



## Asia Regional Resilience to a Changing Climate (ARRCC) Met Office Partnership newsletter

December 2020



### Welcome

Welcome to the latest edition of our ARRCC Met Office Partnership newsletter. This edition covers the period from October to December 2020, highlighting some of our key activities and events during this time. We hope you will find the articles informative.

If you have been forwarded this email and would like to receive ARRCC newsletters direct in future, please [email us](#) with your details and consent.

The Met Office ARRCC team

**Impact-based forecasting (IBF) -  
work package 1**



### Agreement of IBF pilot in Nepal

In October and December work package 1 held stakeholder meetings with the Department of Hydrology and Meteorology (DHM) Nepal and National Disaster Risk Reduction Management Authority (NDRRMA) Nepal to seek their agreement on the focus hazard, impact and geographical location of the IBF pilot to be taken forward from early 2021.

During the 2020 monsoon, Nepal experienced many landslides which unfortunately resulted in 300 people losing their lives with a further 100 people reported missing. The Nepalese government has therefore identified landslides as a key hazard. Agreement was reached that the IBF pilot should focus on rainfall as the hazard and landslide as the impact. The pilot will focus on municipalities within the Sindhupalchok and Baglung Districts and the Karnali river basin, which encompass both earthquake and non-earthquake impacted areas.

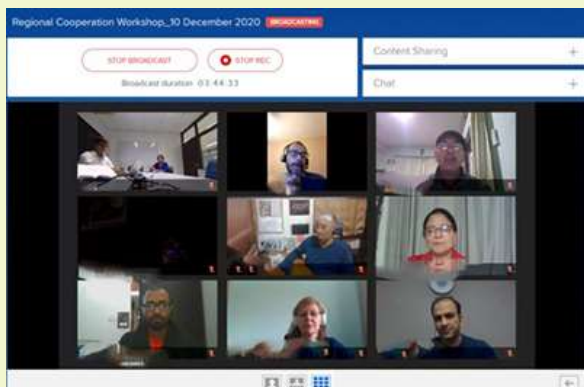
### Regional workshop on enhancing forecasting, monitoring and preparedness for floods and droughts in South Asia

Recurrent damage and loss of lives due to floods and droughts set-back progress and sustainable development in south Asian countries. Despite significant improvements in observational networks, monitoring and climate forecasts, substantial losses have occurred even in recent years. It is therefore necessary to continually evaluate, learn from experience and fill the gaps to enhance preparedness to manage flood and drought related hazards. The UN ESCAP (United Nations Economic and Social Commission for Asia and the Pacific) and RIMES (Regional Integrated Multi-hazard Early-warning System for Africa and Asia) have been collaborating with partner institutions to establish such an appraisal mechanism since 2015. Under the ARRCC programme, in collaboration with the Met Office, “An expert dialogue on floods and droughts in the region” was organised in August 2019. The meeting recognised various challenges and the need for continuing the policy and scientific technical discussions at regional level.



This year, the “Regional cooperation workshop for enhancing forecasting, monitoring and preparedness for Floods and Droughts in South Asia” was held online from 8-10 December 2020. It was attended by around 35

participants from National Meteorological and Hydrological Services (NMHSs) & National Disaster Management Agencies from across South Asia, regional organisations and collaborating institutions. The discussions took stock of major flood and drought events in South Asia and shared experiences on common issues where regional efforts could benefit countries. Floods affected many parts of India, Nepal, Pakistan, Afghanistan and Sri Lanka. In 2019 and 2020 drought also effected large parts of Sri Lanka affecting almost 1 million people. In Afghanistan and Pakistan droughts impacted over 5 million people during 2018-2019.



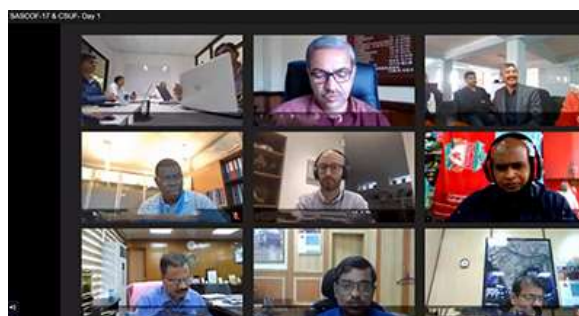
Workshop presentations featured improved systems being developed at both national and global levels. Participants from national institutions also brought-up challenges faced and their operational needs. The workshop also featured a panel discussion that considered key issues brought-up in country presentations during the first two days

Data sharing, capacity development of infrastructure and human resources, access to high resolution forecast and monitoring data, and innovating dissemination channels to users and building awareness at different levels were highlighted as key requirements. Inter-operable databases and unified platform to access all relevant data with IT trainings and research support were also noted. End-user communication and engagement was recognised as pervasive action to embed within modernisation initiatives of NMHSs. The aforementioned outputs of the workshop and user requirements gathered will be used to develop the Learning Platform including an outline timeline.

## **Strengthening Climate Information Partnerships South Asia (SCIPSA) - work package 2**

### **Regional engagement**

On 23/24 & 28 September 2020 a consensus statement on the forecast for October to December 2020 was co-produced for rainfall at the virtual South Asian Climate Outlook Forum (SASCOF)-17 event. The pilot SASCOF product was presented and a timeline for its roll out was presented jointly by Becks Parfitt from the Met Office and Dr Pai from Regional Climate Centre Pune.



*Image: Participants engaging at SASCOF-17*

The final session of the SASCOF included a short workshop on longer term climate change, in order to explore potential information needs on climate timescales. This is linked to an activity in CARISSA (work package 3), focused on the establishment of a Regional Climate Forum for South Asia.

On 23 November 2020 a consensus statement on the forecast for the December 2020 to February 2021 season rainfall and temperature was co-produced at the virtual SASCOF-18 event. Dr Rupa Kumar Kolli from

the International CLIVAR Monsoon Project Office congratulated SCIPSA on how it has acted to enhance and level the standard of the national forecast presentations.

### **National engagement**

On 3 December 2020 a first exploratory meeting was hosted between the Afghanistan Meteorological Department (AMD), the Met Office and RIMES to begin the process of developing the Afghanistan National Climate Outlook Forum (NCOF). The next steps are to develop AMD's seasonal forecasting capacity in February 2021 and host a first NCOF stakeholder workshop in May 2021.

On 7 December 2020 the Red Cross Red Crescent Climate Centre (RCCC), in collaboration with the Bangladesh Meteorological Department (BMD) and the Met Office, hosted a co-exploration workshop on seasonal forecasts for preparedness and early action for the humanitarian and disaster risk management sector in Bangladesh. Participants included representatives from the German Red Cross, the World Food Programme, and various government ministries in Bangladesh. This event initiated a useful dialogue on the opportunities and limitations for applying seasonal forecasts to decision-making in these key sectors, and will be followed up with a user survey to gather further requirements prior to developing next steps.

## **Climate Analysis for Risk Information & Services in South Asia (CARISSA) - work package 3**

### **Training on regional climate change projections: Climate change analysis using CORDEX regional climate models over South Asia**



Responding to the needs of the region, the International Centre for Integrated Mountain Development (ICIMOD), the Met Office, the World Climate Research Programme (WCRP), the Coordinated Regional Climate Downscaling Experiment (CORDEX) office and the Swedish Meteorological and Hydrological Institute organised a six-day training session on regional climate change projections in October 2020.

Representatives from institutions involved in the production of national or regional climate projections attended the training including those from National Meteorological and Hydrological Service providers from four ARRC focal countries (Afghanistan, Bangladesh, Nepal, and Pakistan), regional centres and research organisations. A total of 25 participants (8 of them female) participated in the training – 4 from Afghanistan, 5 from Bangladesh, 9 from Nepal and 7 from Pakistan.

The six-day virtual training focused on imparting knowledge and skills for analysing regional climate change projections using CORDEX regional climate models over South Asia. It covered aspects of climate change science and projection, and how to access and analyse CORDEX datasets. Through dedicated hands-on exercises, representatives from ICIMOD, the Met Office and the Indian Institute of Tropical Meteorology (IITM) – Pune guided participants in using different open source tools to analyse and visualise climate change projections at different time scales for user-specified locations. During the practical demonstration and hands-on exercises on tools and approaches, the participants used the R-codes to analyse and visualise the historical and future scenario using the CORDEX datasets from their area of interest.

The training is part of ARRCC's institutional capacity building approach, which aims to develop and deliver training to enhance the institutional capacities of national climate service institutions in ARRCC focal countries to strengthen their capacity to analyse, assess, use, and communicate future climate projections. The trainers and participants charted a roadmap to support further institutional capacity building on climate projections and services and developed an engagement plan identifying clear roles and responsibilities as part of the institutional capacity building plan adopted under ARRCC.

## Training on sea-level science and projections in Bangladesh

A virtual training workshop on sea-level science and projections in Bangladesh was held from 23 to 25 November 2020. The workshop was co-facilitated with the Bangladesh University for Engineering and Technology (BUET) as part of coastal climate services activity under the CARISSA project. 21 participants attended with diverse backgrounds ranging from coastal adaptation policy, coastal engineering and the Bangladesh navy, as well as scientists and hydrologists.



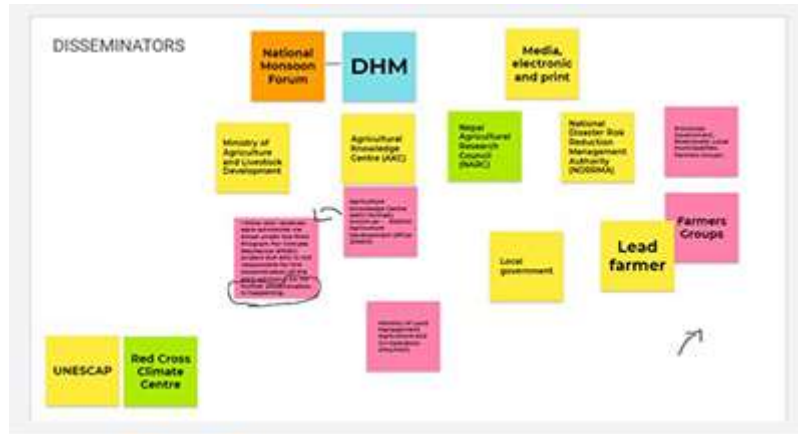
Teaching sessions were provided on regional sea-level change, global sea-level rise, the use of sea-level projections and sea-level observations, led by Ben Harrison, Jenny Weeks, Dr Matt Palmer, Dr Tom Howard (all from the Met Office) and Prof Saiful Islam (BUET). Prior to the training, 32% of participants rated their knowledge of relevant topics as good or above, increasing to 85% in the post-workshop evaluation survey. Interactive and cross-disciplinary discussions were also generated throughout the course on topics such as the challenges and opportunities for adaptation measures in Bangladesh, the Bangladesh Delta Plan 2100, and on research projects for sea level rise in Bangladesh.

## VALUE - work package 4

### Participatory brainstorming workshop

Last month (November 2020) WP4-VALUE held an online participatory brainstorming workshop with ARRCC Met Office Partnership (MOP) colleagues from the University of Leeds, RIMES and the Met Office.

Participants used Jamboard to begin to map out how seasonal information produced at the South Asian Climate Outlook Forum (SASCOF) might flow to end users at various levels, including farmers in Nepal. Participants were able to collaborate in real time and watch as colleagues added and arranged sticky notes on a virtual whiteboard. The session was a great example of how the ARRCC MOP has adapted to remote working. The map produced in the session will be used to facilitate the next step of this work where a more in-depth and detailed map of the seasonal climate information network will be produced using online surveys and social network analysis methodology.



### The ARRCC programme

The UK aid-funded ARRCC programme is being led by the Met Office and the World Bank and aims to strengthen weather forecasting systems across Asia. The programme is delivering 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 Met Office Partnership (MOP) programme is targeting the most vulnerable countries in the region, primarily Bangladesh, Pakistan, Nepal and Afghanistan, and will support:

1. enhancing regional collaboration and capability for provision of weather and climate services;
2. development of regional and sub-regional forecasting and early warning systems;
3. improving capacity in focus countries to develop and disseminate impact based forecasting (across multiple timescales) to climate sensitive sectors and vulnerable communities;
4. development of new technologies to deliver climate information to vulnerable groups; and
5. the mobilisation of additional resources for building climate and environmental resilience.

The Met Office is working closely with a number of key partner organisations in the region to support delivery of ARRCC, including:

- UN bodies such as the World Meteorological Organization (WMO), the World Food Programme (WFP) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP);
- existing regionally mandated organisations involved in development of weather and climate services, including the International Centre for Integrated Mountain Development (ICIMOD) and Regional Integrated Multi-Hazard Early Warning Systems (RIMES) and research organisations such as the International Maize and Wheat Improvement Center (CIMMYT);
- NGOs such as the Red Cross Climate Centre (RCCC); and
- National Meteorological and Hydrological Services (NMHS) and related agencies with responsibility for disaster risk management.

Find out more on the [ARRCC Met Office Partnership webpages](#).

## Meet the Met Office ARRCC team



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