Met Office tendering on behalf of the Department for Science, Innovation and Technology (DSIT).

To register your interest, see notes at the end of this document. 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 operating and registered organisations only.

Call Reference:	**WCSSP Southeast Asia FY24/25 Grant Funding Opportunities (DN685026)**
Expression of Interest for:	**WCSSP Southeast Asia**
Grant Funds for the Period:	April 2024 – March 2025 *Funding is initially available to cover a 1-year period (April 2024 – March 2025). Subject to further funding allocations being received from DSIT, the Met Office will confirm extensions to the Grant Agreement on an annual basis to fund year 2 and year 3 activities.*

Expressions of Interest for the following lots:

Lot number	Title	Amount	FEC @100%	FEC @ 80%
SEA24_1.16	Understanding and evaluating convective processes over SE Asia	£600,000	£600,000	£480,000
SEA24_3.12	Understanding responses to Impact-based Forecasts and Warnings with a view to better quantifying the value of warnings	£175,000	£175,000	£140,000

Key Dates

Estimated Publish of Call: *(Start of bidding period).*	Week commencing 11th September 2023. *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:	8 weeks.
Estimated Award of Call:	January 2024.
Estimated Delivery Period:	1st April 2024 to 31st March 2025 *Funding is initially available to cover a 1-year period (April 2024 – March 2025). Subject to further funding allocations being received from DSIT, the Met Office will confirm extensions to the Grant Agreement on an annual basis to fund year 2 and year 3 activities.*

Background to the Met Office Weather and Climate Science for Services Programme (WCSSP):

The Met Office is a delivery partner on behalf of the UK government's Department for Science, Innovation and Technology (DSIT). We administer funding through our Weather and Climate Science for Service Partnership (WCSSP) programme.

The WCSSP programme has been developing a global network of partnerships that harness the weather and climate scientific expertise of UK and partner countries to strengthen the weather and climate resilience of vulnerable communities around the world since 2014.

Through the WCSSP programme, we are working collaboratively on projects that focus on the global challenges of weather and climate with partners in Brazil, China, India, South Africa and Southeast Asia. International collaboration is vital to addressing the issues presented by global weather and climate change.

Outputs from the WCSSP programme support the UN's Sustainable Development Goals (SDGs) with world-leading weather and climate science. Through working in partnership around the world, we are building international meteorological capacity, saving lives and strengthening resilience and response to crises. The WCSSP programme particularly supports our work towards goal 13 (climate action) and goal 17 (partnerships for the goals). For more information see the programme website Met Office WCSSP and follow via Twitter: @MetOfficeww

Background to WCSSP Southeast Asia:

At WCSSP Southeast Asia - Met Office, we are committed to providing accurate and timely weather forecasts, climate monitoring, and disaster risk reduction services to communities and businesses in Southeast Asia. Our mission is to help make informed decisions that protect lives, property, and the environment.

We believe in upholding the highest standards of professionalism, integrity, and service excellence. Our team of experts includes meteorologists, climatologists, and disaster risk reduction specialists who are dedicated to delivering innovative solutions and exceptional customer service. With years of experience and cutting-edge technology at our disposal, we are well-equipped to meet complex and evolving needs.

Our services are backed by a team of experts who have many years of experience in meteorology, climatology, and disaster risk reduction. We are proud to have helped numerous organisations across Southeast Asia make better decisions and mitigate risks. Success stories include work with shipping companies, local government and agriculture.

Our meteorologists analyse weather patterns and make accurate forecasts, while our climatologist's study long-term climate trends to help plan for the future. Our disaster risk reduction specialists work to minimize the impact of natural disasters on communities and businesses in Southeast Asia. Together, we form a cohesive team that is passionate about making a positive impact on the world.

For further information, please visit the project website - https://www.metoffice.gov.uk/research/approach/collaboration/newton/weather-and-climate-science-for-service-partnership-southeast-asia

Summary of Requirements:

Lot SEA24_1.16 Understanding and evaluating convective processes over SE Asia.

Convective processes are the main source of high impact weather over SE Asia. This activity would focus on improving our fundamental understanding of local convective processes and how large-scale weather systems (such as equatorial waves and cold surges) control the development of high-impact weather events in the partner countries. This will include furthering the fundamental understanding of tropical cyclones as one of the major meteorological hazards for the region, with a particularly important element being improved understanding of rapid intensification. It is anticipated that output from the Met Office SE Asia convective permitting modelling suite (along with the driving global model) will be used to aid understanding and identify model deficiencies. It is anticipated that at least one of these high-resolution modelling systems will be available as a coupled atmosphere-ocean system within the lifetime of the activity.

Examples of the type of work which could be undertaken include:
1) Research into the dynamics of mesoscale convective system development & evolution.
2) Explore how the 3D initiation and evolution of convection differ in models and observations, and what physical mechanisms are most important in explaining these differences?
3) Further the understanding of tropical synoptic features such as equatorial waves, the BSISO and Borneo vortex variability and how they, their interactions and their role in tropical cyclone development lead to high impact weather in the region. Evaluate the predictability associated with these features on different timescales.
4) Further research the mechanisms of rapid tropical cyclone development and evaluate these in the SE Asia modelling systems.
5) Evaluate weaker tropical cyclones in the SE Asia modelling systems and understand the reasons for their relatively poor predictability.
6) Conduct detailed process evaluation of severe convection, convective organisation and associated scale-interaction in atmosphere-only and coupled atmosphere-ocean regional convective permitting model.
7) Co-production of products/tools with SE Asia partners, driven by evolving priorities.

The activity should include consideration of the nature of ensemble spread for convective processes and investigations such as understanding the dependence of spread evolution and forecast error of severe convection on initial condition perturbation structure is encouraged. As a result, the activity may provide recommendations to improve ensemble design and/or post-processing. The primary focus is on NWP timescales, although work exploring predictability on the medium range and seasonal timescales is also welcome.

Key goals of the activity should be to collaborate with the SE Asia partners throughout the research period and pull-through research findings to aid the forecasting process. Hence where appropriate, co-production of appropriate forecast products and tools to inform in-country decision making where there is useful skill should be explored with in-country partners. Regular meeting should also be held to discuss research findings and involve the SE Asia partners in the research as much as possible.

The tender must include hosting of 4 visiting scientists from SE Asia for 4 weeks each (or equivalent, flexible to individual circumstances to ensure inclusivity) per year to share knowledge and undertake collaborative research.

This activity relates to the SE Asia partner priorities: "Improved fundamental understanding of synoptic regimes and small-scale convective processes leading to heavy rainfall events.

(BSISO, Borneo vortex and interactions between systems)", "Improved forecasts of tropical cyclones. (TC rapid intensification, model accuracy for weaker TC's)", "Extension of work to week 2 (with convective-scale downscaling), sub-seasonal to seasonal timescales" and "Scientist visits to UK academic institutes to undertake collaborative research".

We will be inviting bidders to propose grant activities to cover a 3-year (36 month) period, funding will initially be available for a 1-year period (April 2024 – March 2025). Subject to further funding allocations being received from DSIT, the Met Office will confirm extensions to the Grant Agreement on an annual basis to fund year 2 and year 3 activities.

Lot SEA24 3.12 Understanding responses to Impact-based Forecasts and Warnings with a view to better quantifying the value of warnings.

Impact-based Forecasts and Warnings (IbFW), aim to communicate the likelihood of impacts associated with upcoming weather and are increasingly being issued by hydrometeorological agencies globally. The WMO advocates for the implementation of IbFW approaches by NMHS's and several studies have highlighted benefits of implementing these approaches operationally (Potter et al., 2021; Weyrich et al., 2018). However, the quantitative demonstration of the value of IbFW over traditional forecasts remains a challenge. Central to demonstrating this value is a need to better understand the response actions taken following receipt of IbFWs. Here we define response as the purposeful actions intended to produce a change in the severity of weather-related impacts upon receipt of a forecast or warning.

To address this challenge, we seek proposals that advance our knowledge and understanding in three key areas:

1) What are responses taken upon receipt of IbFWs, and how do these actions differ between stakeholders, and for different types of IbFWs given?
2) Can we better document response actions taken, what are the requirements of response data, who holds response data, and how can we routinely capture such data?
3) How can we utilise response data to develop methodologies to quantify avoided losses and demonstrate the value of IbFWs? What metrics/measures are appropriate for the assessment of value based on response data?

To advance our understanding of these important knowledge gaps will likely require an interdisciplinary approach that draws upon research and methodologies (e.g. interviews; focus groups; surveys; expert elicitation; experimental psychology; data science) across a range of sciences (e.g. experimental psychology; computer science), but with Social Sciences being particularly valuable.

References:
Potter, S., Harrison, S., & Kreft, P. (2021). The Benefits and Challenges of Implementing Impact-Based Severe Weather Warning Systems: Perspectives of Weather, Flood, and Emergency Management Personnel. Weather, Climate, and Society, 13(2), 303–314. https://doi.org/10.1175/WCAS-D-20-0110.1
Weyrich, P., Scolobig, A., Bresch, D. N., & Patt, A. (2018). Effects of impact-based warnings and behavioural recommendations for extreme weather events. Weather, Climate, and Society, 10(4), 781–796. https://doi.org/10.1175/WCAS-D-18-0038.1

This activity relates to the SE Asia partner priority: "Further develop impact-based forecasting systems".

We will be inviting bidders to propose grant activities to cover a 3-year (36 month) period, funding will initially be available for a 1-year period (April 2024 – March 2025). Subject to

further funding allocations being received from DSIT, the Met Office will confirm extensions to the Grant Agreement on an annual basis to fund year 2 and year 3 activities.

Eligibility:

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

- The Bidder must be an organisation operating and registered in the United Kingdom.
- The Bid must demonstrate how it contributes to the Met Office WSCCP Grant Fund's aim to develop science and innovation partnerships.
- The Bid must demonstrate ODA compliance.
- The Bid does not cover activities in relation to which the Bidder has received, or will receive, external funding.
- There must be an In Country economic and societal benefit to which must be demonstrated.
- The proposed Grant Activities in a Bid will last the full duration of the Grant Period.
- The Bidder must be willing and able to work with Met Office and other organisations and individuals associated with the WCSSP Programme, including by attending meetings and other collaborative events.
- Multiple Bids can be submitted from a single organisation where they are led by different academic departments.
- Bidders are not expected to have pre-existing In Country Partners to respond to this call. The bilateral partnership nature of WCSSP means that effort by in-country researchers is supported by our existing In Country partners as standard. In country partners are currently:
    - The Philippine Atmospheric, Geophysical and Astronomical Services Administration
    - The National Disaster Management Agency in Malaysia
    - Badan Meteorologi Klimatologi dan Geofisika Indonesia
    - The Vietnam Meteorological and Hydrological Administration

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 DN685026.

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.