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Arts & Humanities
Research Council

UK Droughts and Water Scarcity Announcement of Opportunity – Work Package 4

Closing Date: 16.00 on 20th January 2017

1. Summary

This Announcement of Opportunity is for the second phase of funding, which is known as Work Package 4 (WP4) of the UK Droughts and Water Scarcity Programme. WP4 is expected to build upon this coordinated programme of research to orientate it towards maximising impact for a diverse range of stakeholders in droughts and water scarcity. This is a closed call, in which the Principal Investigators of the current projects are asked to lead the development of a single proposal that addresses the research challenges set out in this specification, in consultation with those working on the projects.

Up to £2m (80% FEC) of NERC funding is available for this call.

The closing date for the proposal is 16.00 on 20th January 2017.

2. Background

UK Droughts and Water Scarcity is a £12.5 million Natural Environment Research Council (NERC) led five year interdisciplinary programme, in collaboration with the Arts and Humanities Research Council (AHRC), Biotechnology and Biological Sciences Research Council (BBSRC), Economic And Social Research Council (ESRC) and Engineering and Physical Sciences Research Council (EPSRC). The programme aims to deliver evidence to inform adaptation and management decisions before, during and after drought events, and in the context of increasing concerns about water security.

The Programme has three scientific goals:

- a) Characterise the drivers and nature of droughts and water scarcity, including the environmental, social and cultural factors that influence their occurrence, severity and impact;
- b) Examine the multiple and inter-linked impacts of UK droughts and water scarcity on the environment, agriculture, infrastructure, society and culture and the trade-offs between them;
- c) Develop methods to support decision making for drought and water scarcity planning and management and to assess opportunities through management (including community and public responses) to reduce their occurrence and severity.

The Programme has three existing work packages linked to the programme goals:

- WP1: Characterisation and quantification of the roles of multiple drivers, their impacts, and cumulative effects during historic periods of drought and water scarcity and methods to support decision-making;
- WP2: Forecasting droughts and water scarcity, and methods to support decision-making;
- WP3: Impacts of droughts and water scarcity, and methods to support decision-making.

The programme so far has funded four research projects which address the first three programme work packages.

- WP1: [Historic Droughts project](#) (PI: Dr Jamie Hannaford);
- WP2: [IMPETUS project](#) (PI: Dr Len Shaffrey)
- WP3: [MaRIUS](#) (PI: Professor Jim Hall) and [DRY](#) (PI: Professor Lindsey McEwen) projects.

The [Announcement of Opportunity](#) for the first three work packages is available on the NERC website and provides further background on the programme.

3. Scope

This second phase of funding is known as WP4 and will address the third of the programme goals. This WP will build upon the coordinated interdisciplinary programme of research to orientate it towards maximising impact for a diverse range of stakeholders in droughts and water scarcity. It will integrate scientific and methodological advances from across the four funded projects with the aim of synthesising and interpreting the results and findings from the individual projects. It will provide a set of outputs and activities that can directly inform and support policy development and contribute to more effective drought management and drought planning policy and practice.

WP4 will draw from across the various disciplinary perspectives, especially environmental, social, historical and cultural, to integrate process understanding across meteorological, ecological, hydrological, geological, agricultural, social, economic and cultural systems. This will enable a more integrated understanding of the drivers of drought, and to enable coherent scenarios of drought impacts to be generated to inform improved drought decision-making in future.

WP4 will entail working with a wide variety of stakeholders (listed in Annex A) and the wider public to identify where further development of the programme is required to significantly increase the beneficial impact of the programme on drought planning, management and impact reduction. It should involve stakeholders from each of the 4 grants in the programme to promote uptake of the research and outputs such as data. WP4 should also assess the beneficial impacts of the Droughts and Water Scarcity programme.

A key part of WP4 will be co-working between the stakeholders and researchers. This could be achieved by the stakeholders distinguishing where the research could make a contribution to what is needed to be delivered or by integrating and evaluating different stakeholders' decision-making support systems/methods.

WP4 will consider how priorities are decided during drought management and planning, as well as options that are not currently utilised which could be put in place for future droughts. This will incorporate the research and critical relationships established in WPs 1-3, but will be focused around building in some evaluative aspects, for example testing and reporting on actual examples delivered in three focus areas for WP4.

- Focus Area 1 (FA1): Consider where risk and resilience is already considered within integrated water resources and drought planning and what can be done to improve this;
- Focus Area 2 (FA2): Identify opportunities to transform drought event management through improved situation monitoring, forecasting, decision making and communication; and
- Focus Area 3 (FA3): Working with the diverse range of stakeholders to identify actions that will enable improved management of droughts and water scarcity.

Through these Focus Areas WP4 will support improvements in both long-term planning (for example, at practical, planning and policy levels) and drought event management, and facilitate the inclusion of the full range of stakeholders (both statutory and non-statutory, including the wider public) in decision-making.

WP4 will build on existing models employed in research and decision-making but will evolve its component models in response to progress in WPs 1-3. To assess their value in providing decision-relevant information, integrated models will be tested for their ability to simulate the system interactions identified in WP1 for certain key historical droughts. However, modelling is only one aspect of research that underpins decision-making, and WP4 should allow for integration of different types of knowledge/visualisation of knowledge within decision-making.

Additionally, applicants are asked to consider how the proposed research will align and coordinate with work being undertaken by other initiatives to deliver multiple benefits and ensure effective knowledge exchange. Of particular relevance is other Research Council investments and work being undertaken by Defra, the Met Office, the Environment Agency, Natural England and UK Water Industry research (UKWIR). Refer to the Stakeholder Annex (A) for details of other investments to link to.

4. Eligibility

This is a closed call. The Principal Investigators of the current UK Droughts and Water Scarcity projects (Historic Droughts, IMPETUS, MaRIUS and DRY) are invited to lead the development of a single proposal that addresses the research challenges set out in this specification.

While it is anticipated that much of the work will be undertaken by researchers currently working on the programme, the inclusion of additional expertise may be needed to deliver the aims and objectives of the call.

Standard NERC eligibility requirements for funding apply; see the [NERC Grants Handbook](#) for further details

5. Funding

Up to £2m (80% FEC) of NERC funding is available for this call.

It is expected that Work Package 4 will commence in April 2017 and have a maximum duration of 30 months.

The funding will be added to the existing UK Droughts and Water Scarcity programme awards and it is recognised that the end dates of the projects will change as a result.

6. Application Process

As the funding will be added to the existing awards, the proposal does not have to be submitted via JeS, instead ***the proposal should be emailed to Georgina Tyson at droughts@nerc.a.cuk no later than 16.00 on 20th January 2016.***

The proposal must be completed in single-spaced typescript of minimum font size 11 point, Arial font; with margins of at least 2cm. References should also be at least 11 pointfont. Applicants referring to websites should note that the Assessment Panel may choose not to use them.

The format of the proposal should include the following:

1. A Case for Support, comprised of three parts should be submitted:

Part A – a common **Previous Track Record** (up to **4 sides of A4** in total for all Research Organisations). The Previous Track Record should:

- Provide a summary of the results and conclusions of recent work in the technological/scientific area that is covered by the research proposal including reference to NERC and non-NERC funded work and details of any past collaborative work with other beneficiaries
- Indicate where your previous work has contributed to the UK's competitiveness or to improving the quality of life
- Outline the specific expertise available for the research at the host organisation and that of any associated organisations and beneficiaries.

Part B – a **Description of the Proposed Research**

This must not exceed **16 sides of A4** (including all necessary tables, figures and references) and should address the following points:

- Underlying rationale, scientific and technological issues to be addressed
- Relationship to programme objectives
- Description of the proposed integration of outputs from the previous work packages
- Description of the proposed research – please describe why the work is strategically important, the key research objectives and how these will be achieved
- Relevance to the operational drivers

PART C – a **Description of the Proposed Management Structure and Plans**

The project management plan should be up to **2 sides of A4** and set out how Work Package 4 will be integrated into the programme, including how it will be incorporated into the Programme Coordination Team and knowledge exchange activities.

2. A Justification of Resources, comprised of two parts should be submitted:

PART A - A **common Justification of Resources** of up to **4 sides of A4** for all Research Organisations involved, for all resources sought: Directly Incurred Costs, Investigator effort, use of pool staff resources, any access to shared facilities and equipment and requests for capital costs between £10,000 and the OJEU threshold.

PART B - the **Summary Resources proforma form (Annex B)** should be completed for each research organisation receiving funding to provide a breakdown of the costs so that the additional funding streams can be added to the grants.

3. **Letters of Support** from named Project Partners to confirm that support and facilities will be made available for associated collaborations and co-funding (up **2 sides of A4** each).

4. **Data Management**

Up to **2 sides of A4** to explain the new data that will be generated from WP4 and is of long term value and should be made available to NERC Data Centres for archiving and reuse at the end of the grant. This will identify the changes needed to the existing programme Data Management Plan. Further guidance is available on the [NERC website](#).

5. **Application forms for access to NERC’s Services and Facilities**, if applicable.

Applications involving NERC facilities: PIs wishing to use a NERC facility will need to submit a mandatory ‘technical assessment’ with their proposal (including aircraft, but excluding ships and HPC unless >100MAU on ARCHER is required in any one year). For NERC, this means a quote for the work which the facility will provide. Please see the [full list of facilities](#) to find out which facilities require a quote:

- i. Price quotations for equipment costing more than £25k, if applicable
- ii. A Business Case of up to 2 sides A4 per item for items of equipment above the OJEU threshold, if applicable. Further guidance about NERC capital costs can be found in the NERC Research Grants Handbook.

7. Assessment Process

An Assessment Panel will provide the peer review. The applicants will have the opportunity to present their proposal to the panel.

The assessment criteria will be:

- Research excellence
- Fit to programme requirements

The fit to programme requirements relates to the call scope outlined above.

The programme funders will make a funding decision based on the recommendations of the Assessment Panel.

Timetable

Announcement of Opportunity published	November 2016
Proposal deadline	20 th January 2017
Assessment Panel	February 2017
Award Start	April 2017
Award End	September 2019

8. Queries

For queries please contact Georgina Tyson at droughts@nerc.ac.uk

Stakeholder Annex A

The information below lists some of the relevant stakeholders that the PIs could consult with for WP4. It also details a number of other activities and relevant investments that WP4 should link to, align with and complement but should not duplicate:

Stakeholder organisations with relevance to WP4 with whom the programme could work to increase its impact:

- Agriculture and Horticulture Development Board (AHDB)
- CIWEM: Chartered Institution of Water and Environmental Management
- Environment Agency
- Defra
- Natural England
- National Farmers Union (NFU)
- SEPA
- Supermarkets/food companies (which demonstrate an interest in water, e.g. PepsiCo, ASDA, Sainsbury's, M&S, Nestle)
- The UK Water Partnership
- Water Companies (Welsh Water, Anglian Water, South West Water, Scottish Water, Thames Water, Wessex Water, Albion Water, Severn Trent Water, Yorkshire Water, East Suffolk Water Abstractors Group, Black and Veatch)
- Water UK
- West Country Rivers Trust
- UK Irrigation Association
- UKWIR

Other activities and relevant investments:

- [‘Towards hydrocitizenship. Connecting communities with and through responses to interdependent, multiple water issues’](#) (Connected Communities Environments and Sustainability Large Grant - Professor Owain Jones – Bath Spa University)
- [The Adaptation and Resilience in the Context of Change network \(ARCC\)](#)
- [Sustainable Agriculture Research & Innovation Club \(SARIC\)](#)
- [GCRF Foundation Awards for Global Agricultural and Food Systems Research](#)
- [The Nexus Network](#)
- [Centre for Evaluating Complexity Across the Nexus](#)
- [Centre for Climate Change Economics and Policy](#)
- [GFS Resilience of the UK Food System in a Global context](#)
- [Urban Living Partnership](#)