrology and in **modelling** the land use and climate changes on hydrology.

### Responsibilities:

1. Lead and conduct fieldwork in the installation and monitoring of several hydro-metrological monitoring stations in Taita Hills (Kenya) and in Munessa (Ethiopia)
2. Provide leadership and organizational support for on-the-ground field work, including field assistants and MSc students involved in hydrological and water quality sampling;
3. Conduct laboratory work where needed;
4. Data analysis and interpretation, leading to the development of conceptual models;
5. Publish 3 – 4 papers in international peer-reviewed journals

### Requirements:

- Originating from a developing country;
- Willingness to travel and work for extended periods in Kenya and Ethiopia, with time for writing and data analysis in the Netherlands;
- Proficiency in English;
- Experience in hydrological and/or water quality field and lab work is a plus;
- Willingness to support younger scientists and a collaborative attitude
- Values a multi-cultural work environment and is able to have an inclusive and non-hierarchical attitude in the field team.

### Terms of Employment

This is a position for 48 months (4 years), with the expectation that the candidate will submit and successfully defend the PhD within this period. The candidate will be stationed in Delft, the Netherlands. Employment at IHE Delft is according to the Collective Labour Agreement Dutch Universities. (scale P) The appointment implies entry into the Netherlands' Civil Service Pension Fund (ABP).

The initial contract is for 18 months. Within the first year a go/no-go decision will be made based on a detailed PhD research proposal to be developed by the candidate, which will determine whether or not the contract will be extended.

### Information and application

Applications (in English), should contain a cover letter explaining your motivation for this position, and include a short narrative summarizing your academic and professional experience. Applications can be sent until **15 September 2022** to IHE Delft, (*as one PDF file with your family name as the filename*), attn. Human Resource Management (E: [recruitment@un-ihe.org](mailto:recruitment@un-ihe.org) ), PO Box 3015, 2601 DA Delft, The Netherlands, stating vacancy-number **22-WRE-03**.

*Acquisition by staffing agencies and other 3rd parties is not appreciated.*

*By submitting your application for this vacancy, you agree with the privacy statement below:*

*The personal data you share through your application file and other means will only be used by IHE Delft for the purpose of the recruitment and selection process in order to evaluate your suitability for the vacancy for which you have applied, as well as for communication purposes related to the vacancy. IHE Delft will process your personal details in accordance with the EU General Data Protection Regulation of 25 May 2018. For more information we refer you to the privacy statement of IHE Delft: <https://www.un-ihe.org/privacy-statement>*

*Without your prior consent or other legal basis, no information will be shared with third parties. For further questions please contact our Data Protection Officer at [dpo@un-ihe.org](mailto:dpo@un-ihe.org)*