



The Met Office incorporate aspects of the Monitoring, Evaluation and Learning (MEL) framework within existing programmes and projects to help improve performance through better management of outputs, outcomes and impact.



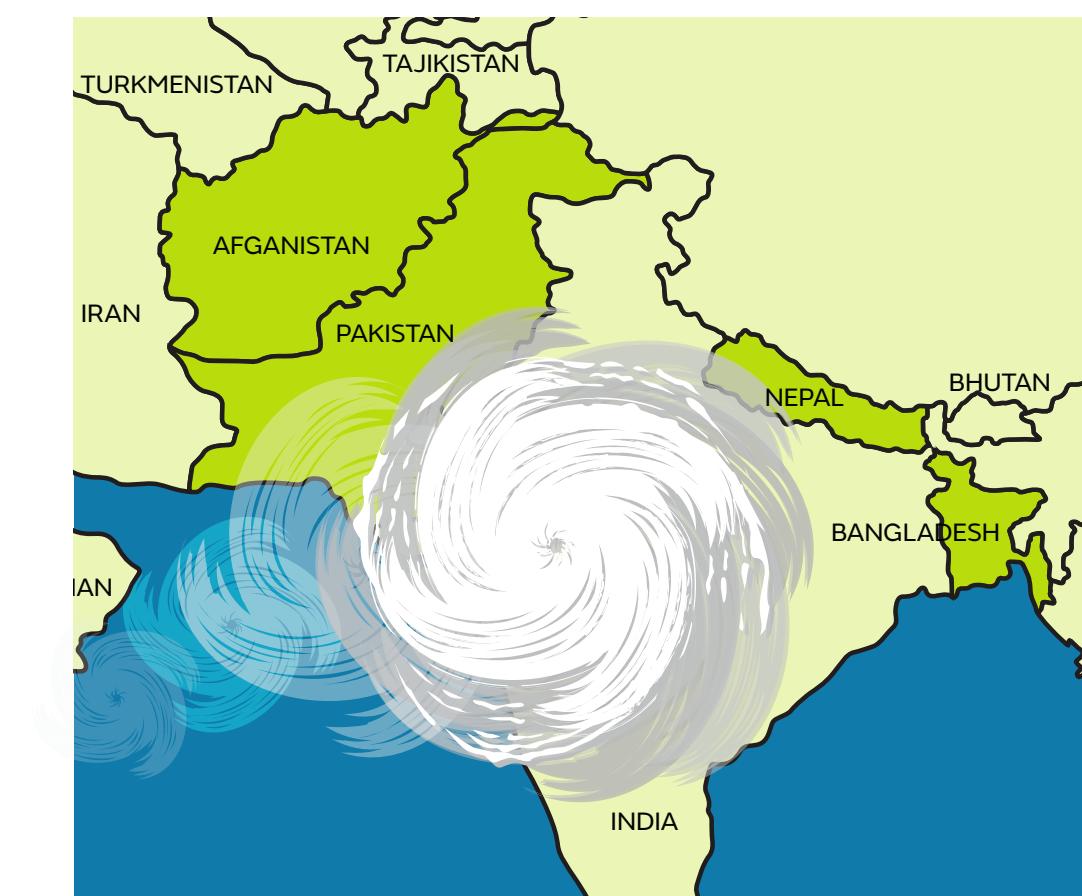
UM Partnership: The Unified Model (UM) is a suite of earth system modelling software used for weather and climate modelling applications. The UM Partnership enables scientific and technical collaboration on a shared modelling system, across a range of modelling and science issues relevant for weather and climate prediction. Working together reduces the cost and increases efficiency of the development through shared scientific and technical knowledge and development. It leverages science and technical effort beyond that possible from a single organisation. The UM Partnership aims to develop the UM in a directed and structured way. Coordinated joint programmes provide the direction of the work undertaken by the UM Partnership. Additional strategic investment projects are used to concentrate resources on joint interests. Core and Associate Partners use the UM for operational weather forecasts and climate modelling while a range of Research Partners contribute in various ways to the quality of the UM by using, testing and developing the model for their research activities. The UM Partnership is facilitated through community and relationship management, planning of science and technology, technical infrastructure development, model support and training activities. An annual model workshop, scientist exchanges and partner site visits are used to promote the shared work and to build a globally distributed research and development team.



Met Office High Performance Computing (HPC) Programme: Investment in Met Office supercomputing enables improvements in prediction capabilities, which mean that users of prediction services can realise socio-economic benefits to the UK economy. Examples include better forecasting of hazardous conditions at airports reducing the costs of disruption, better rainfall forecasts reducing flood damage and new climate impacts research informing long-term planning. The Programme annually evaluates the SEBs realised through improved prediction capability and service provision to users. Objective statistics and qualitative 'customer stories' are used to demonstrate the reality of the conceptual value chain. Lessons learned from using the quantitative SEB models developed for the 2015 business case have been fed back into those being developed for the 2020+ business case.



WCSSP Programme: 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 scientific expertise between the partnering countries. Continuous assessment and improvement is undertaken on the quality, relevance, and strategic alignment of scientific research undertaken by UK partners within the projects. Each project has a Science Review Panel (SRP), consisting of relevant scientific experts who meet annually to review the latest scientific research and work plans. The SRP then provide recommendations for areas of focus for project activities. The overarching aim of WCSSP projects is to develop targeted climate service prototypes in partnership with in-country partners to inform the management and understanding of weather and climate risks. One such prototype for the CSSP China project is the seasonal forecasts for the Yangtze River Basin. This service has gathered user feedback which is informing the underpinning science to further improve the service. For example, as a result the service has been adapted into three separate seasonal forecasts for different sections of the Yangtze River Basin.



ARRCC: The Met Office is working in partnership with the World Bank and the UK's Department for International Development (DFID) on the UK aid-funded Asia Regional Resilience to a Changing Climate (ARRCC) programme. The four-year programme, which started in 2018, aims to strengthen weather forecasting systems across Asia. The programme will deliver new technologies and innovative approaches to help vulnerable communities use weather warnings and forecasts to better prepare for climate-related shocks. Asia is highly vulnerable to natural disasters and this vulnerability is expected to increase. The ARRCC programme will target the most vulnerable countries in the region, primarily Bangladesh, Pakistan, Nepal and Afghanistan. The approach adopted by the project is for the co-production process to be at the heart of the Method of Procedure (MOP) ensuring that the services piloted via the various Work Packages are user driven. The project also has a dedicated work package on evaluating the socio-economic benefits of ARRCC weather and climate services in the South Asia Region. This ensures that the value that can be generated through ARRCC is effectively pursued and implemented through a robust knowledge base to inform the wider ARRCC Programme and work package development.



UK Climate Projections (UKCP18): Provides the most up-to-date assessment of how the climate of the UK may change over the 21st century and is part of the Met Office Hadley Centre Climate Programme. UKCP18 delivers a major upgrade to UK Climate Projections 2009. Lessons learnt and feedback from scientific experts, stakeholders and users have been incorporated throughout the project design.

The UKCP18 Peer Review Panel (PRP) is an independent panel of international climate experts, chaired by Sir Brian Hoskins (Grantham Institute, Imperial & University of Reading), which reports directly to the UKCP18 Governance Board. It has given advice on UKCP18 project scientific methodology and deliverables, providing a strong oversight of the work done to produce the new climate projections out to 2100. This included the PRP providing a steer on a range of science questions to ensure the quality of the final products.

Two UKCP18 user groups were also established to capture the requirements of government and non-government users. The Government User Group has members from across government departments and the Non-Government User Group has representatives from academia, business, consultancies and Non-Governmental Organisations (NGOs) representing sectors including agriculture, built environment, business and services, energy, health, infrastructure, marine, natural environment and water.

Lessons have been learned from the delivery of UKCP18 and these are already influencing how the release of the next phase is being planned and delivered.

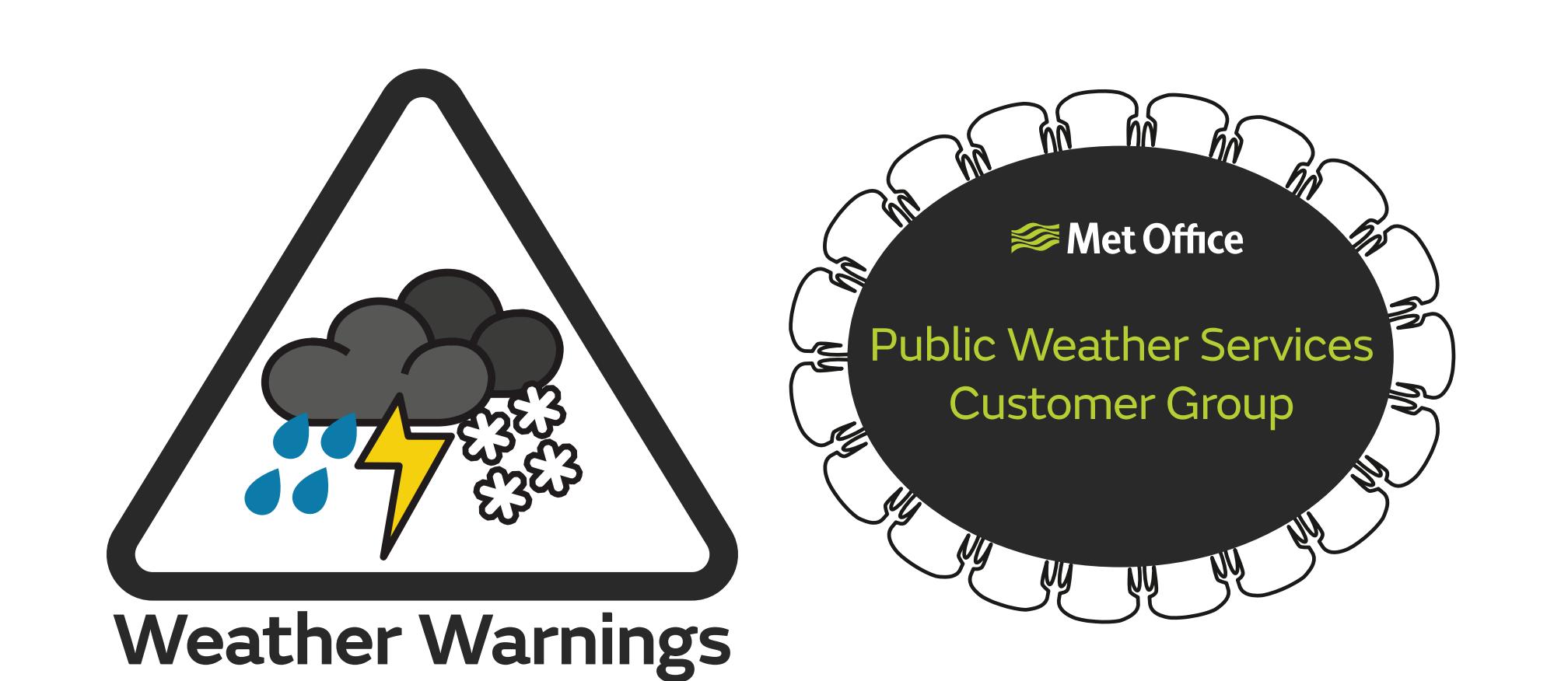


GCRF AFRICAP: GCRF AFRICAP is a major programme to make agriculture and food production in Sub-Saharan Africa more productive, sustainable and resilient to climate change. Working with local organisations and governments in Malawi, South Africa, Tanzania and Zambia, we are creating an evidence base to underpin new country-specific policies in agriculture and food production. The project aim is to support climate-smart, sustainable agricultural development, helping countries to reduce poverty and hunger whilst addressing the broader aims of the Sustainable Development Goals and key targets of the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods in Africa.

The programme has developed a results framework and logframe as well as programme-wide and MEL-specific workplans with monthly MEL reporting to closely track the progress of the project throughout its lifetime. Impact will be captured in annual reports focusing on the outcome indicators. It is also in the process of finalizing country level theories of change and identifying ways to measure impact once the programme has finished. The undertaking of household surveys in the focal countries is a key component of baselining the programme to understand the social, economic and environmental factors that make rural farming households vulnerable. Survey results will provide a basis for strategic interventions as well as recommending a potential suite of fiscal and economic measures that can be deployed to improve the resilience of communities to climate change.



DFID WISER: Weather and Climate Information Services for Africa (WISER) is a Department for International Development (DFID) funded programme that seeks to enhance the resilience of African people and economic development to weather and climate related shocks. The Met Office fund manage the WISER-East Africa Programme (WISER-EA) which incorporates a comprehensive approach to MEL in line with DFID and the Organisation for Economic Co-operation and Development – Development Assistance Committee (OECD-DAC) MEL frameworks. In particular, the WISER-EA Programme and projects incorporate a MEL framework to measure the socio-economic benefits (SEB) and value for money (VfM) of improved weather and climate services delivered by the projects. The 4 x E's approach (Economy, Efficiency, Effectiveness and Equity) has been applied to develop key performance indicators (KPI's) to help demonstrate the impact of WISER, share how to conduct monitoring and evaluation and how to maximise SEB and VfM within weather and climate programmes. WISER-EA Programme and project MEL is well established and embedded across all twelve WISER-EA Phase 2 projects across the Greater Horn of Africa and the Sahel, ultimately contributing towards the UK's International Climate Fund Resilience KPI.



Public Weather Service: The Met Office's core role is its services to the Public in the form of the UK's Public Weather Service (PWS). The PWS Customer Group is an independent group who oversee the PWS from the perspective of its users. It is responsible for setting the requirement and specifying the outputs, supporting research and development to meet future requirements, meeting international commitments on behalf of UK Government, providing underpinning data for stakeholders and authorising payment for the PWS from the Department for Business, Energy and Industrial Strategy (BEIS).