UNITED NATIONS UNIVERSITY

INTERNATIONAL RECRUITMENT
Hamilton, Canada

VACANCY ANNOUNCEMENT

EXTERN: Flood Mapping Tool

Organizational Unit	**:**	United Nations University Institute for Water, Environment and Health (UNU-INWEH)
Reference Number	**:**	2020/UNU/INWEH/EXTERN/FMT/67
Applications to	**:**	intern.at.inweh@unu.edu
Closing Date	**:**	21 September 2020

United Nations University:

For the past four decades, UNU has been a go-to think tank for impartial research on the pressing global problems of human survival, conflict prevention, development, and welfare. With more than 400 researchers in 13 countries, UNU's work spans the full breadth of the 17 Sustainable Development Goals, generating policy-relevant knowledge to effect positive global change. UNU maintains more than 200 collaborations with UN agencies and leading universities and research institutions across the globe. For more information please visit http://unu.edu

United Nations University Institute for Water, Environment and Health (UNU-INWEH):

The UNU Institute for Water, Environment and Health (http://inweh.unu.edu/) is a member of the UNU family of organizations. Its vision is a world free of water problems where sustainable human development and environmental health and security are assured for all. Its mission is to help resolve pressing water challenges that are of concern to the United Nations, its Member States, and their people. UNU-INWEH pursues its mission through critical analysis and synthesis of existing bodies of scientific discovery; targeted research that identifies emerging policy issues; application of on-the-ground scalable science-based solutions to water issues; and global outreach. UNU-INWEH is the only entirely-water focused Institute within the UNU System, and the only entirely water-related UN entity in Canada. UNU-INWEH is supported by the Government of Canada and hosted by McMaster University.

UNU-INWEH works on four broadly defined, interconnected thematic areas: i) accelerating the implementation of water-related SDGs ii) activating a technology revolution for water security in the Global South; iii) advancing gender equality for effective water management and iv) managing water- and climate-related risks for improved water security UNU-INWEH-Strategic-Plan The institute focuses primarily on global water issues and their implications for developing countries.

Background:

UNU-INWEH is developing a flood mapping and future flood risk prediction tool. This tool consists of two modules; a flood mapping module that addresses the data gap of historical flood maps and a flood risk predicting module, which addresses the issue of possible risk in the future.

The historical flood mapping module uses a water classification algorithm (Modified Normalized Difference Water Index) applied to 'stacks' of historical Landsat and Sentinel 2 satellite imagery to reveal patterns of inundation over space and time across the landscapes. The prototype of the tool is ready, which uses Landsat data to identify water patterns.

The second module will use AI models to predict the future flood risk for a given area. The AI models will be trained using the historical flood maps from the first module, and open temporal datasets including land use land cover, population, infrastructure, precipitation, temperature, and sex and age disaggregated socio-economic data. This module will help identify the most flood-risk areas for the future.

We are looking for an extern who can work remotely to assist in the development of the first module of the tool by integrating the Harmonized Landsat Sentinel-2 data

Responsibilities (*List of Tasks*)**:**

- Integrate the Harmonized Landsat Sentinel-2 data
- Test the integration against recent flood events (validation data is available)
- Optimize the system flow where possible
- Undertake additional tasks as assigned by the supervisor.

Qualifications and Requirements:

- Eligibility requirements as available at: externship-programme
- Bachelor's degree or equivalent degree in an area relevant to UNU-INWEH's field of work.
- Familiarity with working in Google Earth Engine and JavaScript
- Understanding of remote sensing related water indices
- Excellent computer skills
- Ability to prioritize work and multi-task; focus on delivery; self-motivation.
- Ability to work in a multi-cultural environment with sensitivity and respect for diversity.
- Fluency in oral and written English; knowledge of any other UN official languages is an advantage.

Expected Products (*Outputs*)**:**

- An updated version of the flood mapping tool which uses Harmonized Landsat Sentinel-2 data in addition to the Landsat archive
- An externship report, as per UNU-INWEH externship programme requirement.

UNU is committed to diversity and inclusion within its workforce, and encourages all candidates, irrespective of gender, nationality, religious and ethnic backgrounds, including persons living with disabilities to apply and become part of the organization.

UNU has a zero-tolerance policy on conduct that is incompatible with the aims and objectives of the United Nations and UNU, including sexual exploitation and abuse, sexual harassment, abuse of authority and discrimination.

Duration and Start Date:
The duration of externship is between 3 and 4 months with an expected start date of 1 October 2020 or as soon as possible thereafter.

In case of substantial time difference between extern's location and UNU-INWEH's location (Hamilton, Canada), the extern and supervisor will discuss and agree on a daily schedule for the extern to ensure consistent support to extern from the supervisor.

Application Procedure:
Interested applicants should apply before 21 September 2020 by e-mail in the form of an Adobe Acrobat PDF file to intern.at.inweh@unu.edu following the application procedure available under application form

Applications **must** include the following:

1) An indication of the reference number of the vacancy announcement (2020/UNU/INWEH/EXTERN/FMT/67)

Only short-listed candidates will be notified Applications that do not include all the requested information will not be considered.