University of Leeds, ANACIM and Météo-France press release

For immediate release 06 February 2017 08:30 GMT (03:30 EST)

Improving the accuracy of essential African weather forecasts

A comprehensive new handbook about weather forecasting in West Africa could help safeguard lives and resources in the region.

Meteorology of Tropical West Africa: The Forecasters' Handbook was coordinated by the University of Leeds in collaboration with international researchers and meteorological agencies to help the region's weather forecasters. It results from the African Monsoon Multidisciplinary Analysis (AMMA), the biggest research programme into African weather and climate ever conducted.

The handbook includes theory, weather forecasting methods, practical diagrams, and case studies of West African weather systems. It follows 15 years of collaborative international research.

Handbook editor and coordinator, Professor Douglas Parker a meteorologist at Leeds' School of Earth and Environment said: "Accurate weather forecasts are essential for early warning systems that can protect lives, property, and water and food resources. The handbook is the first time any global region has produced a definitive document for forecasting.

"Not only is this handbook a way for new research to be brought rapidly into practice it represents an international effort to disseminate important information to a region that has been neglected in the past."

Handbook co-editor Dr Mariane Diop-Kane, Director of Meteorology at the Agence Nationale de L'Aviation Civile et de la Meteorologie (ANACIM) in Senegal added: "West Africa has a large population dependent on rain-fed agriculture and rural transport infrastructure, both of which are vulnerable to weather systems.

"Abrupt changes in weather can have devastating consequences to populations, their health and economies. The use of the handbook as a training tool will provide a new resource for forecasters to help safeguard this region."

Many of the new forecasting methods described in the handbook were developed as part of the training and coordination of fifteen West African forecasters by Jean-Philippe Lafore from Météo France. These West African forecasters provided support during a four month AMMA field campaign in 2006 by producing bespoke weather forecasts used in the deployment of research instruments such as weather balloons and research aircraft.

West African forecasters further developed these new forecasting methods at the University of Leeds in 2012 during a three month stay. The forecasters interacted with researchers from the UK, France and Germany, to combine the latest theoretical data with the experience weather forecasters have gained from professional practice.

As part of the MISVA project, a website developed by Météo France in collaboration with ANACIM and with support from Toulouse University (UPS) provided access to weather models, satellite images and field observations to test the new forecasting methods. Météo-France leads the chapter about thunderstorm processes as well as the chapters presenting the new weather analysis and forecasting methods.

Professor Parker is the lead author the chapter about local weather, which covers the forecasting of weather conditions relating to a particular locality, including coastal weather, local storms, severe local winds, and extreme temperatures.

The Met Office in the UK has actively supported the project, contributing to the scientific workshops and leading two of the book's 11 chapters. The Met Office is providing funding to purchase copies of the book and ensure the distribution of *Meteorology of Tropical West Africa: The Forecasters' Handbook* to West African forecasters and training centres. The book will be used by the Met Office as a resource for the training of forecasters in African and tropical weather prediction.

Notes for editors

Images
Download from: https://goo.gl/35sudZ
Images credit: François Guichard, Météo-France

Case studies of West African weather systems included in the handbook were developed by African and Météo France forecasters in collaboration with international researchers from the United Kingdom, Europe and North America.

The handbook is the result of international collaboration between the African Monsoon Multidisciplinary Analysis (AMMA) research programme, the African Centre of Meteorological Applications for Development (ACMAD) and the World Meteorological Organization (WMO) World Weather Research Programme (WWRP). Chapter authors include researchers, modellers and weather forecasters from Africa, Europe and North America.

The handbook launch, on 8 February, hosted by ANACIM at the Regional School of Air Navigation and Management (ERNAM) in Dakar, Senegal, will include presentations on the handbook and its importance for West African environmental prediction.

Meteorology of Tropical West Africa: The Forecasters' Handbook English language edition *w*ill be published by Wiley Press.

The handbook's French translation is being provided by Météo-France and will be published by EDP Sciences. French organizations are currently being approached to provide funding for the handbook's purchase and distribution in French speaking West African countries.

Financial and other support for this book has been gratefully received from ANACIM, ICTP, Météo-France/CNRM, Met Office, NERC (NE/G018499/1), the University of Leeds, RIPIECSA, THORPEX, the Walker Institute, the WMO Training Activities Division and the WMO Development and Regional Activities Department, Offices for Africa and Least Developed Countries, and the European Community's Sixth Framework Research Programme. Doug Parker holds a Royal Society Wolfson Research Merit Award.

For interviews, please contact Anna Martinez, University of Leeds Media Relations Officer, on +44 (0)113 343 4196 or email a.martinez@leeds.ac.uk

University of Leeds

The University of Leeds is one of the largest higher education institutions in the UK, with more than 31,000 students from 147 different countries, and a member of the Russell Group research-intensive universities.

We are a top 10 university for research and impact power in the UK, according to the 2014 Research Excellence Framework, and positioned as one of the top 100 best universities in the world in the 2015 QS World University Rankings. We are The Times and The Sunday Times University of the Year 2017. www.leeds.ac.uk

National Civil Aviation and Meteorology Agency (ANACIM)

ANACIM long term strategy on meteorology includes the improvement of forecasting at all time scale and the development of products and services to users in line with WMO

programmes such as Global Framework for Climate Services and Disaster Rick Reduction. Our priority research areas are nowcasting, high impacts weather systems, subseasonal to seasonal forecasting, and evaluation of forecast.

Météo-France

Météo-France is the French national weather and climate service. Its primary mission is to contribute to the protection of life, property and infrastructure, by providing advance warning of severe weather through the meteorological vigilance map indicating the hazards, their consequences and precautions to protect themselves. It delivers forecasts to various customers from the Government, to the general public, armed forces, businesses, and other organizations. Météo-France plays a significant role within the main bodies of international meteorological cooperation: the world meteorological Organization (WMO), the European Center for the medium-term weather forecasts (CEPMMT), Eumetsat, the operator of the European weather satellites, and Eumetnet. www.meteofrance.com @meteofrance