

Introduction to the WMO Global Hydrological Status and Outlook System (HydroSOS)

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WMO OMM

World Meteorological Organization

Organisation météorologique mondiale

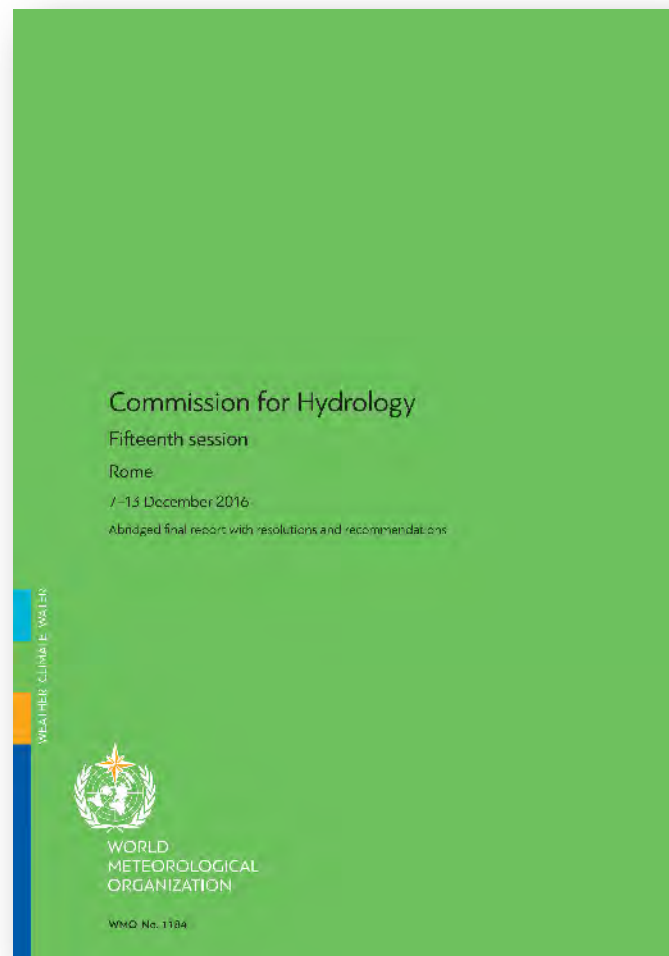
Resolution 8 (CHy-15)

- **Decides:**

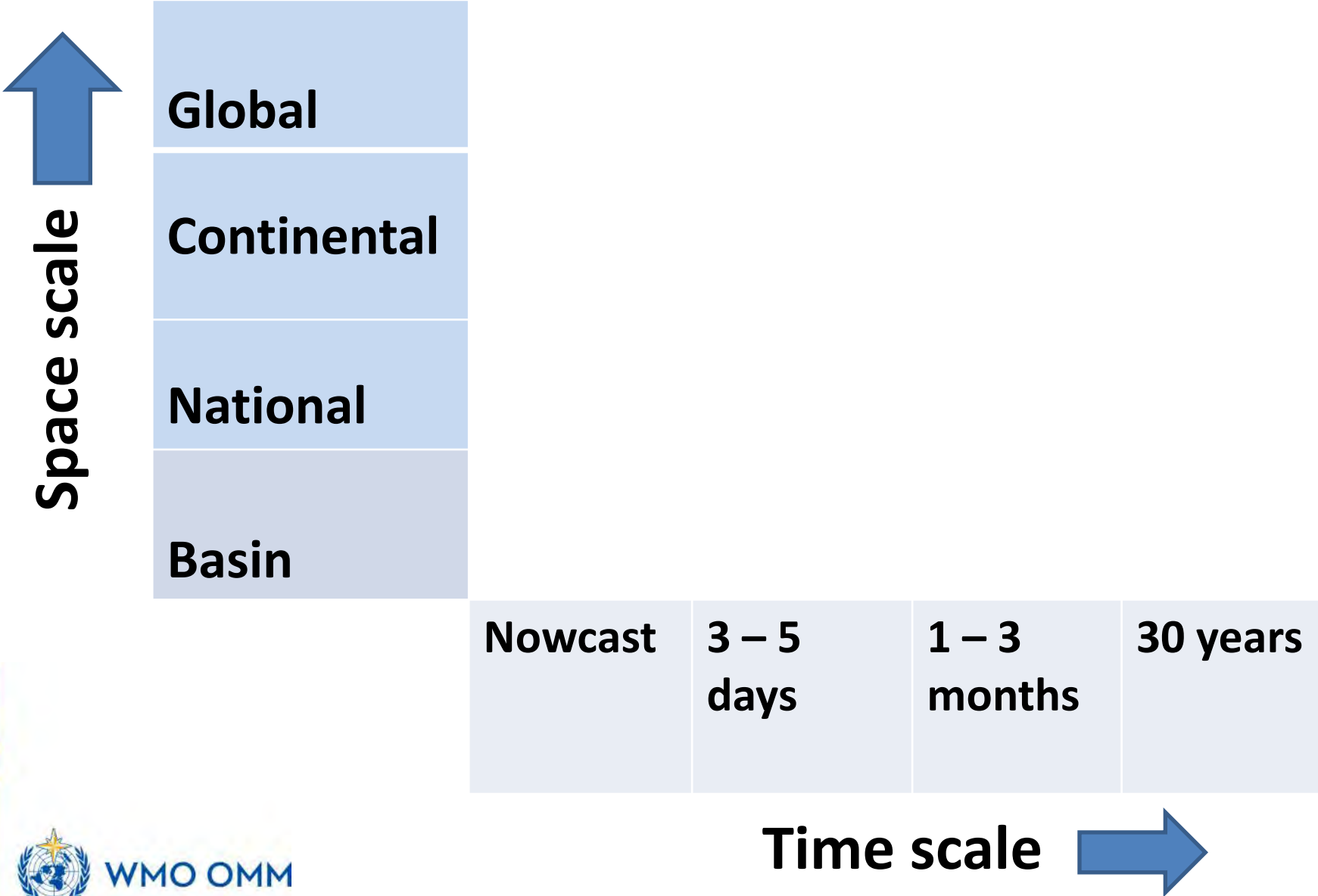
- 1) To initiate the WMO Global Hydrological Status and Outlook System;
- 2) To approve the formation of an expert task team to oversee the pilot phase of the initiative and report the findings to the Commission at its sixteenth session;

- **Urges**

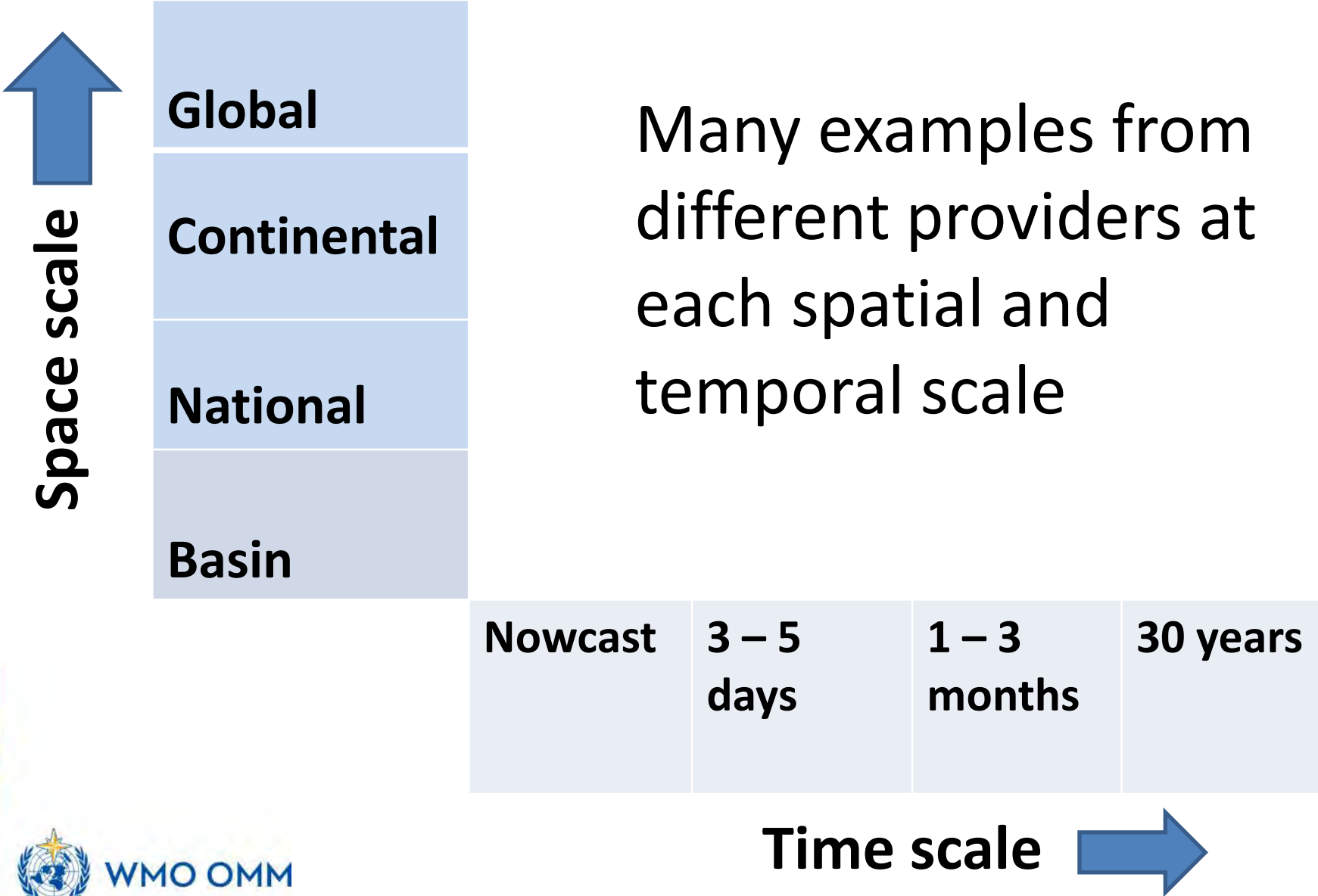
Members to provide support to the initiative by contributing expertise, current capabilities, information on their requirements and validation of the System products based on observed data.



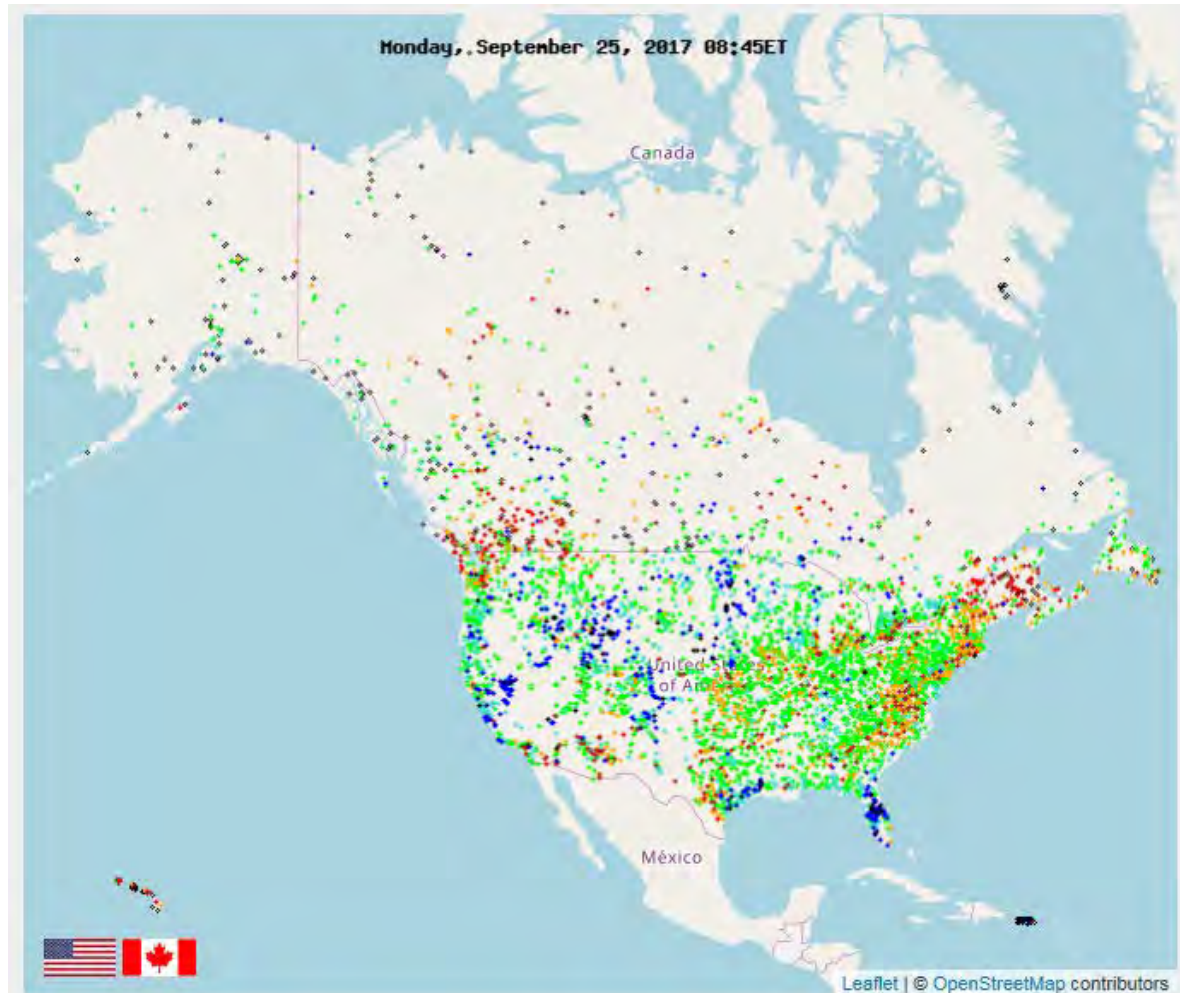
Hydrological Services/Applications



Hydrological Services/Applications

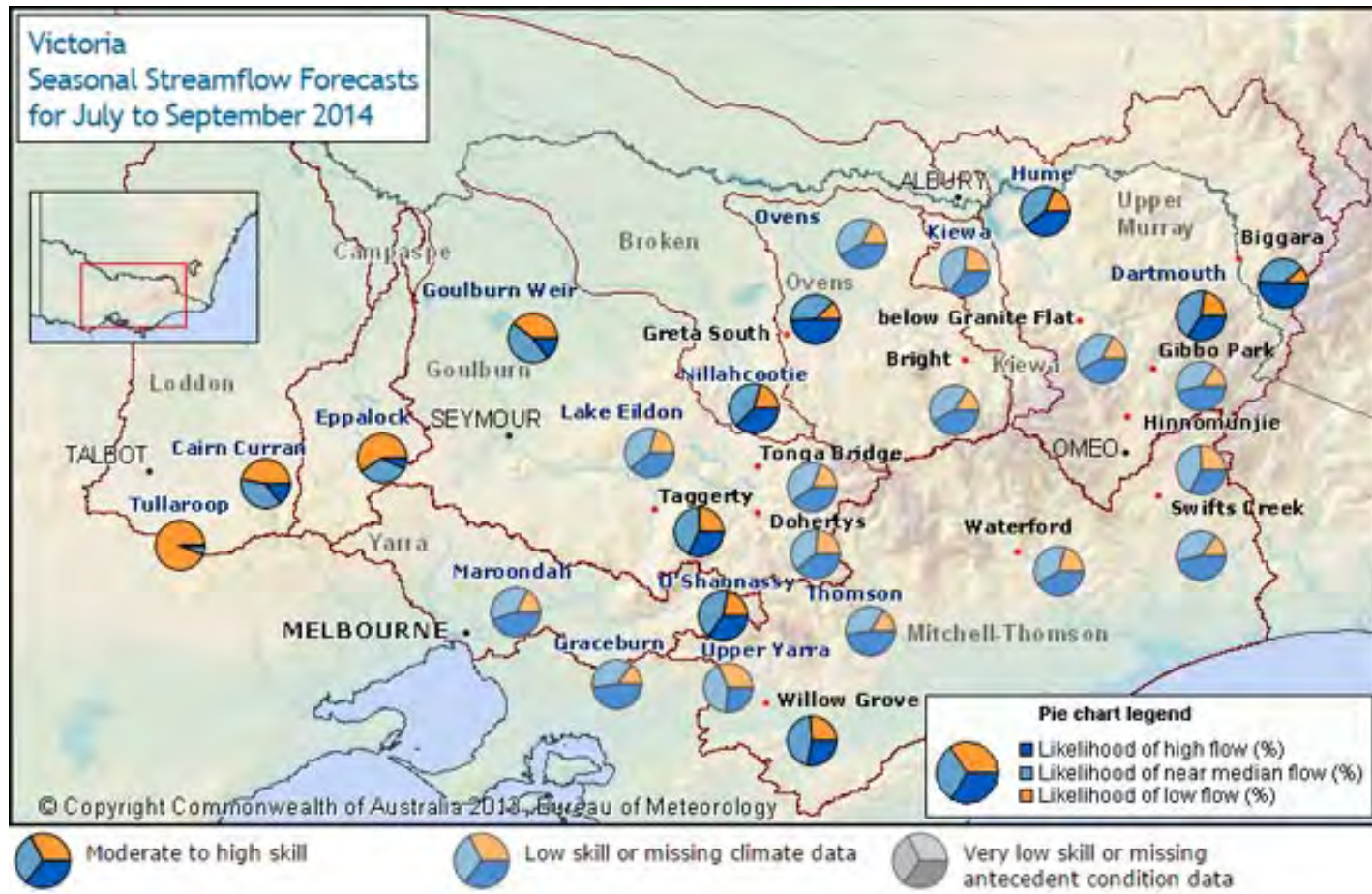


US/Canada Waterwatch

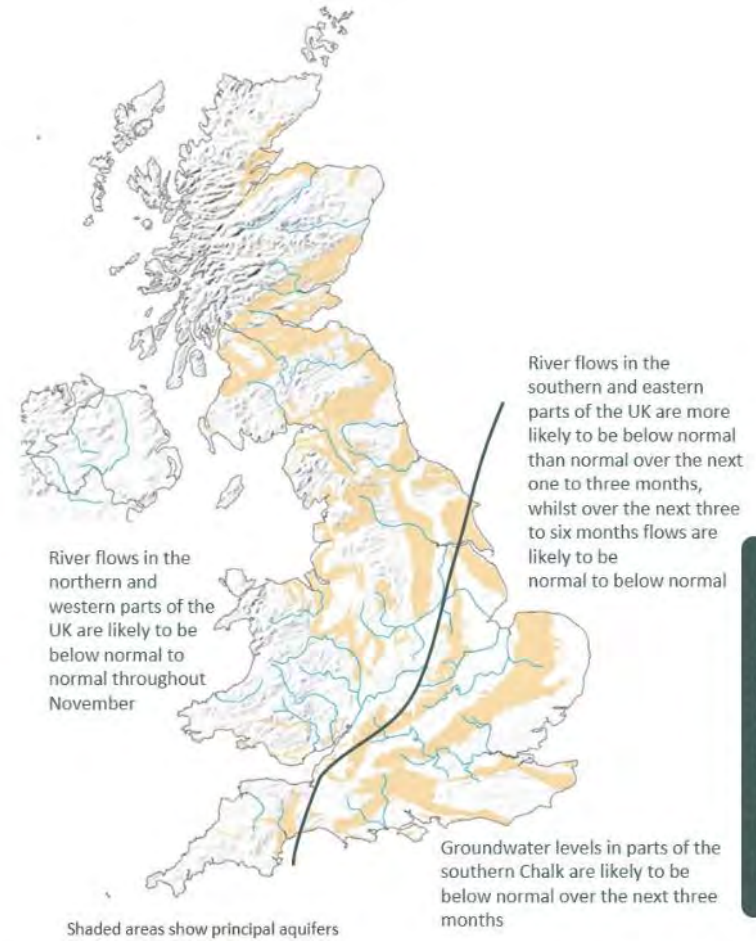
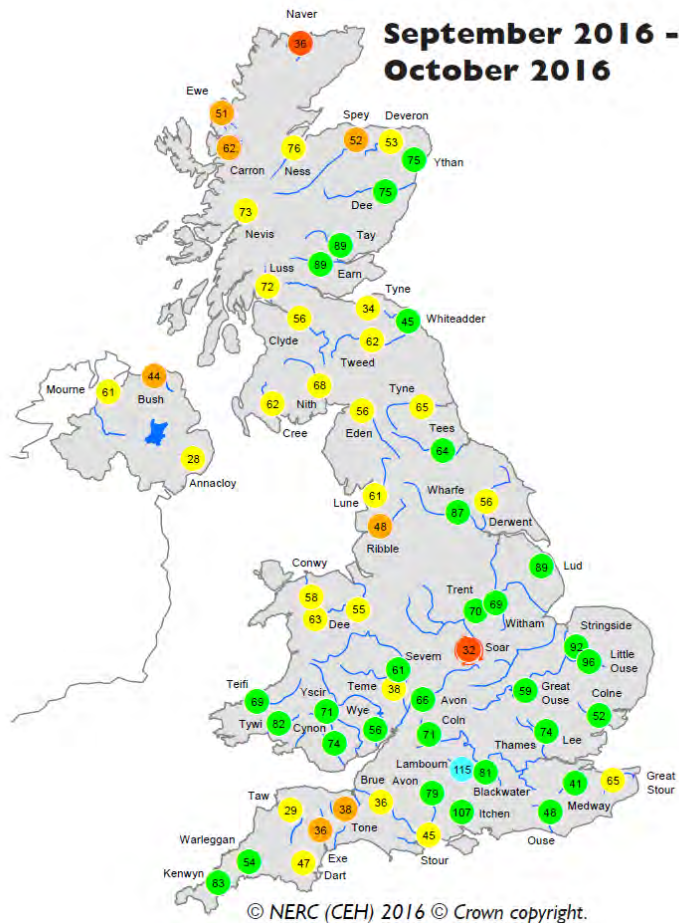


Explanation - Percentile classes						
●	●	●	●	●	●	●
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Australian Seasonal Streamflow Forecasts



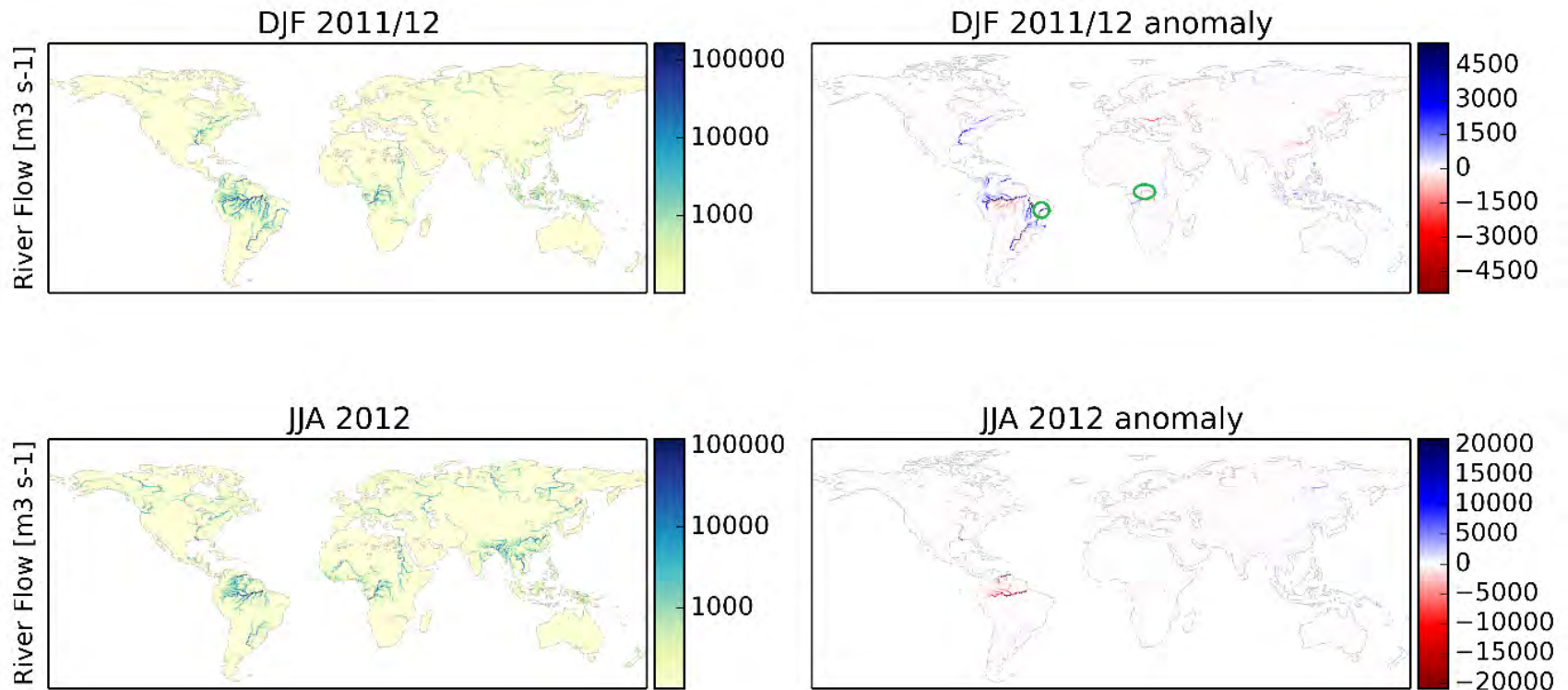
UK Hydrological Summary and Outlook



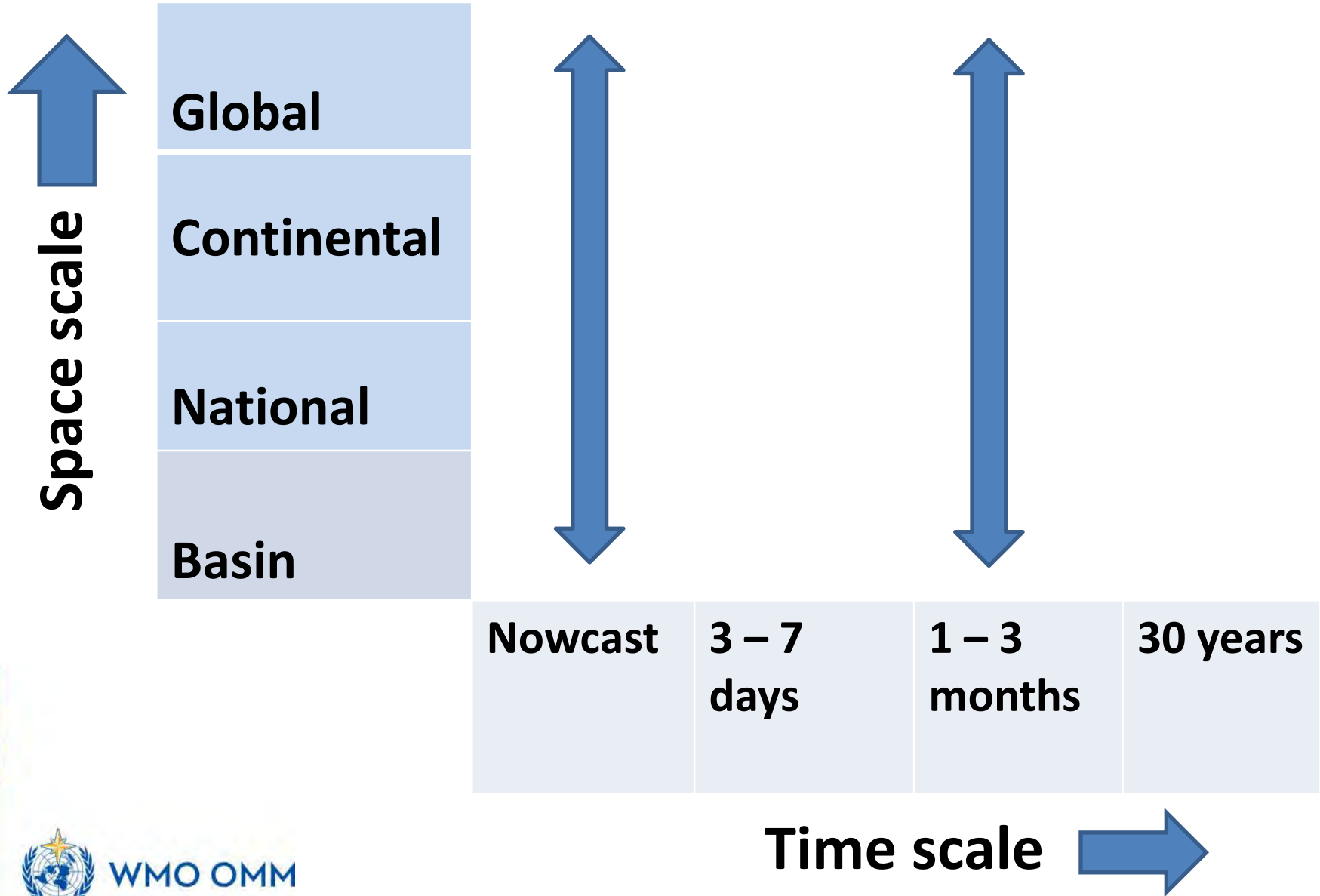
November 2016

Global Scale Hydrological Modelling

- Multiple data sources
- Multiple large-scale hydrological models



Scope of HydroSOS



HydroSOS Ambition

To develop a WMO capability to assess:

- a) An indication of the **current global hydrological status** (including: groundwater, river flow, soil moisture);
- b) An appraisal of **where this status is significantly different from 'normal'** (for example, indicating drought and flood situations);
- c) An assessment of **where this is likely to get worse** over coming weeks and months.

Potential Use of HydroSOS

- NHMSs and national stakeholders
- Basin water resources management
- International funding institutions
- Aid agencies and UN bodies

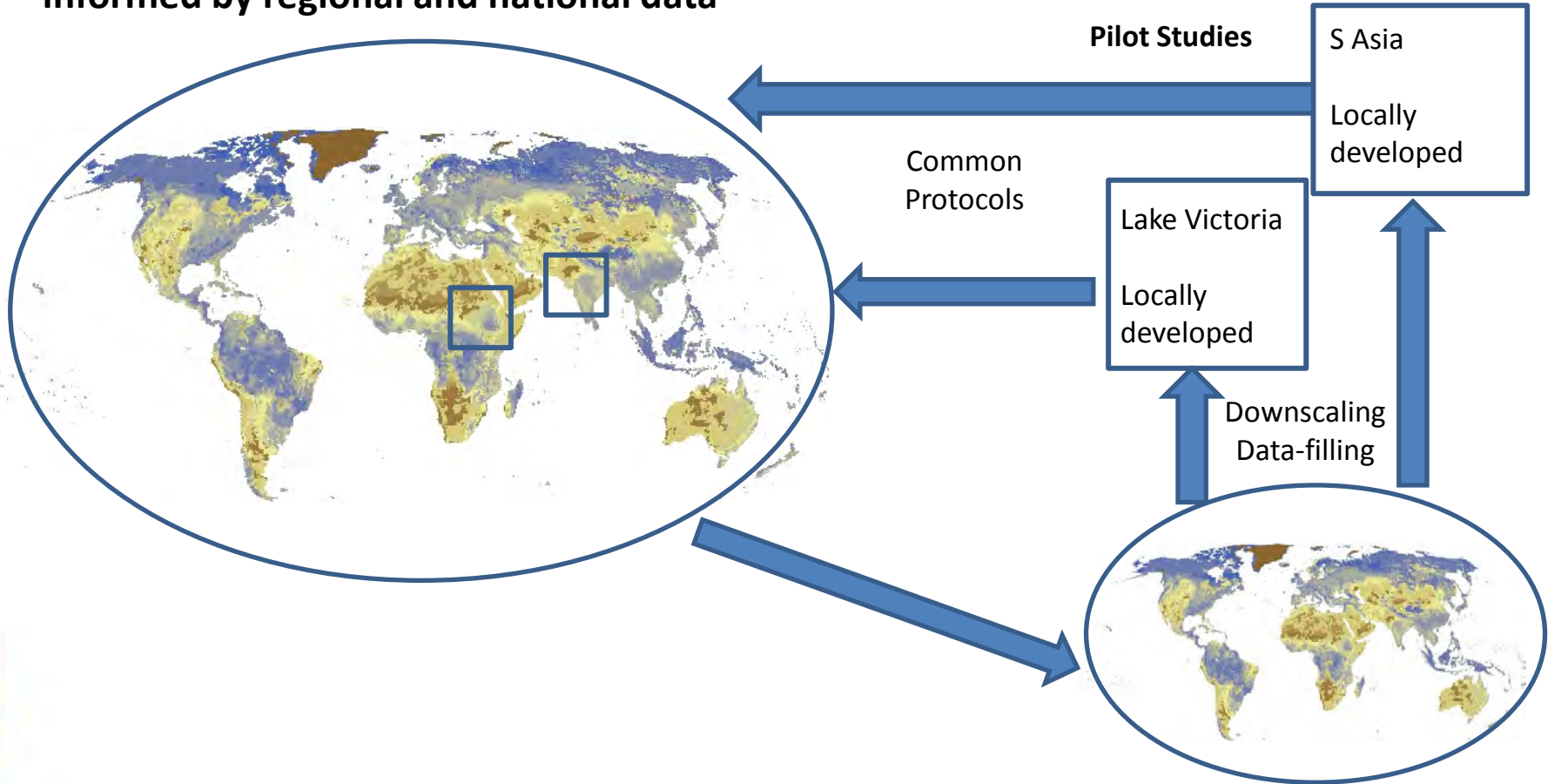
GHSOS – Building an Operational Framework

Not just building another system!

- WMO framework and infrastructure for NHMSs
- Brings together status and outlook information from different providers
- Improve NHMS capability to conduct regional/national/basin assessments
- Develop a scheme for producing ‘composite’ global products
- Feed global model outputs into regional/national/basin scale assessments

GHSOS – Building an Operational Framework

**New composite global assessment
informed by regional and national data**



**Global Hydrological Models linked to Reanalysis,
Satellite retrievals and Forecasts: 25km**

The Proposed Approach

To integrate current capabilities and tools in:

- Local scale ground-based data such as river flow, soil moisture, lake levels and water table depths;
- Global scale remotely sensed satellite data such as precipitation, soil moisture, groundwater and snow cover/depth;
- Global/regional weather forecast (temperature and rainfall) models;
- Global/regional hydrological (river flow, soil moisture, groundwater) models.

An ensemble approach

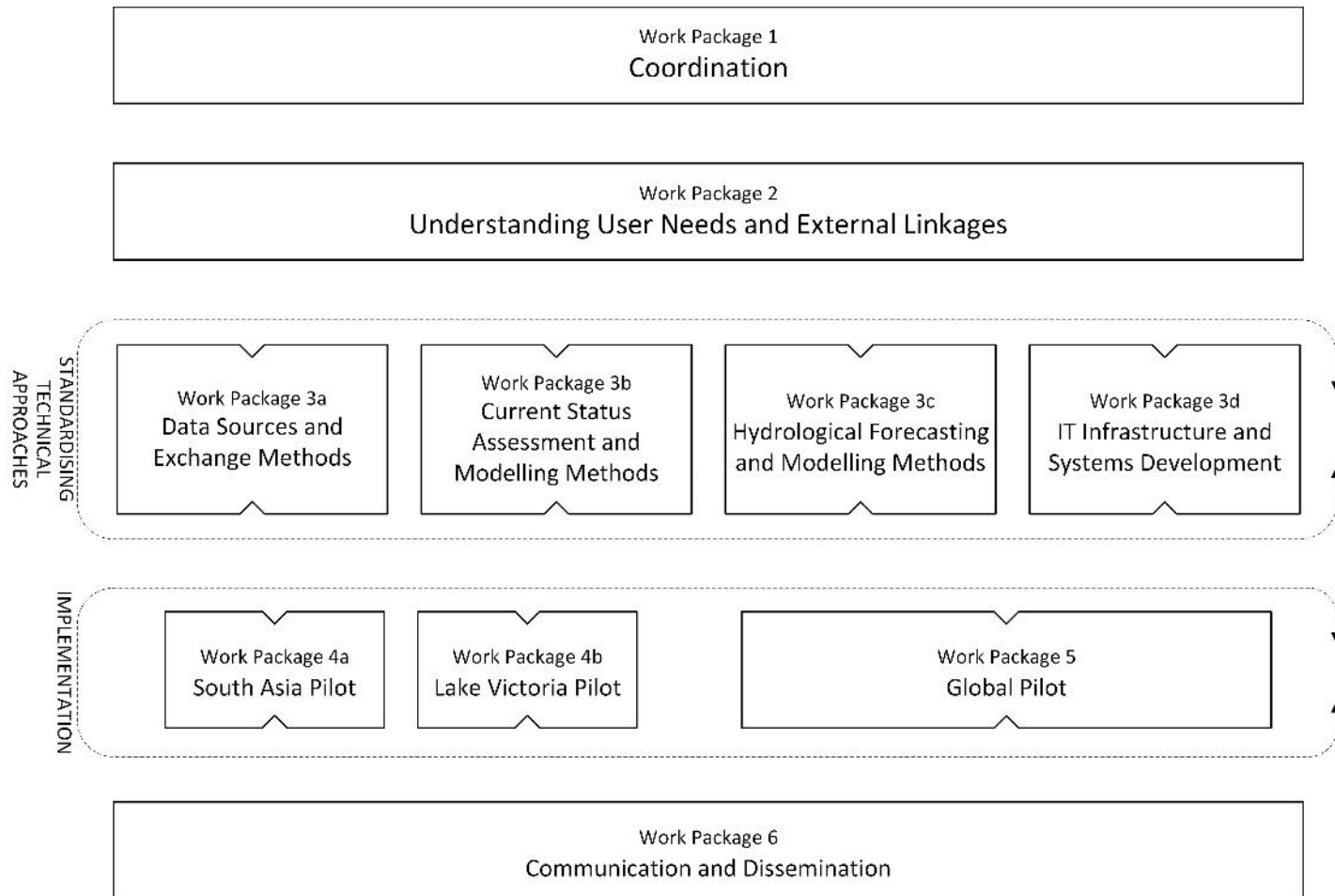


Pilot Phase 2016-2020

Over the Chy-15 period, this would deliver:

- The establishment, through linking with other WMO initiatives (such as WIGOS and in particular WHOS), of reliable and routine data streams for the priority monitoring and forecast information needed for the system;
- The development of multiple pilot projects which provide hydrological status and outlook assessments for demonstration regions around the world;
- Development of governance frameworks for the initiative which ensure widespread collaboration amongst NHMSs from across all WMO Regions;
- Development of an open network of NHMSs across the world who act as global/regional/sub-regional processing and analysis centres for the initiative (linked to the GDPFS).

Draft HydroSOS Pilot Phase Structure



This is just the start of an extremely ambitious venture!!



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Thank You

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