

Breakout Group 2: System

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU



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Systems

An Integrated and Customized System across multiple time and space scales, addressing broader spectrum of user needs, applying an Earth system approach, generating tailored products for specific user needs



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What do we know about user groups and their needs

- What data we will share
- Quality insurance and international guidance
- Verification from guidance to international standards (how do we validate important parameter that influence users)
- Life cycle management (how do we improve data-services)
- Main user groups:
 - NMHS
 - Humanitarian Agencies
 - Research users
 - Private sector



What do we know about user groups and their needs

- User requirements
 - Key elements: discoverability of information, consistency, relevance for decision making processes
 - NMHS users want data with a granularity that is enough to produce tailored services
 - What is the minimum requirement for a forecaster remains a reference
 - Humanitarian agencies need dedicated products
 - narrative-information and related trainings
 - Rapid update cycle close to, during events
 - Advisory group formed by experts during emergency in order to provide independent advise





What do we know about user groups and their needs

- Impact of user requirements on available parameters
 - It would be useful to have a set of parameters that RSMC could use, blend into new set of products
 - What we have today is just synoptic meteorology related
 - What are the parameters most relevant for LDC
 - Sharing ensemble data among members (move towards a TIGGE type of data-archive)
 - Multi model products

What issues related to coordination and inter-operatibility need to be addressed?

- A WMO mechanism that ensures the link with users through Technical Commissions and Regional Associations
- Coordination mechanism across WMO components to provide a consolidated picture to humanitarian agencies
- How to create a more efficient ecosystem of RSMC
 - Regime oriented RSMCs, nuclear and volcanic ash, work well
 - Tropical Cyclones, are we coordinating well the warnings and the consistence of services ?
- Pilot projects to flash out the problems
 - Lake Victoria used as an example
 - Verification guidance to standards



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Breakout Group 2: Accessibility

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Accessibility



Accessibility of data products and services from S/GDPFS complemented by future plans for the federated WMO Information System. Address challenges of growing data volumes, providing familiar interfaces and applications, combining meteorological data with data from other agencies / socio-economic data.



What do we know about user groups and their needs

Overarching considerations

- Policy on data accessibility (open, intermediate, reserved)
- Discoverability: AI in data management, user friendly interface
- Accessibility of data and of services
- Accessibility to visualization (Benefit from other software sectors)
- substantial change on how do we show data around ...
- Earth system approach requires interoperability of format
- Common grid to map all regional/national products



How S/GDPFS could take full advantage of WIS2.0?

Technical requirements:

- If we are using open standards we are on the safe side. The 11 principles could guarantee the sustainability of the solution
- Quality assurance of API
- If we are moving towards a cloud technology are clouds interoperable ?
- About discoverability WIS 2.0 has to create meta-data for data and services - How do we maintain/control metadata



How S/GDPFS could take full advantage of WIS2.0?

Technical limitations

- Computing infrastructure, large amount of data produced - Related partnership
- If WIS2.0 is late and technology could change - what is the risk assessment plan and mitigation
- Bandwidth in LDC - backup mechanism

Accessibility pilots

- Pilot 1: Weather model in the cloud, provide information for a specific LDC region, benchmark for LDC
- Pilot 2: how could we seamlessly distill the data along the time scales, developing full chain products (Hydrology test, HydroSOS ex)
- Pilot 3: DRR virtual laboratory for forensic analysis using virtual environment with accessibility tools



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Breakout Group 2: Research

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Research & Innovation

Strengthen science linkages among compartments of Earth system, allow development of novel operational products, exploit predictability on all time and space scales, promote socio-economic research.



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Priorities in innovation and research: how do these need to be coordinated internationally?

Overarching considerations

- Mechanisms for gathering inputs from operational stakeholder
- Cross-fertilization between research and operations (inputs to long term plans on both sides)
- Identifying priorities for short-cut research
- Open data for science





Priorities in innovation and research: how do these need to be coordinated internationally?

Extreme weather events and resilience

- Nowcasting and NWP: how do we link them better to provide warning?
- How do we explore the limit of predictability in the context of warnings (tropics, mid-latitude)?
- how could social science help us in filling the gap between predictability limits and information needed?
- How do we move to the 100 m scale?
- What does coupled-assimilation mean in the context of nowcasting and long-range forecast?



Priorities in innovation and research: how do these need to be coordinated internationally?

Technology and Accessibility

- Climate data and information in the GDPFS context: important point for discoverability, how to link to CMIP etc to shortcut information for LDC
- AI is a missing component: what is needed more specifically (possible pilots?):
 - Parametrisation and calibration
 - Downscaling for specific sectors (energy, hydrology)
 - Post-processing methodologies





Co design between operations and research ?

Overarching elements:

- How do we organise science data into GDPFS to be more accessible?
- Quality control of scientific data
- Co-design for research field campaign, sending all data to GTS
- Test bed data set (such as TIGGE) as a common practice
- WGNE a good place for gathering priorities from Operational and Research sides: strengthening the role of WGNE here
- Short cut projects: AI, software development; Aviation Research (Aviation RDP example)



Innovation and operational system, in particular in LDCs/SIDS?

- Very weak link between research agencies and operational services in LDC
- WMO should encourage thinking NMHS to think out of the box, NMHS they should open as much as possible to research with other institutes (i.e., sharing facilities, development of training activities etc)
- Membership of different commissions, not just populated by NMHS staff, a good option is having LCD universities more involved
- WMO training system is targeted just to NMHS they need to look outside NMHS especially in LDC
- Educational and Training, how do we facilitate research and accessibility to innovation



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