

THORPEX

World Weather Research Program (WWRP) and HyMeX: Stronger links for benefits to atmospheric and hydrology research



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WWRP

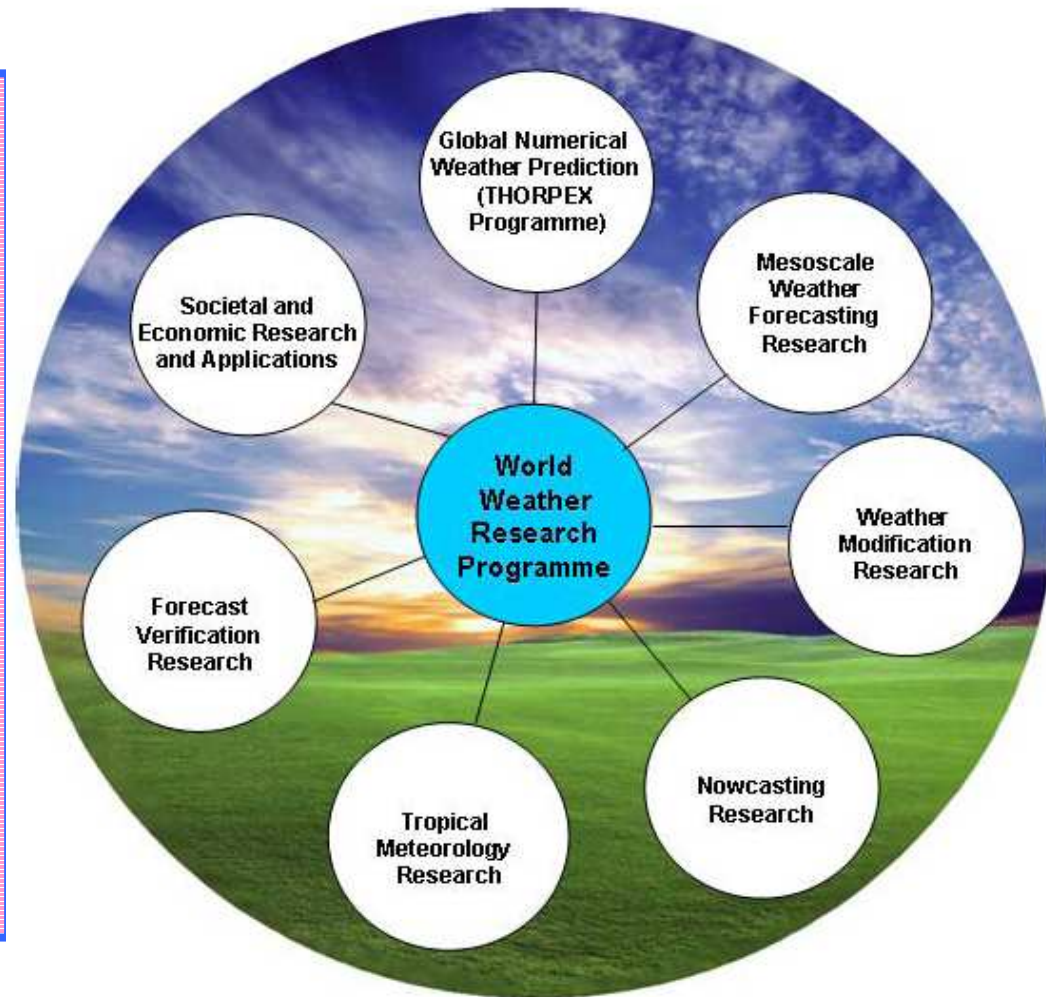
World Meteorological Organization Geneva

**WMO
OMM**

- The WWRP focuses on the intersection of challenging science and the need to serve society through advancing predictive skill and the utilization of weather information.
- Focuses: advancing understanding and improving prediction of **high-impact weather** from minutes to seasons from the poles to the tropics.
- Activities: span from basic research in the academic community to operational contributions
- Activities include:
 - Long-term research programmes (THORPEX programme) and long-term coordinated efforts focusing on priority areas research areas
 - shorter-term research projects (~ 25 now) (Forecast Demonstration Projects (FDPs), Research and Development Projects (RDPs), archives, field campaigns)
 - Expert reports on the current status and future direction of critical research and operational areas
 - Initiation and/or sponsorship of conferences, workshops, symposia and other meetings
 - Resource mobilization for WWRP efforts

Major Partners

- Joint Working Group on Numerical Experimentation (with WGNE)
- World Climate Research Programme (WCRP)
- WMO Weather and Disaster Risk Reduction Services
- Global Atmosphere Watch (GAW)
- WMO Integrated Global Observing System (WIGOS) and Information System (WIS)
- The International Council for Science (ICSU): Integrated Research on Disaster Risk (IRDR)
- **Hydrological Research Community**
- Ocean Observations and Modelling Research Community

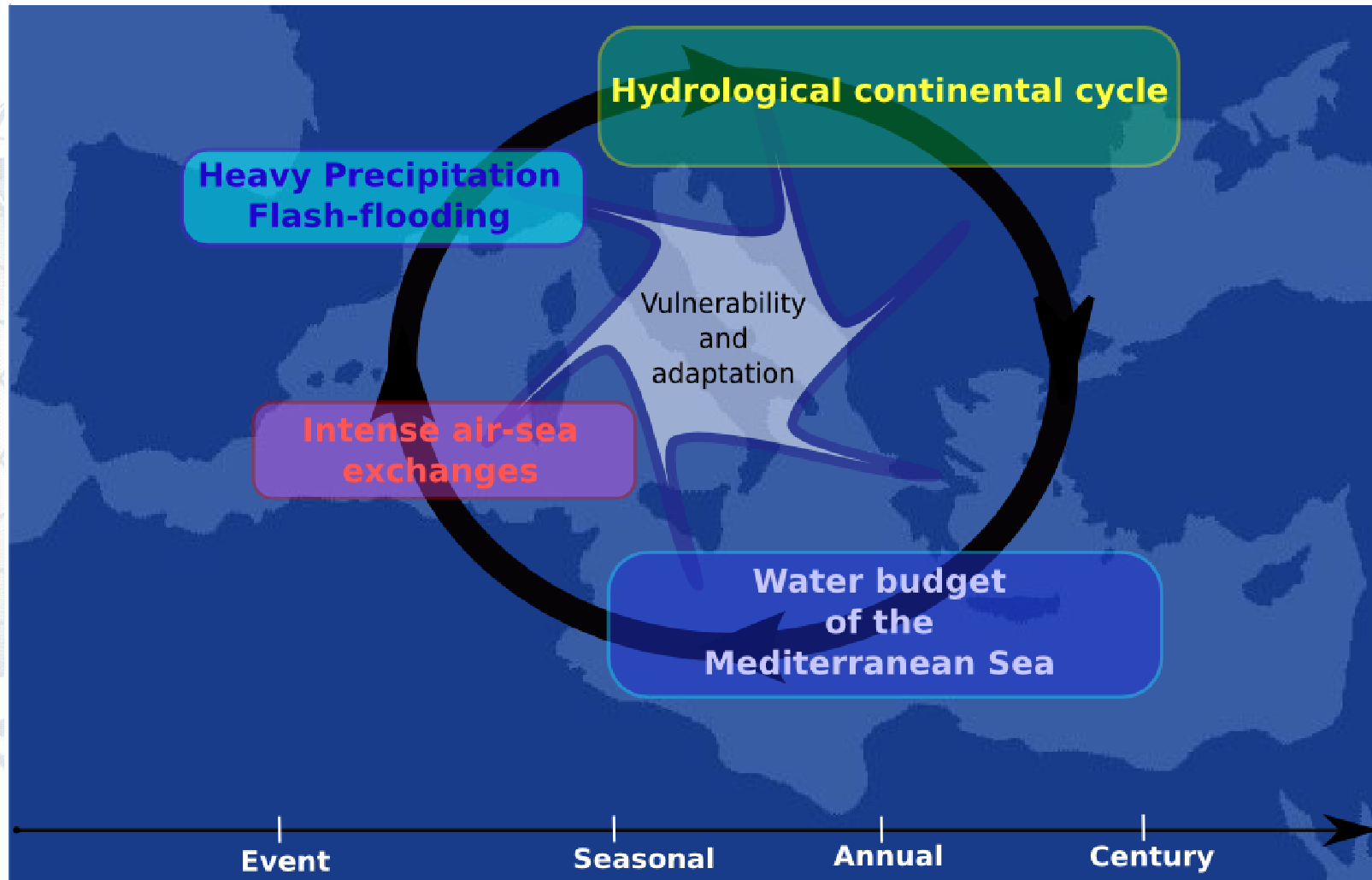


Major Components

HYMEX and WWRP

- In response to requests from HYMEX, the project has been endorsed by both the Joint Scientific Committee of WWRP and the WWRP's International Core Steering Committee for THORPEX
- The obvious area of mutual interest is the need to advance understanding and improve the prediction of high-impact events (e.g., heavy rainfall, flash floods, cyclogenesis, regional winds) across scales of nowcasting, regional modeling, medium range prediction (THORPEX, TIGGE) and seasonal/climate (new THORPEX-WCRP collaboration).

HyMeX Main Scientific Topics



HYMEX and WWRP

■ Other areas of mutual interest include:

- Coordination of field campaigns -- HYMEX and T-NAWDEX (THORPEX-North Atlantic Waveguide and Downstream Impact Experiment)
- “Coupled” hydrological prediction of flooding events (developing WWRP priority building on MAP D-PHASE)
- HYMEX’s air-sea interactions: developing coupled regional models and also for WWRP-WGNE-WCRP efforts to reduce model errors.
- Impacts of climate variability, climate change and high impact events on water resources, vulnerability and other societal impacts areas (e.g., THORPEX Africa, WWRP’s Societal and Economic Research Applications, partnership with IRDR (International Research on Disaster Risk))

HYMEX and WWRP

- Emerging scientific issues:
 - Further improvements of dynamics and parameterizations in hydrology modelling
 - Integrated hydrology-atmospheric models
 - Ensemble hydrology and atmospheric modelling
 - Advanced hydrology in climate models