**Call Reference: DN453963**

*Met Office tendering on behalf of BEIS.*

 **Expressions of Interest for: WCSSP South Africa**

**To register your interest, see notes at the end of this page. Registering interest requires no proposal detail at this stage and carries no obligation to bid.**

**Please note that this Expression of Interest is open to UK researchers only.**

**Grant Funds for the period: June 2020 – March 2021**

**Call for competition to cover the following lots:**

|  |  |  |
| --- | --- | --- |
| **Lot number** | **Title** | **Amount** |
| **SA/WTH1** | Seamless numerical modelling workshop for South Africa across weather and climate timescales | **£100,000** |
| **SA/WTH2** | Metocean Forecast Improvement   | **£100,000** |
| **SA/CLM1** | Attribution workshops | **£120,000** |
| **SA/CLM2** | Comparison of approaches for impact assessment and communication across timescales | **£120,000** |
| **SA/CLM3** | Co-production and co-development of responsible science for services | **£100,000** |

**Key Dates**

|  |  |
| --- | --- |
| **Estimated Publish of Call:***(Start of bidding period).*  | W/C 13th January 2020*A notification email will be sent to parties who have formally registered their interest by way of clicking on the ‘Register Interest’ button displayed below the opportunity on the ProContract portal* |
| **Estimated Bidding Period:**  | 6 – 7 weeks |
| **Estimated Award of Call:**  |  April 2020  |
| **Estimated Delivery Period:** | 1st June 2020 – 31st March 2021  |

**Background**

The Met Office anticipates holding a call for research proposals in January 2020. In preparation for the call, the Met Office is inviting expressions of interest from UK researchers.

The Weather and Climate Science for Service Partnership South Africa (WCSSP South Africa), supported by the UK Government’s Newton Fund, is a research programme that will support the development of capability to underpin services to inform decision makers in climate mitigation and adaptation strategy, supporting climate and weather resilient economic development and social welfare.

**Summary of WCSSP South Africa project aims**

This project promotes economic development and social welfare by enhancing the capability of services and understanding within South Africa with the overarching aims to:

* Underpin Science development by evaluating and developing high resolution models to improve the prediction of high-impact weather. The focus is on pulling science through to weather service areas, ensuring model advancements are applied and used within and around South Africa;
* Strengthen Institutional Capability by developing data services and analytical skills to effectively use model output;
* Develop the capacity to support development of user-led weather services and enhance impact-based forecasting through the sharing of training and expertise.

For further information please visit the project website -

<https://www.metoffice.gov.uk/research/approach/collaboration/newton/wcssp-southafrica>

**Lot details for this call:**

**SA/WTH1: Seamless numerical modelling workshop for South Africa across weather and climate timescales**

**Activity description:**

To support developments within South Africa as well to support SAWS interests, a workshop that will focus on seamless numerical modelling in South Africa (regional and global scale) is proposed. The target participants will include researchers across South Africa together with PhD students, international experts and individuals involved in operational meteorology and provision of climate services. The workshop will be inclusive, with representation from previously disadvantaged institutions, and increased participation from women to address some of the South African government priorities.

The workshop should focus on the current challenges in the simulation of weather and climate as well as ongoing research to deal with known challenges. It should also enable a wider group of researchers and users in South Africa to exploit the UM on the CHPC cluster, e.g., through running simulations, post-processing UM output and using South African observations.

**Anticipated outputs or results:**

The awardee would be expected to provide everything associated with the costs of the workshop: venue, travel and accommodation, if needed, for participants, as well as scoping and organising the workshop itself.

**SA/WTH2: Metocean Forecast Improvement**

**Activity description:**

In addition to running deterministic models, the South Africa Weather Service Marine Unit have access to their own (local) observations and predictions from other operational global weather centres, including the European Centre for Medium Range Weather Forecasts, and both the German and United States National Weather Services.  Although only employed in a very limited capacity at present, the use of these additional data has the potential for producing bias-corrected, optimally-blended, products capable of outperforming those based on just a single source.  Including in the scope the potential for the delivery of a cut-out of the Met Office global models for the South Africa region to further expand the number of solutions offered, this activity will principally look to develop new capability to exploit marine multi-model ensemble data via the application of statistical / machine learning techniques for eliciting valuable insights within the medium-range (i.e. beyond three to five days ahead), with a particular focus on site-specific tailoring.  In the immediate term, it is anticipated this additional post-processing of model data will contribute more accurate marine forecasts (for example, those underpinning essential life-saving services) as well as providing the background, confidence and experience for handling longer-range (and climate) projections in the future.

**Anticipated outputs or results:**

* Report of study into the extent of which the use of multi-model ensemble data can improve the forecast accuracy, and selection of the optimal forecast.
* SAWS capable of blending multi-centre / multi-model forecast data, with production of report on initial tests conducted to date.
* Host a visiting scientist from SAWS Marine Unit for 1 or 2 weeks to develop skills in post-processing of marine forecast data.

**SA/CLM1: Attribution Workshops**

**Activity description:** The fundamental component of this activity is to design and hold a workshop that promotes event attribution engagement within the host country. This should be an intensive week where, after an initial morning of introduction to attribution and the data available, early-career scientists group together to study a recent event of their own choosing from within their home region. Experienced attribution scientists from the UK, and preferably South Africa, should be on-hand to demonstrate techniques and offer advice during that week. The aim is for the study to be completed and written up as part of the workshop, with the aim of submitting the study for publication in the Bulletin of the American Meteorological Society (BAMS) or a similar journal shortly after the end of the week. This has proved to be a draw to bring new scientists into attribution in other projects.

The workshop will require participants to identify events in their region to study, based on the availability of observations and model data for that region and period. All tutorials, hardware, software and data should be put in place before the workshop commences so that participants are ready to start processing models and observations of the event, as well as verifying those datasets against each other historically, to better cover ground in the limited time.

This activity should also work towards establishing human influence on the risk of extreme events (e.g. temperatures, drought and rainfall events, etc.) through research, capacity building and the development of training workshops.

SAWS have a climate dataset which runs back to the late 1800’s and has been used to calculate the observed trends in temperature, rainfall, cloud cover and winds over the whole country by both SAWS employees and researchers in higher institutions of learning. This data will be provided to contribute towards the attribution of climate change studies including both the effects of human activities and natural phenomena such as ENSO.

**Anticipated outputs or results:**

* Attribution workshop delivered in South Africa with participation from early career scientists including from Highly Disadvantaged Institutions.
* Research leading to paper or papers submitted to peer-reviewed journals.
* Evidence of increased capacity in South Africa to carry out event attribution studies following workshop.

**SA/CLM2: Comparison of approaches for impact assessment and communication across timescales**

**Activity description:** Different methods for assessing weather and climate impacts are available including dynamic impact models and impact-based forecasting, but it is not currently clear which of these are most appropriate and offer most value across different forecast timescales (weather, sub-seasonal, seasonal and up to climate). This activity will aim to work towards seamless impact forecasting and assessment through reviewing the different approaches and their use at different time scales, generating shared understanding of approaches across timescales (including the nuances of terminology) and conducting impact methodology comparisons. There is also a need to assess the translation of forecast uncertainty through to impact assessment and risk communication with users across timescales. This activity will therefore also assess the most appropriate approaches for dealing with uncertainty propagation across timescales into risk assessments to help inform decision making. This activity will focus on sectors and case studies from other work on food security, water security, and human health and will feed into relevant climate service applications being developed in other activities. An initial area of work will involve assessment of different heatwave and reviewing their utility and forecast skill across timescales.

**Anticipated outputs or results:**

* Review the different approaches to assessing weather and climate impacts and their use at different time scales using case studies on food security, water security, and human health.
* Assess the translation of forecast uncertainty through to impact assessment and risk communication with users across timescales.
* Assessment of different heatwave metrics and review the utility and forecast skill across timescales for South Africa.

**SA/CLM3: Co-production and co-development of responsible science for services**

**Activity description:** This activity will work to support a review of the national evidence requirements of South Africa and a scoping study on the development of the tools, methods, and relationships that will be needed to support climate services delivery in South Africa.

The objective is to study the technical and ethical issues raised by data and information management strategies to foster weather and climate data integration from a social scientific viewpoint, identifying bottlenecks and opportunities arising when bringing these research communities and stakeholders together. This work will contribute to the advancement of interdisciplinary, engaged data-intensive research practices in theory and in practice.

To do this, interviews with project partners and affected communities should be carried out, to determine needs, expectations and concerns, and report back together with possible ways forward. Documentation of co-production and engagement efforts should be made to make the project a flagship for responsible research & preventing possible problems/misunderstandings concerning data linkage, sovereignty, use, and governance and should bring governance perspective to set-up and development of services.

**Anticipated outputs or results:**  A series of in-country interviews, visits and workshops to identify and engage with the science providers, end users and stakeholders; discuss and understand what their requirements are, specifically what services are needed and the required science and tools to deliver those services. The visits, workshops and engagement activities will also identify the constraints and the opportunities within the research communities, provincial and local governments and broader stakeholders. It is expected that these activities will provide recommendations and solutions to extant and emerging obstacles and challenges.

**Background on the Newton Fund WCSSP Programme**

The Newton Fund builds research and innovation partnerships with 17 active partner countries to support their economic development and social welfare, and to develop their research and innovation capacity for long-term sustainable growth. It has a total UK Government investment of £735 million up until 2021, with matched resources from the partner countries.

The Newton Fund is managed by the UK Department for Business, Energy and Industrial Strategy (BEIS), and delivered through 7 UK delivery partners, which includes UK Research and Innovation (comprising the 7 research councils and Innovate UK), the UK Academies, the British Council and the Met Office. For further information visit the Newton Fund website ([www.newtonfund.ac.uk](http://www.newtonfund.ac.uk/)) and follow via Twitter: [@NewtonFund](https://twitter.com/newtonfund?lang=en-gb)

The Met Office is administering the Newton Fund through under the wider Weather and Climate Science for Service Partnership Programme (WCSSP). The WCSSP Programme is developing a global network of projects that harness the scientific expertise needed to strengthen the resilience of vulnerable communities to weather and climate variability. This network accelerates our scientific understanding of the challenges presented by a changing and changeable climate and strengthens our shared ability to develop innovative services that reduce, or manage, societies’ exposure – creating a ‘global community around a shared challenge’.

****

For more information see the programme website ([www.metoffice.gov.uk/newton](https://www.metoffice.gov.uk/research/collaboration/newton)) and follow via Twitter: [@MetOfficeww](https://twitter.com/MetOfficeww)

**Eligibility**

The following criteria must be met by the organisation submitting a bid against Calls supported by the Newton Fund in order to be eligible to apply or be awarded funds against this Call:

• Demonstrate how the Bid contributes to the Newton Fund aim to develop science and innovation partnerships.

• Demonstrate ODA compliance.

• Must be a UK operating and registered organisation.

• Consortium bids are eligible; a lead partner must be nominated for payment and agreement purposes and must be a UK operating and registered organisation. Details of all consortium members must be provided.

• Funding can only be used to fund new activity for the costs incurred.

• An in-country economic and societal benefit must be demonstrated.

• The activity must last the full duration of the Grant Award Term specified.

• There must be a willingness to work with Authority and other organisations and individuals associated with the WCSSP Programme.

• Be willing to work with other funding authorities to ensure delivery costs represent the most efficient use of resources to deliver the overall Programme over the Grant Award Term.

• Bidders are not expected to have in-country Partners to respond to this call. The bilateral partnership nature of the Newton Fund means that effort by in-country researchers is supported by our existing in-country partners as standard.

**How to Apply:**

The above Expression of Interest is advertised on the Met Office ProContract e-Tendering portal called ProContract. To access and register your interest you will need to log onto the ProContract portal via this link: tenders.metoffice.gov.uk

You may need to search for the Call reference: DN453963

**You will need to register your company (if you have not already done so) and register your interest against the opportunity before you are able to access the tender documents.**

If you require guidance or ‘how to’ instructions – see the supplier manuals on the right-hand side of the supplier home page.

**Online Discussions between Bidders and the Met Office:**

There is a Discussions function on ProContract which shall be used to provide all further information regarding this opportunity including any changes to time scales, scope or clarifications. This function must be used by bidders to submit all clarification questions.