

# Plenary: Key points for IP revision

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU



WMO OMM

World Meteorological Organization  
Organisation météorologique mondiale



- Scope: Earth System (AQ, hydrology), Long timescale? (RCCs, response to user needs, CSIS), Reanalysis and Reforecasts
- User feedback: strengths & weaknesses, verification, impact based information, requirement of comparative evaluation to prevent proliferation of centres
- Coordination: ensuring the link with users through Technical Commissions and Regional Associations and to provide consolidated picture to humanitarian agencies
- How to create a more efficient ecosystem of RSMC?
- Limit to technical --- not people aspect?
- Data compatibility – learn from COPERNICUS





## Identifying user requirements

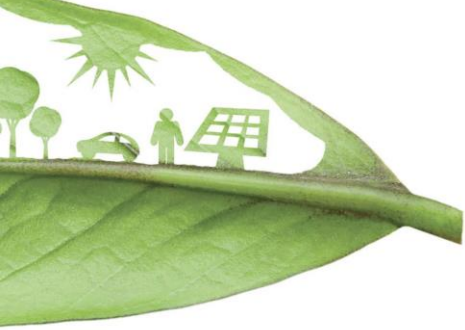
- Rolling Review of Requirements:
  - Gathered through regional mechanisms, using user forums, table top, IWTC-like-meetings, .....
  - from NMHSs, humanitarian agencies and other decision makers, research users, private sector
  - Led by services in coordination with infrastructure and research
  - Reverse cascade from National => regional => global
  - Translated into requirements for Research & Innovation



## Taking advantage of WIS2.0?

### Technical requirements:

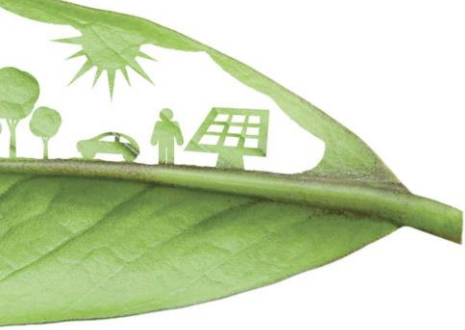
- If we are using open standards we are on the safe side. The 11 principles could guarantee the sustainability of the solution
- Quality assurance of API
- If we are moving towards a cloud technology are clouds interoperable ?
- About discoverability WIS 2.0 has to create meta-data for data and services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



## Taking advantage of WIS2.0?

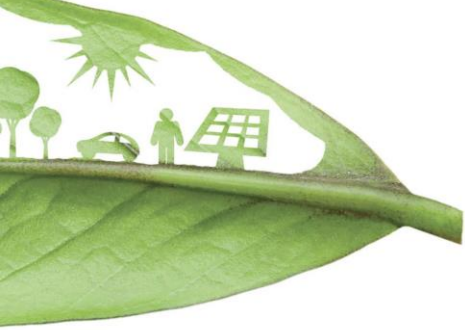
### Technical limitations

- 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



## Big data and Cloud

- Use of cloud to run processing closer to the data to avoid moving big data.
  - Remote processing of data residing in different clouds is a challenge and requires interoperability between clouds.
- Functions of DCPC/GISCs will be revised to provide access to services to meet needs of users.
- Accessibility (users accessing data) and interoperability (users to process the data in the cloud)



## Data Exchange and Policy

- Non-conventional data exchange (i.e. Atmospheric Composition Data) issue to be addressed
- Standard Data Formats - a challenge
- Interoperability with Private Sectors

# Co-design

- Identify user sector, e.g. humanitarian sector
- bring those responsible for operations and research together with decision makers.
- Identify how they make decisions, what information do they need. If information exists, how can existing products be tailored.
  - Come up with prototype, use forecast demonstration phase to detail design of service, move to pilot demonstration in operational setting.
  - Link prototype to research --- gather the knowledge from those using the prototype within a country and feed that back into research
- If information does not exist, can this information realistically be developed? If it requires research, then plan for it.
- Instruments such as RDP, FDP, SWFDP



# Co-design

- Testbeds used in many countries – bring forecasters and researchers together for specific cases – how can these be utilised in regional and global coordination?
- General need for regional coordination and then need bridge to the WMCs – reverse cascading system
- Metrics
- Co-design in an interdisciplinary setting is a major challenge!

# Obstacles to Innovation

Need to provide opportunity for the research players to interface with the operational players.

- Challenge of making time for operational people to interact with research (and vice versa). Challenge of having time and skills on the ground to use the available model information
- Get university people in the country / region involved in the SWFDPs.
- Motivate university researchers to work on the key challenges, funding process studies may not have the direct impact on operations though.
- Issue is pressure on academic community to publish papers – need to take into account the misalignment of metrics. Could depend on stage of career of researchers ---- need to choose who to engage with care.
- Find a way to reward implementation into operational environment in the research career.

# Innovation and Research

- WGNE direct link Research – System: (WMCs, WWRP & WCRP: DAOS, Verification, GEWEX, .....,)
- Education and Training, need to look outside NMHSs; how do we facilitate link to research and accessibility to innovation in LDCs/SIDs?
- Open Data / operational datasets for research.
- Transfer of research datasets to operations (e.g. TIGGE)
- Lack of strategy - added
- Timeline with milestones - added

# Thank you Merci



WMO OMM

World Meteorological Organization  
Organisation météorologique mondiale

# Interactive model & Co Design

National and International drivers

