SECOND SAHF EXECUTIVE COUNCIL MEETING

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Highlights
of
SAHF Capacity Enhancement Working Paper

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EUROPEAN UNION
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RIMES
SOUTH ASIA HYDROMET FORUM
GFDRR Global Facility for Disaster Reduction and Recovery
Foreign, Commonwealth & Development Office

Objectives

To assess the existing capacities of NMHSs in meeting the user requirements and identify needs to enhance the existing capacities.

To map the capacity enhancement needs of NMHSs and prioritize them into short term needs, to be addressed during the current phase of SAHF and long term needs to be addressed beyond the current SAHF project.

To map regional resources and strengths that will be leveraged in addressing the capacity requirements of NMHSs of the SAHF member countries on a short- and long-term basis.

To build a dynamic regional strategy for enhancing capacities for operational service delivery of the NMHSs of the SAHF members countries.

Approach

- WG Meeting in June 2021
- Consultation with NMHSs in June 2021
- Online Survey in Sept – Oct 2021
- SAHF III November 2021
- Training need assessment
- Review of WB Hydro-met Assessment Reports of the SAHF Countries

Strengthening of Key Components of Operational Service Delivery

Themes:

- Observation Networks
- Numerical Weather Predictions
- Data Management analysis
- IT Competencies
- Impact Based Forecasting
- Marine and coastal services
- Mountain weather services
- Hydrological services
- Agrometeorological services
- Refresher courses and certification

Assessment were conducted at three level:

- ✓ Basic(B) training are targeted to the new recruits, operational hydrology and meteorology technical officers and technicians.
- ✓ Mid (M) level training are targeted to mid-level professionals like meteorologists, engineers and forecasting technicians.
- ✓ Expert (E) level training are targeted to senior management officers and specialists.

Priority Training Identified Within SAHF Current Phase

To be offered in collaboration with ongoing efforts (like ARRCC)

- Regional training on seasonal forecast scheduled in April 2022,
- Co-development process on enhancing seasonal forecast delivery mechanism (to be scheduled) / Regional program on enhancing effectiveness of NMFs

Synergize with regular training programs offered (WMO, RTC Pune, RTC Karachi, ITCO Ocean, COMET, UKMO etc.)

- Basics of NWP,
- Mountain meteorology,
- Marine and coastal warning services,
- Aviation met sector

Programs to be offered as part of SAHF

- ❑ *Basic Level IBF*
- ❑ *Mid Level IBF*

Training Requirements of SAHF NMHSs

Observational Networks (OBS)	Data Management & analysis (DM)	IT competencies (IT)	Numerical weather prediction (NWP)	Management, including procurement procedures etc. (QM)	Agromet (AG)	Road & Rail Transport/Aviation (AV)	Hydrological applications (HY)	Marine and coastal applications (MAR)	Mountain Weather & Climate (MT)	Impact based forecasting (IBF)
Observation networks to support IBF (B-OBS-1)	Basic Climate Data Base Management (B-DM-1)	Operational systems for running limited area weather and climate models (B-IT-1)	NWP products to support IBF(B-NWP-1)	Introduction to public procurement systems (B-QM-1)	Basic agrometeorology (B-AG-1)	Introduction to aviation meteorology and airport observation systems (B-AV-1)	Introduction to hydrologic science (B-HY-1)	Introduction to marine observation and forecasting (B-MAR-1)	Introduction to mountain weather forecasting (B-MT-1)	Basics of IBF (B-IBF-1)
Regional and global observational data to support better forecasts and services (B-OBS-2)	Advance Climate Data management and analysis (M-DM-2)	Introduction to Python for met applications (B-IT-2)	Basics of Dynamic Meteorology and NWP (B-NWP-2)	Basic elements of management in Climate Science (M-QM-2)	Weather and climate impacts on cereal crops (B-AG-2)	Introduction to aviation met forecasting (B-AV-2)	Hydrological forecasting (M-HY-2)	Cyclone and storm surge forecast for IBF (M-MAR-2)	Glacier studies and remote sensing (M-MT-2)	Evaluating and assessing risk (M-IBF-2)
Upgradation and maintenance to sustain observational networks for monitoring extreme weather/climate events (B-OBS-3)	Statistics in Climate Science (M-MD-3)	DSSs for integrating and generating IBF (M-IT-3)	Postprocessing and interpretation of NWP products to support extreme weather warnings and IBF (M-NWP-3)	Procurement strategy development (M-QM-3)	Co-production for agromet advisories (M-AG-3)	Specialized aviation met forecasting (M-AV-3)	Urban flooding (M-HY-3)		Advances in monitoring and early warning of GLOFs (M-MT-3)	Derived indices for health sector impacts (M-IBF-3)
Ocean observation systems (B-OBS-4)	Real time data processing and analysis (M-DM-4)	Linux and GrADS programming for analysis and visualization (M-IT-4)	Ensemble and probabilistic forecasts to support IBF (M-NWP-4)	Exploring opportunities for Public-private partnerships to further modernization plans (E-QM-4)	Application of sub-seasonal and seasonal forecast for agriculture (M-AG-4)	Developing weather advisories for Road Transport (M-AV-4)	Flood hazard mapping (M-HY-4)		Snow and glacier monitoring (M-MT-4)	Tailored products for the Energy sector including renewable energy resources (M-IBF-4)
Basic Agromet Observation systems (B-OBS-5)	Data Policy/Regional Knowledge Platform (E-DM-5)	Integrating remote sensing data and RADAR data for generating IBF (M-IT-5)	Specialized indices to support extreme weather warnings and IBF services (M-NWP-5)	Change management (E-QM-5)	Agro DSSs available for effective decision making (E-AG-5)	Weather and climate change implications on surface transport (E-AV-5)				Socio-economic benefits of hydro-met services (E-IBF-5)
WMO GBON protocols (M-OBS-6)			NWP products for Tropical Cyclone early warning and impacts (M-NWP-6)			Aeronautical requirements for meteorological services (E-AV-6)				
Recent advances in observational systems to support nowcasting (M-OBS-7)			Extreme temperature forecast for forest fires (M-NWP-7)							

What RTCs possessed by IMD can do?

- RTCs (MTI & ICITC) possessed by IMD, always upload detail information about upcoming routine long term training programs (4-12 months), covering all subjects in the disciplines of General Meteorology and instruments/communication-information system, and short term tailor made customized training courses in the WMO global campus platform. Same can be uploaded in a similar platform, controlled & managed by RIMES, especially for regional need, as already identified by RIMES.
  - MTI & ICITC shall take all initiatives to obtain all necessary approval & clearance for the overseas participants, nominated by PRs followed by recommended by RIMES, to get the admission to the desired training courses, mentioned above.
  - However all the routine long term certificate training courses has a fixed schedule & that needs to be complied.
  - Besides, MTI & ICITC can design & organize short term customized tailor made training courses on the specialized subjects, as already identified, for different levels. However, this requires a couple of information, viz., target audience, their background knowledge & skill and what they need to learn.
  - MTI & ICITC shall take all initiatives to obtain all necessary approval, for waiving off tuition fees and to provide trainees accommodation at a free of cost or at a subsidized rate, along with meals at subsidized rate.

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SOUTH ASIA HYDROMET FORUM

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