



Internship Terms of Reference

Internship Title:	INTERN (Hydro-informatics): Flood Risk Index-FRI
Reference Number:	2021/UNU/INWEH/INTERN/FRI/26
Institute/Office:	United Nations University Institute for Water, Environment and Health (UNU-INWEH)
Duty Station:	Hamilton, Canada – INTERNATIONAL RECRUITMENT
Supervisor Name:	Hamid Mehmood
Duration:	15/MAY/2021 to 15/NOV/2021 or 15/JUN/2021 to 15/DEC/2021
Background	
<p>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.</p> <p>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.</p> <p>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.</p>	
Project description	
<p>Water-Related Disasters (WRD), such as cyclones, floods, and droughts, account for 90% of natural disasters. Since the year 2000, over 5,300 WRD have been reported, with over 325,000 fatalities and an economic loss exceeding USD 1.7 trillion globally. Floods account for approximately 54 % of all WRD [2]. Since the beginning of 2020, in South Asia alone, floods impacted over 17.5 million people, caused over 1000 deaths, and an economic loss of billions of dollars.</p> <p>A global survey of Flood Early Warning Systems (FEWS) conducted by the United Nations University Institute for Water Environment & Health (UNU-INWEH) shows that the majority of flood forecasting</p>	

centers in flood-prone countries lack the ability to improve the spatial coverage of FEWS and generate historical inundation and flood risk maps. Developing these maps at the national level using conventional techniques is a costly exercise. In Canada, for example, it is expected to take one decade and USD 350 million to update national inundation maps. The existing inundation and flood risk maps in most developing countries are out-of-date and do not consider rapid urban development or the impacts of climate change.

UNU-INWEH has developed a Historical Flood Mapping tool that generates inundation maps for significant floods in the Global South from 1984 to the present using open Earth data. We are looking for an intern to assist in developing a Flood Risk Index. FRI will provide current flood risk estimates for cities, districts, and river basins. The FRI will be built using inundation maps generated by the HFMT and open-access datasets including population density, building footprint, elevation, GDP, land use, poverty maps, and meteorological and hydrological data.

Description of Responsibilities:

- Collect and synthesize open access socioeconomic datasets.
- Construct the flood risk index for selected cities.
- Validate the flood risk index for selected cities.
- Undertake additional tasks as assigned by the supervisor.

Learning objective:

Develop interns' research knowledge and capabilities, including the ability to construct and validate a flood risk index using open-access datasets.

Competencies

Core Values:

- Respect for Diversity
- Integrity
- Professionalism

Core Competencies:

- Awareness and Sensitivity Regarding Gender Issues
- Accountability
- Creative Problem Solving
- Effective Communication
- Inclusive Collaboration

Qualifications

Education:

- University studies in one of the following disciplines: Disaster management, Remote Sensing, GIS, Hydroinformatics, Computer Science, Environmental Science or other relevant subjects is required.
- Be in their final year of undergraduate study or enrolled in a graduate degree programme or is within the two-year post-graduation (maximum) from either a bachelors', masters' or PhD degree programme.
- Eligibility requirements as available at: [internship-programme](#)
- Excellent writing and research skills, including ability to conduct searches in academic databases
- Ability to conduct geospatial analysis and statistical analysis

- Working knowledge of ArcGIS and Google Earth Engine
- 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.

Language:

- Excellent communication skills (written and oral) in English are required;
- Working knowledge of another UN language is an advantage.

Application Procedure

Interested and eligible (must satisfy [Eligibility Criteria](#)) applicants should submit their application online through [Impactpool](#) and **must** upload all required documents listed below:

- A completed and signed [Internship Application Form](#) downloadable from the UNU-INWEH website.
- A **separate** cover letter with a) a brief statement of purpose and b) why you think an internship would be a valuable opportunity and c) setting out how your qualifications and description of previous relevant experience match the requirements of the position.
- A Copy of Your University Transcript: Undergraduate or Graduate transcript. Unofficial is acceptable.
- For Non-Native English Speakers, a Copy of Your English Language Certification (E.g., TOEFL, IELTS, TOEIC); not required if the applicant has completed undergraduate and/or graduate studies with English as the medium of instruction. See [FAQ](#) Section 2 for further information on language certification.
- Confirmation of Family Relationship downloadable from the [UNU-INWEH website](#) .
- **Only** upload documents as requested. Applications submitted with additional documents e.g. reference letters can be disqualified.
- An indication of the reference number of the vacancy announcement **(2021/UNU/INWEH/INTERN/FRI/26)**
- Please **include** your surname in the file names of any attachments.

Candidates invited for interview must submit prior to the interview the following documents:

- Document(s) for Proof of enrollment or graduation; downloadable from the [UNU-INWEH website](#)
- Two Letters of Recommendation from your references as specified in application form (#17).
- Proof of health and life/accident insurance valid for the location in which the internship will be carried out. Selected intern must have health and life insurance. **NOTE: ONLY** applicable for on-site internships.

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

UNU accepts no responsibility for costs arising from accidents and/or illness or death incurred during the internship.

Duration and Start Date:

The duration of this internship is 6 months on a full-time basis with an expected start date of 15 May or 15 June as soon as possible thereafter. Part-time applications will be considered under exceptional conditions.

Duty Station:

The successful candidate shall undertake the internship remotely due to the ongoing pandemic associated with travel restrictions, uncertainties and delays in many aspects. This arrangement should also limit possible exposure to COVID-19. Interns working remotely must have access to a personal laptop or desktop with basic functionalities and internet for the duration of their in-/externship.

Stipend

Interns who are not in receipt of financial support (*please indicate on application form; 15 c & d*) for the purpose of this internship from other sources such as universities or other institutions will receive a stipend from UNU to partially subsidize basic daily expenses such as meals, transportation, and internet costs for the duration of the internship.

The monthly amount of the stipend will be determined according to the location of the in-/extern based on the stipend rates in effect. The stipend will be paid on a monthly basis and part-time internship arrangements are prorated accordingly.

Additional Information

Interns are not staff members and may not represent UNU in any official capacity.

The purpose of the Internship Programme is not to lead to further employment with UNU but to complement an intern's studies. Therefore, there should be no expectation of employment at the end of an internship.

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 organisation.

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.