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Highlights of SAHF Numerical Weather Prediction Working Paper

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Foreign, Commonwealth & Development Office

Overview- Existing situation of NWP in SAHF region

- Except Afghanistan, all SAHF NHMSs are running fairly high resolution and deterministic WRF. In addition, lot of products from different centres.
- Ease of access, installation, training and documentation support have contributed to popular adoption of WRF as preferred work-horse for operational NWP in the region
- Driven by the requirement for providing forecasts at relevant sub-national scales, most MNHSs run a single cycle of WRF at ~9 km resolution to produce deterministic NWP products without any local data assimilation
- Limited evaluation and forecast verifications

Overview- Existing situation of NWP in SAHF region contd.

- Except IMD and PMD, others do not have dedicated NWP teams represented by at least five or more well training operational NWP personnel. Adequate induction level and mid-level training is lacking in most countries, as a result capacities to interpret and use a range of global and regional NWP products is very limited.
- Use of NWP for operational forecast generation is generally limited to rainfall and temperature graphics.
- No SOPs or standardized guidance manuals are in place for forecasters to enable best practices and maximal utilization of available NWP products in a national context for the different critical seasons

Way forward for NWP in SAHF region

- Immediate need for introducing operational probabilistic forecasts based on Ensemble Prediction Systems (EPS) within all the SAHF countries to strengthen the hydro-met services delivery value chain
- Enhancing capacities in the region to produce global ensemble forecasts using all operationally accessible ensemble datasets and providing South Asia NMHSs with access to all this resources through a SAHF-Cloud
- Build a framework of MME to support generation of probabilistic forecast of extreme precipitation and temperature (maximum and minimum) by utilizing 21 member GEFS forecast being generated at IITM/IMD, and 23 member NEPS-G forecast being generated at NCMRWF
- All service delivery needs of digital forecast product access and exchange of information shall be served through operating Knowledge Hub and SAHF Knowledge-Hub platform

Way forward for NWP in the SAHF Region

- Provision of adequate induction level and mid-level training and access to analytical tools
- Implement SAHF activities in close collaboration with various WMO activities such as Public Weather Services (PWS) Programme to improve severe weather forecasting and warning services to extend the range of applications and broaden the benefits to other user sectors in society.
- Research and Development in NWP should focus on specific extreme weather events such tropical cyclone, coastal flooding, mountain meteorology, etc. involving academic and R&D institutes of South Asia

SOUTH ASIA HYDROMET FORUM

PROGRAM TO SUPPORT SOUTH ASIA REGIONAL DEVELOPMENT IN OPERATIONAL FORECASTING AND SERVICE DELIVERY