

SCHOOL OF HUMANITIES, SOCIAL SCIENCES & LAW (HSSL)

POSTDOCTORAL RESEARCH FELLOW - GLOBAL WATER DATA SCIENCE UNESCO CENTRE FOR WATER LAW, POLICY & SCIENCE

THREE YEARS FIXED TERM (2023 – 2026) GRADE 7 - £34,308 - £40,931 (1.0 FTE)

Responsible to: The Director, UNESCO Centre for Water Law, Policy and Science

Purpose of the Post:

The ever-increasing pace of environmental change intertwined with human behaviours situates water management (quantity and quality) as part of a broader nexus of food, energy and health issues worldwide. The **Postdoctoral Research Fellow GLOBAL WATER DATA SCIENCE** will be responsible for analysing water resources, land use, technology and climate change relations over scales spanning the global to the local. The focus will be to advance the use of global geospatial data and artificial intelligence to support actionable decisions promoting climate resilient water futures. The postholder will work collaboratively with colleagues in the Centre, across the University and the international UNESCO family in pursuit of equitable access and sustainable management of water and sanitation for all, consistent with the UNs Sustainable Development Goals.

The postholder will develop, promote and coordinate the use of geospatial intelligence in the field of global water resources using model-based prediction, optimization and data-enabled decision-support. S/he will be expected to participate in collaborative science with project partners, to play an important role in mentoring postgraduate researchers (PGRs) and undertake professional development activities in consultation with the Director of the Centre. Familiarity and expertise in open-source approaches, application programming interfaces, code repositories and reproducible documentation are also expected. Through engagement with local and international stakeholders the ambition of the position is therefore to ensure the impact of water-related research from the University of Dundee reaches its full potential.

Principle Duties:

The successful candidate will be expected to carry out a range of duties, including:

- Advance the university's excellence agenda in regard of internationally leading research into global water resources and ongoing environmental change;
- Develop digital infrastructure as needed to support the Centre's operations and coordinate the creation and delivery of online spatial data services and visualizations;
- Publishing results in peer reviewed journals and presenting at relevant national and international conferences;
- Develop grant proposals for external funding support;
- Contribute to positively building the Centre's external relations profile by producing regular updates (e.g. newsletters, blogs etc.);
- Collaborate in the development of new training and teaching programmes, including online provision;
- Contribute to the supervision of postgraduate researchers (doctoral students) aligned with the Centre;
- Assist the Director with planning and the identification and development of opportunities that facilitate achievement of the Centre's objectives.

Detailed information of Post

The Centre for Water Law, Policy and Science is the UK's only Category II UNESCO Centre and receives significant funding from the Scottish Government to underwrite its activities. This funding brings a new focus to the Centre in a way that capitalises on the unique strength of water-related research in Dundee across multiple disciplines and builds on the Scottish Government's efforts to raise and support the profile of water research, most recently through the establishment of Scotland as the world's first Hydro Nation Agenda. The new postdoctoral Fellow in Global Water Data Science will support the delivery of online spatial data services and water future visualizations critical to making the Centre's research more widely accessible and ensuring that the impact of such research is maximised.

Under the auspices of UNESCO's Intergovernmental Hydrology Programme (IHP) the Centre is the only Category II water Centre in the UK and unique in the UNESCO 'Water Family' in allying critical research on the law relating to fresh water with all relevant areas of science with policy development and implementation. Integration of relevant areas of research within the university is strongly encouraged, with institutional networks in place to bring researchers and teaching expertise from different disciplinary backgrounds together. This includes the MSc programme in Sustainability and Water Security.

The Centre is part of the School of Humanities, Social Sciences and Law. It sits between the Division of Energy, Environment and Society (EES), which includes geographers and environmental scientists, as well as energy lawyers, economists and political scientists and the Dundee Law School, home to environmental and water law academics. Wider issues of governance and social justice are important themes within the School, which further align to the University's priority themes of *climate action & net zero*, *equity & inclusion* and *population & wealth* expounded in the new University of Dundee Strategy 2022- 2027.

Since its inception, Centre staff have secured significant levels of external research funding (more than £5 million since 2008). The bulk of this has been related to highly interdisciplinary projects demanding dynamic interfaces to be developed between legal analysis, natural and political sciences, economics and stakeholder participation. In addition, the Centre's work has been characterised by a strong development focus, examining ways in which legal, institutional and policy frameworks at the national and international levels can be used to improve the water management situations in developing countries, most prominently in Bangladesh.

The main measure of research quality in the UK is the Research Excellence Framework (REF) and in the most recent results, published in May 2022, research in water contributed to the results for both Law and Geography & Environmental Studies. Achieving impact beyond the academy, helping to change lives locally and globally is a key concern for all members of the Centre, as exemplified by our winning of the prestigious United Nations Risk 2019 Award for the development of disaster-resilient 'floating homes' in Bangladesh.

The University of Dundee is one of the world's top 250 institutions in the Times Higher Education 2023 rankings and is one of only 12 in the United Kingdom to hold a Gold Award in the Teaching Excellence Framework 2017. The University of Dundee is 34th in the world for the highest proportion of highly cited publications in the 2022 CWTS Leiden Rankings based on the proportion of citations in the most cited 1% of articles across all disciplines. In 2020 Dundee was awarded Scotland's first institutional Gold Watermark for Public Engagement from the National Coordinating Centre for Public Engagement (NCCPE).

The University of Dundee is a diverse community, and we are committed to opportunity for all. We have a flexible and supportive working environment, offering a range of family friendly policies. We have staff networks for LGBT+ and BME staff and a comprehensive Disability Service. We are also holders of an Athena Swan Bronze Award, the Bronze mark of the Race Equality Charter and members of Stonewall.

PERSON SPECIFICATION

Postdoctoral Research Fellow - Global Water Data Science (UNESCO Centre of Water Law, Policy & Science)

<u>Essential</u>	<u>Desirable</u>
1. Education/Qualifications	
<ul style="list-style-type: none">- PhD in geographical, earth or environmental sciences, engineering, information and computing sciences or closely related discipline	<ul style="list-style-type: none">- Demonstrate a strong track record of written and verbal communication
2. Experience	
<ul style="list-style-type: none">- Experience in empirical and/or numerical modelling for environmental applications and use of geospatial analysis (GIS) and visualisation techniques;- Environmental data analysis, including the use of climate and satellite-derived remote sensing data for GIS applications including hydrological models;- Scientific and statistical programming (such as R, Python, Fortran), a strong emphasis on open-source platforms is expected;- Data management capabilities;- Demonstrated collaboration skills and proven publication record, preferably two or more first-authored papers in strong peer-reviewed journals.	<ul style="list-style-type: none">- Experience in the application of geospatial data into hydrology and water resource application, for example hydrological models such as HEC-RAS/HMS, SWAT, MODFLOW....- Ability to drawdown climate, socio-economic and environmental data and scenarios produced by the Intergovernmental Panel on Climate Change (IPPC);- Proven ability to work across disciplines, ideally between physical and social scientists;- Experience of working with international organisations;- Working in related sectors e.g. freshwater management and governance; sustainability; global change; health and wellbeing; international development; public policy;- Public engagement and translation of complex findings to publicly digestible form.
3. Personal Qualities	
<ul style="list-style-type: none">- Self-motivation;- Ability to work under pressure and meet deadlines;- Excellent communication skills, including being able to effectively interact with people at all social and political levels, and across cultural boundaries.	<ul style="list-style-type: none">- Ability to work with minimum supervision;- Management skills;- Diplomatic skills.