



World Meteorological Organization

Weather • Climate • Water

# GDPFS – CHy

## Activities/Needs/Contributions

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# Outline

- Chy and NHSs
- A note on forecasting ranges in hydrology
- NHSs needs and potential contribution to GDPFS



# Commission for Hydrology

- The Commission for Hydrology (CHy) shapes the **water related activities of the WMO** and addresses issues related to the basic hydrological observation network, water resources assessment, flood forecasting and management, adaptability to climate variability and change and promotes exchange of technology and capacity building.
- In particular the outcomes of its deliberations provide guidance to WMO Member countries and WMO Secretariat for the implementation of the **Hydrology and Water Resources Programme** of WMO.
- Forum of National Hydrological Services
- CHy was formally established in 1959.



# Commission for Hydrology - Activities

WMO CHy 14<sup>th</sup> Inter-session period 2012-2016

- Quality Management Framework – Hydrology
- Data Operations and Management
- Water Resources Assessment
- Hydrological Forecasting and Prediction
- Water, Climate and Risk Management



# Responsibilities of NHSs

- Observation of surface waters (stages and discharges)
- Data quality control and primary processing
- Hydrological balance and water resources assessment
- Hydrological forecasting
- (water quality, ground water monitoring and assessment etc.)

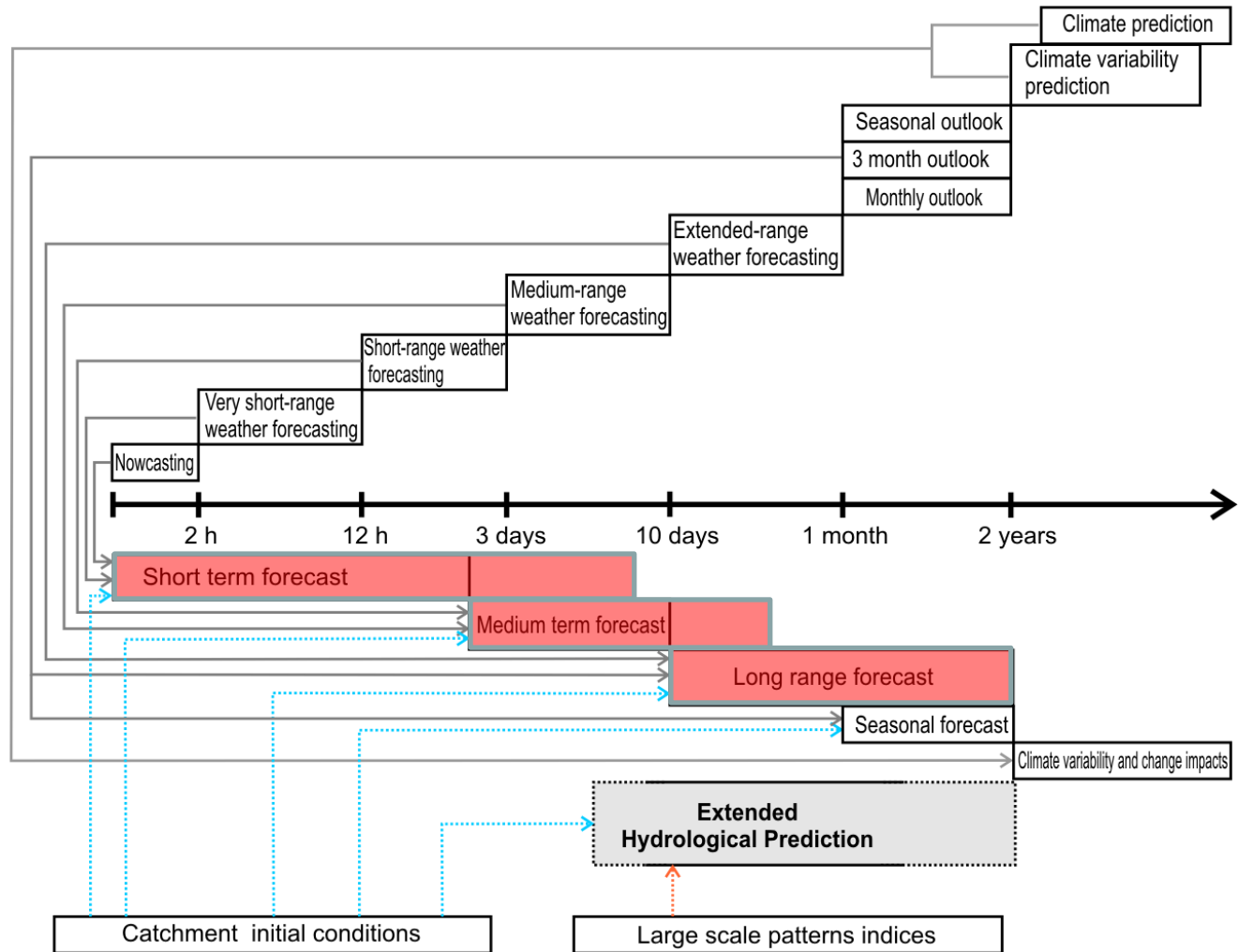


# Runoff (flood) generation process

- Initial conditions (soil moisture, groundwater, snow, reservoirs) are very important
- High spatial variability
- Temporal and spatial development of floods (basin scale determines a forecast lead-time)

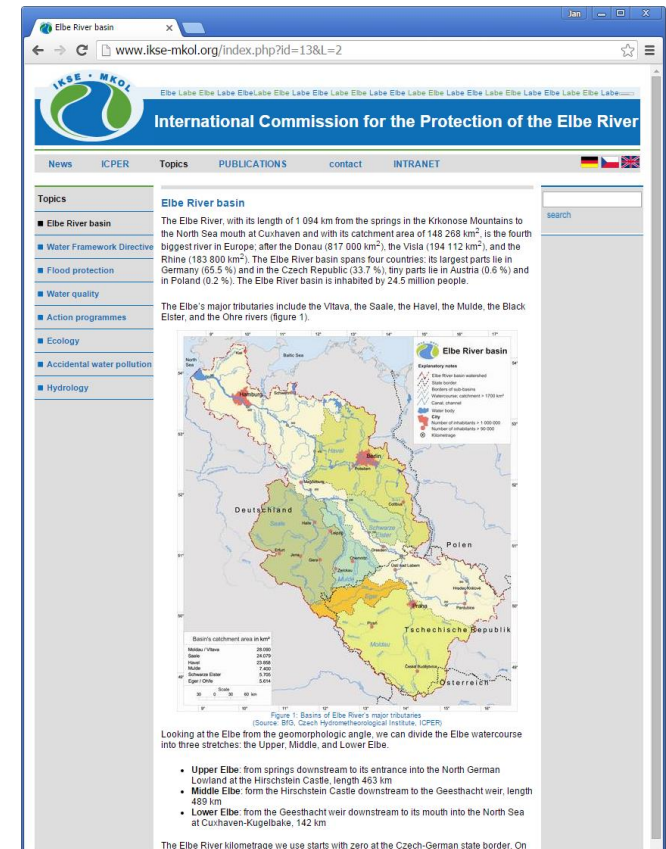
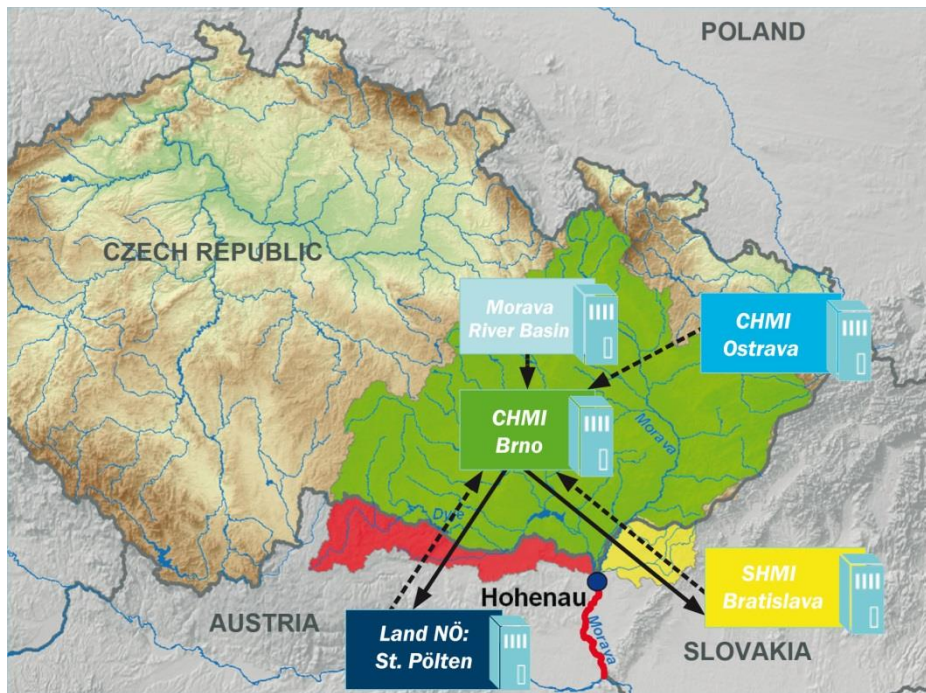


# Forecasting ranges in hydrology



# International and regional cooperation

- Flood forecasting is a national-level responsibility
- Basin scale - International basin organizations
- Transboundary cooperation





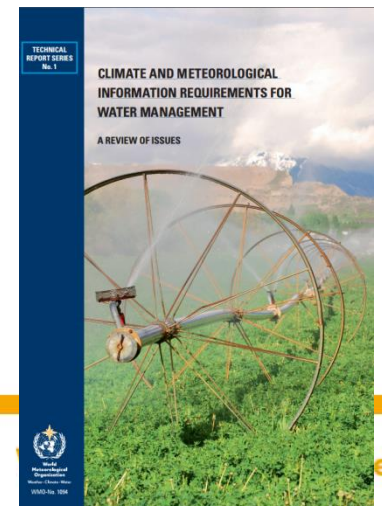
# International and regional cooperation

- Europe - EFAS system as a pre-warning tool for NHSs
- GloFAS ... (GFP)
- G-WADI (UNESCO-IHP)



# CHy & NHSs needs

- NHSs are users of meteorological and climatological services (data, forecasts) usually not within one NMHS
- Levels and ways of cooperation between NMSs and NHSs differ significantly among countries and regions
- Climate and Meteorological Information Requirements for Water Management (Technical report series No. 1, WMO/No. 1094)



# CHy & NHSs needs

- SASCOF experience
  - Observation and short term forecast is a basic need
  - Delivery as tailored product for hydrological application (no GRIB☺)
  - Bias corrected and downscaled to the resolution of hydrological model
  - Verification (different results from different sources are very confusing...)



# CHy & NHSs contribution

- Open question...
- Developed hydrological services typically provides:
  - Observations in NRT
  - Flash flood guidance
  - Short-to-medium range flood forecasting
  - Seasonal runoff prediction
  - ....with aim to provide it in a seamless way to users.





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# Thank you for your attention

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