

Weather and Climate Science for Service Partnership Programme

Strengthening the resilience of vulnerable communities to weather and climate variability

Exposure to extreme weather and climate events threatens the sustainability of economic development and social welfare across the globe, and the securities on which we rely for our health and well-being. In line with the Global Framework for Climate Services, the UN-wide initiative to enable better management of climate risks, we work in partnership to develop targeted climate services.

With the support of the Newton Fund, the Weather and Climate Science for Service Partnership (WCSSP) programme is developing a global network of projects and partnerships that harness the scientific expertise needed to strengthen the resilience of vulnerable communities to weather and climate variability. WCSSP projects aim to develop strong international partnerships, connecting the best scientific expertise.



Collaborative weather and climate services for South Africa

The Weather and Climate Science for Service Partnership in South Africa (WCSSP South Africa) is a collaboration between the Met Office, the South African Weather Service (SAWS) and other key UK institutes.

WCSSP South Africa strengthens links between the UK and South Africa, drawing on UK capability and expertise, and creating sustainable relationships for long-term collaboration. It aims to protect life and property through improved weather and climate services based on user needs. It is improving high-resolution weather forecasting capabilities and enhancing the capability within SAWS to deliver severe weather warnings, improve forecast service delivery and to facilitate development of services to specific sectors that support economic development and social welfare. The project is also supporting disaster risk reduction (DRR) through impact-based weather forecasting.



Addressing regional climate vulnerability in China

The Climate Science for Service Partnership China (CSSP China) has been formed by the China Meteorological Administration, Institute of Atmospheric Physics at the Chinese Academy of Sciences and the Met Office, and other key UK and Chinese institutes.

China experiences extreme conditions such as heavy rainfall, flooding, tropical cyclones, heatwaves and drought, potentially affecting food and water security and leading to increased impact of natural disasters. The partnership is developing an understanding of the key needs for climate service development in China and the relevant underpinning science required. It has so far focused on four key sectors: energy, urban environments, agriculture/food security, and water resources. As the underpinning science develops the partnership is increasing the capacity to translate science into services that could impact decisions affecting people's welfare and livelihoods.





Improving climate modelling in Brazil

The Climate Science for Service Partnership Brazil (CSSP Brazil) supports the development of capability to underpin services to inform decision makers in climate mitigation and adaptation strategy. Through CSSP Brazil we are building strong, sustainable partnerships with Brazil's National Institute for Space Research, National Institute for Amazon Research and the National Centre for Monitoring and Early Warning of Natural Disasters, as well as other key UK and Brazilian scientific institutes.

CSSP Brazil focuses on three main research areas: improved carbon cycle modelling to inform mitigation policy; climate model development; and climate impacts and disaster risk reduction. The partnership aims to provide robust science background for mitigation policy through improved quantification of the global carbon cycle, including natural carbon sinks which are important for 'overshoot and recovery' climate scenarios. This can inform the Brazilian Government Working Group on REDD+ and preparation of the Third National Communication on Greenhouse Gas Emissions to the United Nations Framework Convention on Climate Change, on the land use, land-use change and forestry (LULUCF) sector.



Understanding the South Asian monsoon to develop improved forecast products

We are in the process of establishing a Weather and Climate Science for Service Partnership in India (WCSSP India). WCSSP India hopes to form strong, sustainable partnerships between UK and India scientists to enhance research and development programmes to better understand monsoons, helping towards delivering improved risk-based weather and climate products.

SUSTAINABLE DEVELOPMENT GOALS

Supporting the United Nations Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) represent a global commitment to transform the world to a sustainable and resilient path to development, focussing on areas of critical importance for humanity and the planet. With the support of the Newton Fund, the Weather and Climate Science for Service Partnership programme (WCSSP) contributes to the SDGs.





Advancing scientific understanding in Southeast Asia

The Weather and Climate Science for Science Partnership in Southeast Asia (WCSSP Southeast Asia) is a regional project involving three partner countries: Indonesia, Malaysia and the Philippines. WCSSP Southeast Asia brings together the Met Office with the Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG), the National Disaster Management Agency (NaDMA), and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA).

WCSSP Southeast Asia is jointly developing and improving underpinning capability in global and regional forecasting systems, and advancing the understanding of high-impact weather events in order to provide better advice of such events and mitigate the socio-economic impact.



CASE STUDY



Improving regional accuracy of short-range weather forecasts

As part of the Weather and Climate Science for Service Partnership (WCSSP) South Africa supported by the Newton Fund, the South African Weather Service is working to upgrade and improve the quality of its weather forecasting activities and has implemented high resolution numerical weather prediction (NWP) models. This has enabled more detailed and regionally accurate short-range weather forecasts to be developed and has led to further NWP model improvements in both South Africa and the UK. This development has led to improvements in the quality and accuracy of weather guidance provided to government, businesses and communities within South Africa.

Promoting economic development and social welfare

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) and follow on Twitter: [@NewtonFund](https://twitter.com/NewtonFund)

For further information on the WCSSP programme visit our website (www.metoffice.gov.uk/newton) and follow us on Twitter [@metofficeww](https://twitter.com/metofficeww)