



**An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta**
Department of Housing,
Local Government and Heritage



Candidate Information Booklet

Open competition for the appointment to the position of:

Postdoctoral Researcher –
Research and Infrastructure Support for the Newly Established Irish Soil
Moisture Observation Network (ISMON). (Fixed term Contract)

Department of Housing, Local Government and Heritage
Met Éireann

Closing Date: 19th December 2023

Please read carefully

Title of Position	Postdoctoral Researcher (ISMON)
Department	Housing, Local Government and Heritage
Division	Met Éireann.
Location	Met Éireann HQ, Glasnevin Hill, Dublin 9
Tenure	Fixed term contract – 3 years

Introduction

The ISMON long-term observation platform aims to significantly enhance our understanding of the water cycle in Ireland. Accurate information on soil moisture conditions from ISMON will further improve short and medium term weather prediction. Such monitoring and modelling, and associated advisories and decision support systems (DSS) will become increasingly important for a wide range of real-life applications, such as the protection of soil and water quality, mitigation of greenhouse gas emissions in farming and forestry, ensuring optimal grass and crop production, flood and forest fire risk management and forecasting.

ISMON is the umbrella for several soil moisture networks that got established recently.

- 1) **AGMET Group** (agmet.ie) established ten Cosmic Neutron Ray Sensor (CNRS) station across Ireland where soil moisture conditions will be monitored using both state-of-the-art CNRS that can measure soil moisture conditions over a large area (approximately 0.6 hectares) as well as an array of TDR soil moisture probes. The CNRS sites will place Ireland at the forefront of research and practice in monitoring and modelling soil moisture conditions.
- 2) In 2021 Teagasc's National Agricultural Soil Carbon Observatory (**NASCO**) was established. The data generated will provide accurate, long-term information on the carbon dynamics of Irish agricultural systems. Currently there are 30 eddy covariance flux towers, which also include soil moisture TDR probes located on benchmark sites including agricultural grasslands, crop areas, and forestry, covering both mineral soils and peatlands.
- 3) **Terrain AI**, led by Maynooth University in collaboration with other Irish institutions (Teagasc, TCD, UCD, DCU and UL) is focused on improving our understanding of the impact of human activity on land use and how it relates to climate change. Terrain-AI aims at informing the development of more effective, spatially refined policies around carbon management and mitigation. Data are being captured from satellites, airborne platforms, as well as in-field instruments, from 25+ benchmark sites strategically located across Ireland, including the new NASCO sites. As soil moisture plays a key role in driving carbon and moisture fluxes, a core component of Terrain-AI is the expansion of the soil monitoring network and ten soil moisture probes have been installed, mostly at Met Éireann synop stations as well as a couple on other sites.

- 4) **COSMOS-UK** began in 2013 and now has grown to about 50 sites across the UK, with the primary purpose of delivering soil moisture data in near real-time from a variety of soil and land-use types. There are currently three COSMOS-UK stations in Northern Ireland (installed in 2016 & 2018), with a further 2-3 sites planned. All COSMOS-UK stations are equipped with a CRNS, along with point soil moisture sensors at various depths using the time-domain transmissometry (TDT) technique.

1. Job Description:

The Postdoctoral Researcher will work together with colleagues in Met Éireann (Observations, Database, AgMet etc.) and ISMON partner organisations to ensure the successful execution of the project and associated activities, including engagement with key stakeholders on the delivery of objectives. The researcher will establish and streamline data transfers from the ISMON network to MÉ database ensuring data are recorded correctly and quality controlled, including setting up of metadata for ISMON sites.

The Postdoctoral Researcher will work with select expert users from the ISMON group to ensure data is consistent between the different measurement techniques. After consultation and feedback from expert users, the data will be made publicly available on met.ie and data.gov.ie. A review of the distribution of the network station locations will be conducted to identify any possible gaps in the network coverage in terms of landcover, soil type or weather. One of the major applications will be to produce improved and more realistic spatially distributed soil moisture content and/or deficit maps for the use in e.g. agricultural decisions support tools (nutrient management), grass and crop growth models and flood risk assessment.

The proposed research will produce realistic initial conditions for soil moisture models used along with IREPS (Irish Regional Ensemble System) and ECMWF (European Centre for Medium-Range Weather Forecasts) data, enabling better forecasts at local and national scales.

Machine learning and AI techniques will be applied to improve on the spatially distributed soil moisture products to achieve more accurate representation of the observation based and predicted future soil moisture conditions.

Peer-reviewed research papers will be published on the establishment of ISMON and use of the data for modelling and forecasting, in collaboration with Met Éireann colleagues and the wider research community.

2. Principal Tasks:

- Establishment of data streams to Met Éireann's Observational Database.
- Literature review and best practice of quality control procedures of soil moisture data. Implementation of QC of data measured by CNRS and other sources. Homogenisation between techniques used within ISMON.

- Producing a test data set for expert ISMON users prior to releasing data to public. Communication of soil moisture data and reports within Met Éireann and publishing data. Reporting data to international soil moisture network and further consistency checks and homogenisation of soil moisture data if required.
- Network coverage review and ingesting new stations.
- Producing gridded soil moisture data based on observation and improving this with ML and AI techniques. Predicting probabilistic future soil moisture using ensemble data from IREPS and ECMWF and improving this with ML and AI techniques. Using the gridded soil moisture in decision support systems such as the Nutrient Management Plan (slurry spreading) etc.

Working Environment:

The Postdoctoral Researcher will be required to work in Met Éireann Headquarters located at Glasnevin Hill, Dublin 9. Where possible, the successful candidates may be authorised to work remotely in line with approved policies for blended working.

Educational, professional or technical qualifications, knowledge, skills, aptitudes, experience, training:

a) ESSENTIAL for the job

1. A Ph.D .* in one or more of the following: atmospheric sciences, physics, mathematics, hydrology, civil engineering, soil science or a related discipline.
2. Knowledge of atmospheric or hydrological processes.
3. Strong programming and quantitative skills.
4. Project management experience.
5. Strong organisational & teamwork skills.
6. Effective oral and written communication skills.

b) DESIRABLE (but not essential) for the job

1. Experience with atmospheric or hydrological measurements, data analysis or modelling.
2. Experience with Linux computing environment, bash scripting and database (SQL or other).
3. A proven track record of publication in peer-reviewed journals.

* Applicants who are close to completion of a Ph.D. will also be considered

ELIGIBILITY TO APPLY AND CERTAIN RESTRICTIONS ON ELIGIBILITY

Eligible candidates must be:

- (a) A citizen of the European Economic Area (EEA). The EEA consists of the Member States of the European Union, Iceland, Liechtenstein and Norway; **or**
- (b) A citizen of the United Kingdom (UK); **or**
- (c) A citizen of Switzerland pursuant to the agreement between the EU and Switzerland on the free movement of persons; **or**
- (d) A non-EEA citizen who has a stamp 4 visa; **or**
- (e) A person awarded international protection under the International Protection Act 2015 or any family member entitled to remain in the State as a result of family reunification and has a stamp 4 visa **or**
- (f) A non-EEA citizen who is a parent of a dependent child who is a citizen of, and resident in, an EEA member state or the UK or Switzerland and has a stamp 4 visa.
- (g) **Non-EEA applicants** are welcome under the “Fast Track Work Permit for Non-EU R&D (Hosting Agreement) Scheme”. See for **here** more information. Should this scheme and its conditions apply, a Hosting Agreement can be put in place between the applicant and the employer. Non-EEA applicants are responsible for ensuring they can secure a visa to travel to Ireland, if applicable.

To qualify candidates must meet one of the citizenship criteria above by the date of any job offer.

Incentivised Scheme for Early Retirement (ISER)

It is a condition of the Incentivised Scheme for Early Retirement (ISER) as set out in Department of Finance Circular 12/09 that retirees, under that Scheme, are debarred from applying for another position in the same employment or the same sector. Therefore, such retirees may not apply for this position.

Department of Health and Children Circular (7/2010)

The Department of Health Circular 7/2010 dated 1 November 2010 introduced a Targeted Voluntary Early Retirement (VER) Scheme and Voluntary Redundancy Schemes (VRS). It is a condition of the VER scheme that persons availing of the scheme will not be eligible for re-employment in the public health sector or in the wider public service or in a body wholly or mainly funded from public moneys. The same prohibition on re-employment applies under the VRS, except that the prohibition is for a period of 7 years. People who availed of the VER scheme are not eligible to compete in this competition. People who availed of the VRS scheme and who may be successful in this competition will have to prove their eligibility (expiry of period of non-eligibility).

Collective Agreement: Redundancy Payments to Public Servants

The Department of Public Expenditure and Reform letter dated 28th June 2012 to Personnel Officers introduced, with effect from 1st June 2012, a Collective Agreement which had been reached between the Department of Public Expenditure and Reform and the Public Services Committee of the ICTU in relation to ex-gratia Redundancy Payments to Public Servants. It is a condition of the Collective Agreement that persons availing of the agreement will not be eligible for re-employment in the public service by any public service body (as defined by the Financial Emergency Measures in the Public Interest Acts 2009 – 2011) for a period of 2 years from termination of the employment. People who

availed of this scheme and who may be successful in this competition will have to prove their eligibility (expiry of period of non-eligibility) and the Minister's consent will have to be secured prior to employment by any public service body.

Declaration

Applicants will be required to declare whether they have previously availed of a public service scheme of incentivised early retirement and/or the collective agreement outlined above. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Public Service employment and/or where they have received a payment-in-lieu in respect of service in any Public Service employment.

Principal Conditions of Service

General:

The appointment is subject to the Civil Service Regulations Acts 1956 to 2005 and the Public Service Management (Recruitment and Appointments) Act 2004 and any other Act for the time being in force relating to the Civil Service.

Pay: On appointment €51,042 per annum, year 2 €54,341 per annum, year 3 €57,685.00 per annum.

Important Note

Payment will be made fortnightly in arrears by Electronic Fund Transfer (EFT) into a bank account of an officer's choice. Payment cannot be made until a BIC code and IBAN number and bank sort code has been supplied to the Personnel Section of the relevant Department or Office. Statutory deductions from salary will be made as appropriate by the Department/Office.

An officer will agree that any overpayment of salary or of travel and subsistence may be deducted from future salary payments due to an officer in accordance with the Payment of Wages Act 1991. In accordance with that Act, the Department/Office will advise the officer in writing of the amount and details of such overpayment and give at least one week's notice of the deduction to take place and will deduct the overpayment, at an amount that is fair and reasonable having regard to all the circumstances, within six months of such notice in accordance with the Act.

Tenure and probation:

The appointment is to a **temporary** position in the civil service for a period of 3 years.

The appointee will be required to serve a 12-month probationary period.

The appointment is subject to termination at any time by either side in accordance with the Minimum Notice and Terms of Employment Acts 1973 to 2005. In the case of serious misconduct, the employment may be terminated at any time without notice and without penalty.

The appointment, which is strictly temporary, carries with it no entitlement to permanent status (by way of limited competition or otherwise).

Unfair Dismissals Act 1977 - 2015:

The Unfair Dismissals Acts 1977-2015 will not apply to the termination of this employment by reason only of the expiry of this probationary contract without it being renewed.

Duties:

The officer will be required to perform any duties appropriate to the position which may be assigned from time to time. The position is full time and the officer may not engage in private practice or be connected with any outside business, which would interfere with the performance of official duties.

Headquarters:

The officer's headquarters will be such as may be designated from time to time by the Director. When absent from home and headquarters on duty appropriate travelling expenses and subsistence allowances will be paid, subject to the normal civil service regulations and the guidelines of Department of Housing, Local Government and Heritage.

Hours of attendance:

Hours of attendance will be as fixed from time to time but will amount, on average, to not less than 35 hours net of lunch breaks. Flexibility may be required with regard to extra attendance from time to time. The rate of remuneration payable for any exceptional extra attendance will be in line with Department of Public Expenditure and Reform circulars.

Annual Leave

On recruitment, annual leave will be 25 working days a year. This allowance, which is subject to the usual conditions regarding the granting of annual leave, is on the basis of a five-day week and is exclusive of the usual public holidays

The Organisation of Working Time Act:

The terms of the organisation of Working Time Act, 1997 will apply, where appropriate, to this employment.

Sick Leave:

Pay during properly certified sick absence, provided there is no evidence of permanent disability for service, will apply on a pro-rata basis, in accordance with the provisions of the sick leave circulars as amended from time to time.

Officers, who will be paying the Class A rate of PRSI, will be required to sign a mandate authorising the Department of Social Protection to pay any benefits due under the Social Welfare Acts direct to the Department of Environment, Community and Local Government. Payment of salary during illness will be subject to the officer making the necessary claims for social insurance benefit to the Department of Social Protection within the required time limits.

Secrecy, confidentiality and standards of behaviours:**Official Secrecy and Integrity**

During the term of the probationary contract, an officer will be subject to the Provisions of the Official Secrets Act, 1963, as amended by the Freedom of Information Act 2014. The officer will agree not to disclose to unauthorised third parties any confidential information, especially information with commercial potential, either during or subsequent to the period of employment.

Civil Service Code of Standards and Behaviour

The officer will be subject to the Civil Service Code of Standards and Behaviour.

Ethics in Public Office Act 1995

The Ethics in Public Office Acts 1995 will apply, where appropriate, to this employment.

Prior approval of publications:

An officer will agree not to publish material related to his or her official duties without prior approval by the Secretary General of the Department.

Political activity:

During the term of employment the officer will be subject to the rules governing civil servants and politics.

Superannuation and Retirement

The successful candidate will be offered the appropriate superannuation terms and conditions as prevailing in the Civil Service at the time of being offered an appointment. In general, an appointee who has never worked in the Public Service will be offered appointment based on membership of the Single Public Service Pension Scheme ("Single Scheme"). Full details of the Scheme are at www.singlepensionscheme.gov.ie.

Where the appointee has worked in a pensionable (non-Single Scheme terms) public service job in the 26 weeks prior to appointment or is currently on a career break or special leave with/without pay different terms may apply. The pension entitlement of such appointees will be established in the context of their public service employment history.

Key provisions attaching to membership of the Single Scheme are as follows:

- Pensionable Age: The minimum age at which pension is payable is the same as the age of eligibility for the State Pension, currently 66.
- Retirement Age: Scheme members must retire on reaching the age of 70.
- Career average earnings are used to calculate benefits (a pension and lump sum amount accrue each year and are up-rated each year by reference to CPI).
- Post retirement pension increases are linked to CPI.

Pension Abatement

- If the appointee has previously been employed in the Civil or Public Service and is in receipt of a pension from the Civil or Public Service or where a Civil/Public Service pension comes into payment during his/her re-employment that pension **will be subject to abatement** in accordance with Section 52 of the Public Service Pensions (Single Scheme and Other Provisions) Act 2012. **Please Note: In applying for this position you are acknowledging that you understand that the abatement provisions, where relevant, will apply. It is not envisaged that the employing Department/Office will support an application for an abatement waiver in respect of appointments to this position.**
- However, if the appointee was previously employed in the Civil or Public Service and awarded a pension under voluntary early retirement arrangements (other than the Incentivised Scheme of Early Retirement (ISER), the Department of Health Circular 7/2010 VER/VRS or the Department of Environment, Community & Local Government Circular letter LG(P) 06/2013, any of which renders a person ineligible for the competition) the entitlement to that pension will cease with effect from the date of reappointment. Special arrangements may, however be made for the reckoning of previous service given by the appointee for the purpose of any future superannuation award for which the appointee may be eligible.
- **Department of Education and Skills Early Retirement Scheme for Teachers Circular 102/2007**
The Department of Education and Skills introduced an Early Retirement Scheme for Teachers. It is a condition of the Early Retirement Scheme that with the exception of the situations set out in paragraphs 10.2 and 10.3 of the relevant circular documentation, and with those exceptions only, if a teacher accepts early retirement under Strands 1, 2 or 3 of this scheme and is subsequently employed in any capacity in any area of the public sector, payment of pension to that person under the scheme will immediately cease. Pension payments will, however, be resumed on the ceasing of such employment or on the person's 60th birthday, whichever is the later, but on resumption, the pension will be based on the person's actual reckonable service as a teacher (i.e. the added years previously granted will not be taken into account in the calculation of the pension payment).
- **III-Health-Retirement**
Please note any person who previously retired on ill health grounds under the terms of a superannuation scheme are required to declare, at the initial application phase, that they are in receipt of such a pension to the organisation administering the recruitment competition.

Applicants will be required to attend the CMO's office to assess their ability to provide regular and effective service taking account of the condition which qualified them for IHR.

Appointment post ill-health retirement from Civil Service

If successful in their application through the competition, the applicant should be aware of the following:

1. If deemed fit to provide regular and effective service and assigned to a post, their civil service ill-health pension ceases.
2. If the applicant subsequently fails to complete probation or decides to leave their assigned post, there can be no reversion to the civil service IHR status, nor reinstatement of the civil service IHR pension, that existed prior to the application nor is there an entitlement to same.
3. The applicant will become a member of the Single Public Service Pension Scheme (SPSPS) upon appointment if they have had a break in pensionable public/civil service of more than 26 weeks.

Appointment post ill-health retirement from Public Service

1. Where an individual has retired from a public service body his/her ill-health pension from that employment may be subject to review in accordance with the rules of ill-health retirement under that scheme.
2. If an applicant is successful, on appointment the applicant will be required to declare whether they are in receipt of a public service pension (ill-health or otherwise) and their public service pension may be subject to abatement.
3. The applicant will become a member of the Single Public Service Pension Scheme (SPSPS) upon appointment if they have had a break in pensionable public/civil service of more than 26 weeks.

Please note more detailed information in relation to pension implications for those in receipt of a civil or public service ill-health pension is available [via this link](#) or upon request to PAS.

Pension Accrual

A 40-year limit on total service that can be counted towards pension where a person has been a member of more than one pre-existing public service pension scheme (i.e. non-Single Scheme) as per the 2012 Act shall apply. This 40-year limit is provided for in the Public Service Pensions (Single Scheme and Other Provisions) Act 2012. This may have implications for any appointee who has acquired pension rights in a previous public service employment.

Additional Superannuation Contribution

This appointment is subject to the Additional Superannuation Contribution (ASC) in accordance with the Public Service Pay and Pensions Act 2017. **Note:** ASC deductions are in addition to any pension contributions (main scheme and spouses' and children's contributions) required under the rules of your pension scheme.

For further information in relation to the Single Public Service Pension Scheme please see the following website - www.singlepensionscheme.gov.ie.

IMPORTANT NOTICE

The above represents the principal conditions of service and is not intended to be the comprehensive list of all terms and conditions of employment which will be set out in the employment contract to be agreed with the successful candidate.

Competition Process

The Department of Housing, Local Government and Heritage is recruiting for this position under its Recruitment Licence issued by the Commission for Public Service Appointments (CPSA) and in accordance with the CPSA's Code of Practice.

How to Apply

Applicants should submit a completed application form to recruitment@met.ie.

The Application Form allows applicants to detail their qualifications, skills and experience and provide a personal statement outlining why they should be considered for the post and how they meet the essential requirements and personal attributes of the post.

Please note: Only applications submitted on the official application form will be considered. The application form is available on Met Éireann's website www.met.ie/about-us/vacancies.

Closing Date

The closing date for receipt of applications is Tuesday 19th December 2023 at 5pm.

All applications will be acknowledged. If you do not receive an acknowledgement within 3 days of applying please email recruitment@met.ie.

Essential Requirements and Personal Attributes

Candidates will be required to possess all the essential requirements and personal attributes required for the position. They will be requested to demonstrate this both in the application form and, if shortlisted, by interview.

Health

Candidates must be in a state of health such as would indicate a reasonable prospect of ability to render regular and efficient service.

Selection Process

The selection process may include the shortlisting of candidates on the basis of the application form and will include an interview.

Shortlisting

A shortlisting process will involve an expert panel that will select candidates for interview who, based on an examination of the application form and assessed against the essential requirements and personal attributes required, appear to be the most suitable for the position.

Interview

Candidates who are shortlisted will be called for interview by an expert panel. The interview will focus how the candidate meets the essential requirements and personal attributes of the post and their career and experience to date.

Note: Candidates will be notified of interview dates and arrangements at the earliest opportunity. The onus will be on candidates to make themselves available for interview as advised.

Deeming of candidature to be withdrawn

Candidates who do not attend for interview as required or who do not, when requested, furnish such evidence, as the Department requires in regard to any matter relevant to their candidature, will have no further claim to consideration.

Candidate Feedback

Feedback will be provided on written request.

Review Procedures in relation to the Selection Process

Requests for a review are dealt with in accordance with the codes of practice published by the published by the Commission for Public Service Appointments. The Codes can be accessed at www.cpsa-online.ie.

Confidentiality

Please note that all personal data shall be treated as confidential in accordance with the Data Protection Acts, 1988 and 2003.

Candidates should note canvassing will disqualify.