

Concept

Operational Global and Regional Hydrological Modelling Community within the Water and Climate Coalition

Background:

The Water and Climate Coalition is a multi-stakeholder initiative under the SDG 6 Accelerator framework that is aiming to provide tangible action, activities and policy support, for an integrated water and climate agenda with a special focus on data, information, monitoring systems and operational capacity.

Data, information and knowledge about the current status of the water resources, as well as sub-seasonal, seasonal and decadal water resources outlooks are essential for successfully adapting to a changing climate. For decision making and knowledge acquisition, national and transboundary water organizations, research institutions, international organizations and other stakeholders around the topics of water, agriculture and environment rely on information provided by operational hydrological modelling. However, the required information is rarely available for an operational usage. By establishing a community for operational global hydrological modelling, the WCC is trying to close this information gap. The focus is therefore on enhancing the capacity in order to apply the models in an operational way.

Goals:

Establishing a community of people and organisations for developing, enhancing and applying global and regional hydrological models in an operational mode:

- To improve the knowledge about the status and outlook of the available water resources (taking into account surface and subsurface water, along with snow and ice) under a changing climate.
- To support the operational capacity of countries, regions and underpin the foundation of policy making, on a global scale.

Objectives: Apply and improve operational models, tools and platforms on a regional and global scale to:

- Assess current water availability
- Produce (sub-) seasonal hydrological outlooks
- Generate decadal hydrological outlooks under climate change

Action plan:

| Phases | Activities | Outcomes |
|-------------------|--|--|
| Launch | Modelling Community Launch | <p>Discuss the concept of Operational Global and Regional Hydrological Modelling Community</p> <p>Outline existing gaps in operational hydrological modelling in a broader perspective.</p> <p>Agree on concrete joint activities in the testing and study phase.</p> |
| Testing and study | <p>Applying several models in chosen pilot regions in close cooperation with NMHS and national and transboundary water organisations.</p> <p>Applying several hydrological forecasting models on a global scale.</p> <p>Establishing a mechanism for an intercomparison of available global (regional) hydrological models.</p> | <p>Produce a guideline underlining the for applicability of different available models based on data availability, land type, etc.</p> <p>The modelling groups can largely benefit from the intercomparisons and evaluation of the model performance when applied under different catchment conditions.</p> |
| Operational | <p>Application of hydrological models in an operational mode on global, regional, basin and national scale</p> <p>Providing guidance to the NMHS and regional agencies (workshops/trainings) on how to use regional and global models in an operational way.</p> <p>Contribute to the definition of standards of presenting (sub) seasonal outlooks and status assessments</p> <p>Integrating different capabilities into a common platform to present hydrological outlooks and status.</p> | <p>To enhance capacity of the NHMS and agencies on operational and status forecasting.</p> <p>The compilation and comparison of the reports produced by the different agencies or members will be possible.</p> <p>Improving the ease to publish and access the status and outlook through a common platform.</p> <p>Annual global state of the water reports.</p> |