

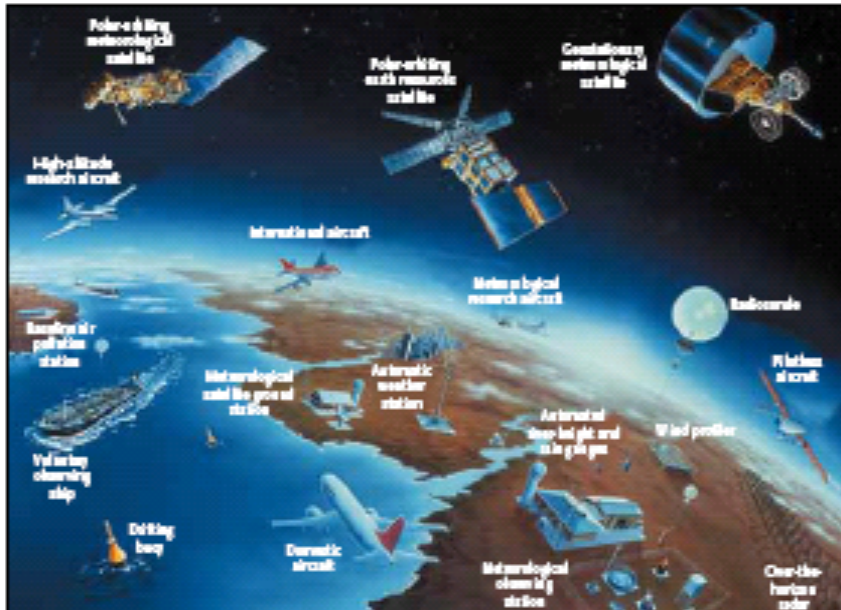


Towards Implementation of the Global Framework for Climate Services

Jerry Lengoasa
WMO DSG

The purpose of GFCS

Better management of climate variability and change and adaptation to climate change through use of climate information in policy and practice from global to national scale



Accessibility

Quality

Availability - Data

Capacity

Partnership

The GFCS short term priority areas

Agriculture



Water



Health



Disaster Risk
Reduction



Extraordinary Congress (Oct 2012)

Approved *draft Implementation Plan of the GFCS* with Members' comments recorded in the Congress report for consideration by the IBCS

Established *the Intergovernmental Board on Climate Services* as an additional body accountable to Congress under article 8 of the WMO Convention, **and approved**

- Terms of Reference and Rules of Procedure of the Board
- Specific functions of the WMO Secretariat in support of the GFCS

Urged Members to make voluntary contributions to the GFCS trust fund for the institutional and secretariat support of the Board;

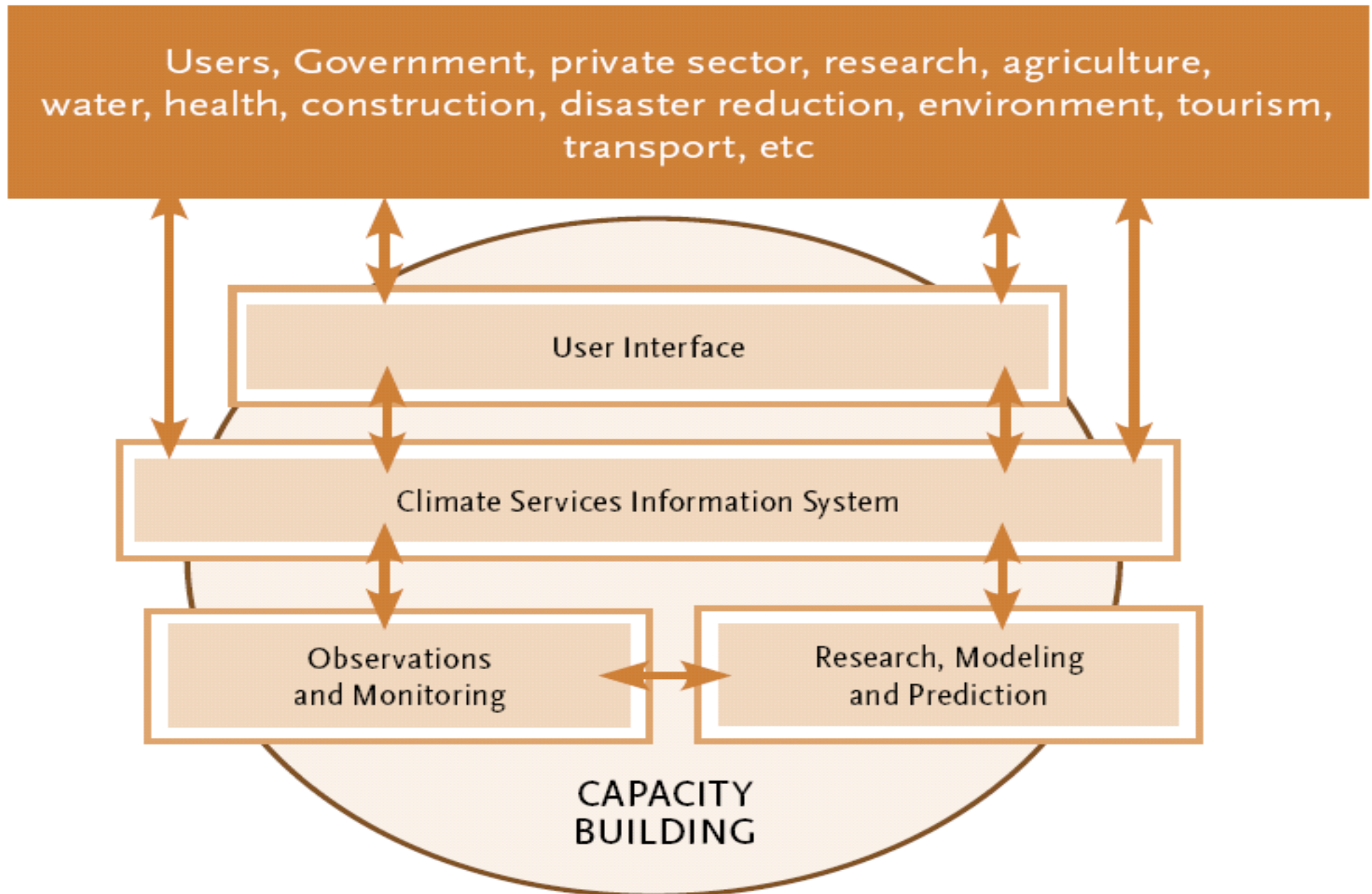
Requested Secretary-General

- to consider the GFCS needs in the budget proposal for 2014–2015;
- to include GFCS governance and implementation in the budget proposal for 2016-2019

GFCS implementation priorities

- **Governance, leadership and management** capacity to take the Framework forward;
- **Capacity development:**
 - Linking climate service users and providers.
 - Developing national capacity in developing countries.
 - **Strengthening regional climate capabilities**.
- Implementation of **high-profile projects** to address gaps across pillars and priority areas;
- Improving **climate observations** in data sparse areas;
- Promote **partnerships** among stakeholders for addressing gaps and priorities.

The pillars of the GFCS



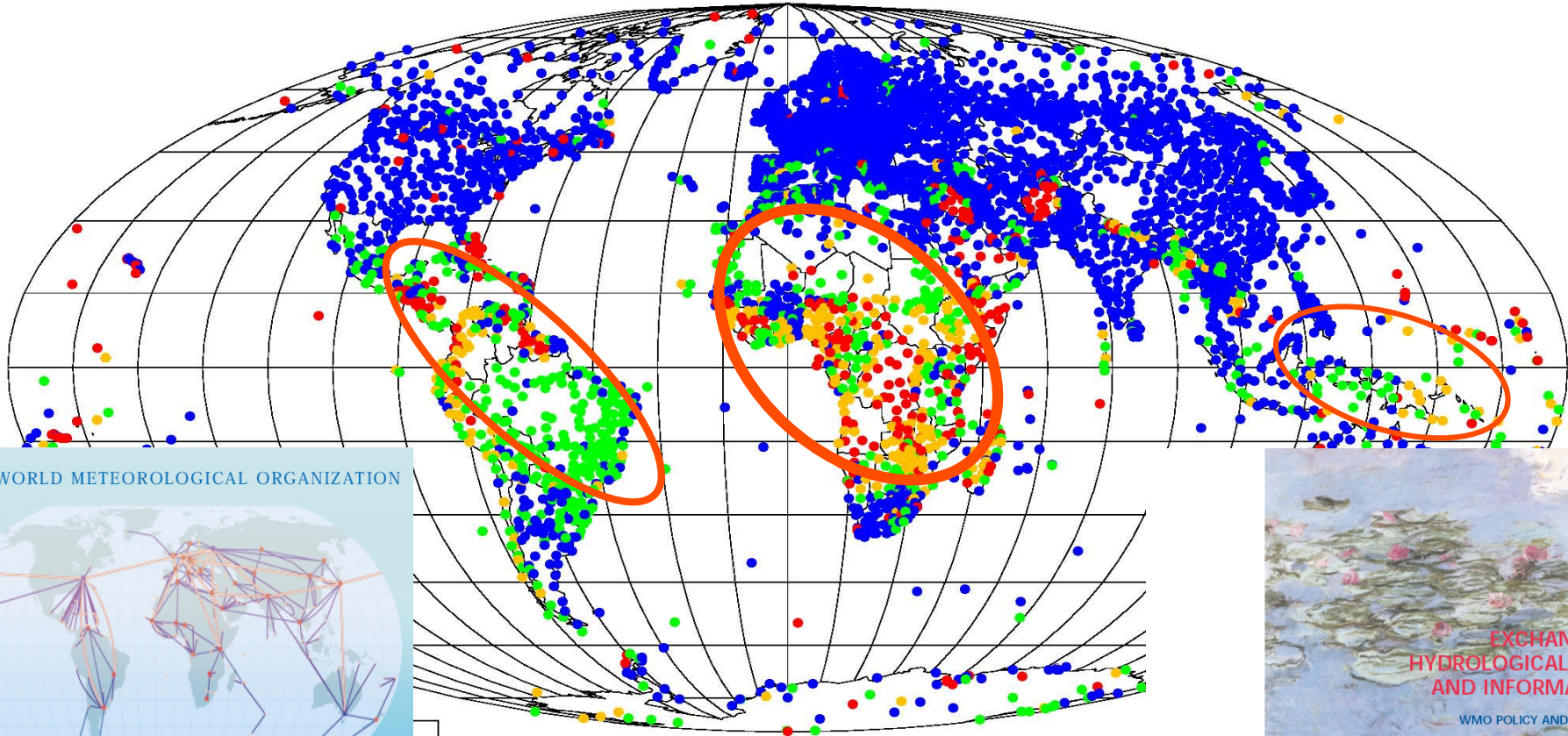
User Interface Platform





Observation and monitoring

Annual Global Monitoring 1-15/10/2008

SYNOP reports made at 00, 06, 12 and 18 UTC at RBSN stations



 WORLD METEOROLOGICAL ORGANIZATION



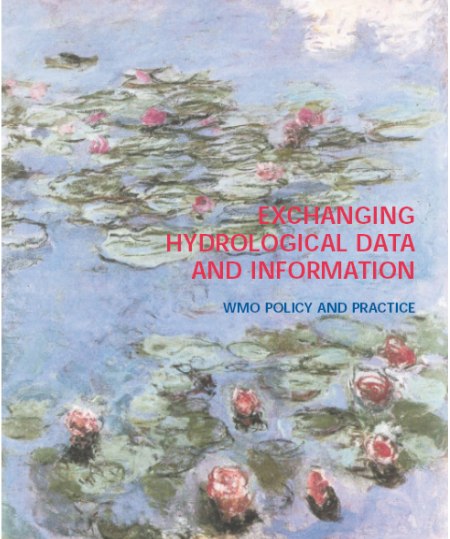
**EXCHANGING
METEOROLOGICAL
DATA**

GUIDELINES ON RELATIONSHIPS
IN COMMERCIAL METEOROLOGICAL ACTIVITIES
WMO POLICY AND PRACTICE

WMO - No. 837

The designation employed and the presentation of material in this publica-
whatsoever on the part of the WMO Secretariat concerning the legal statu-

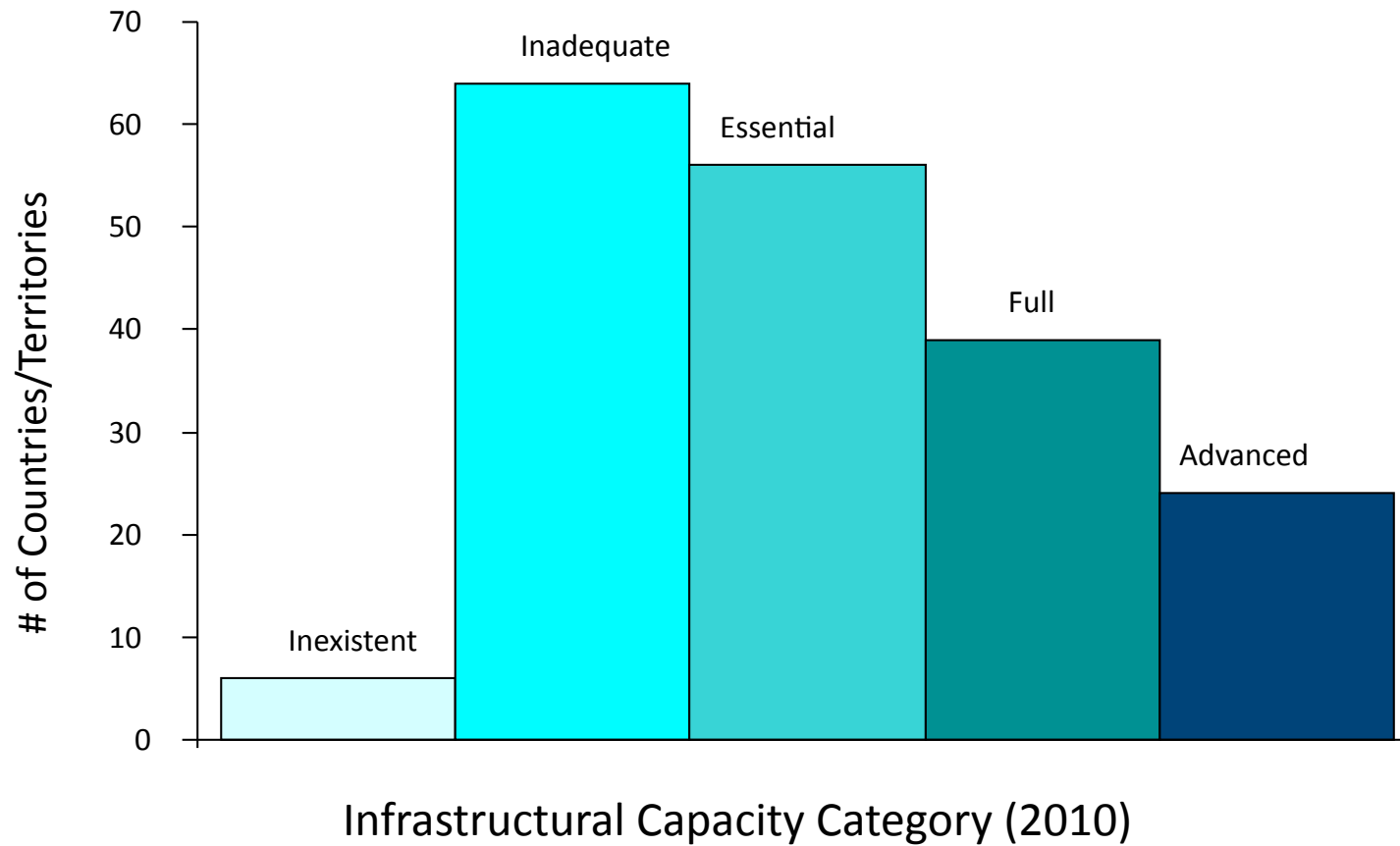


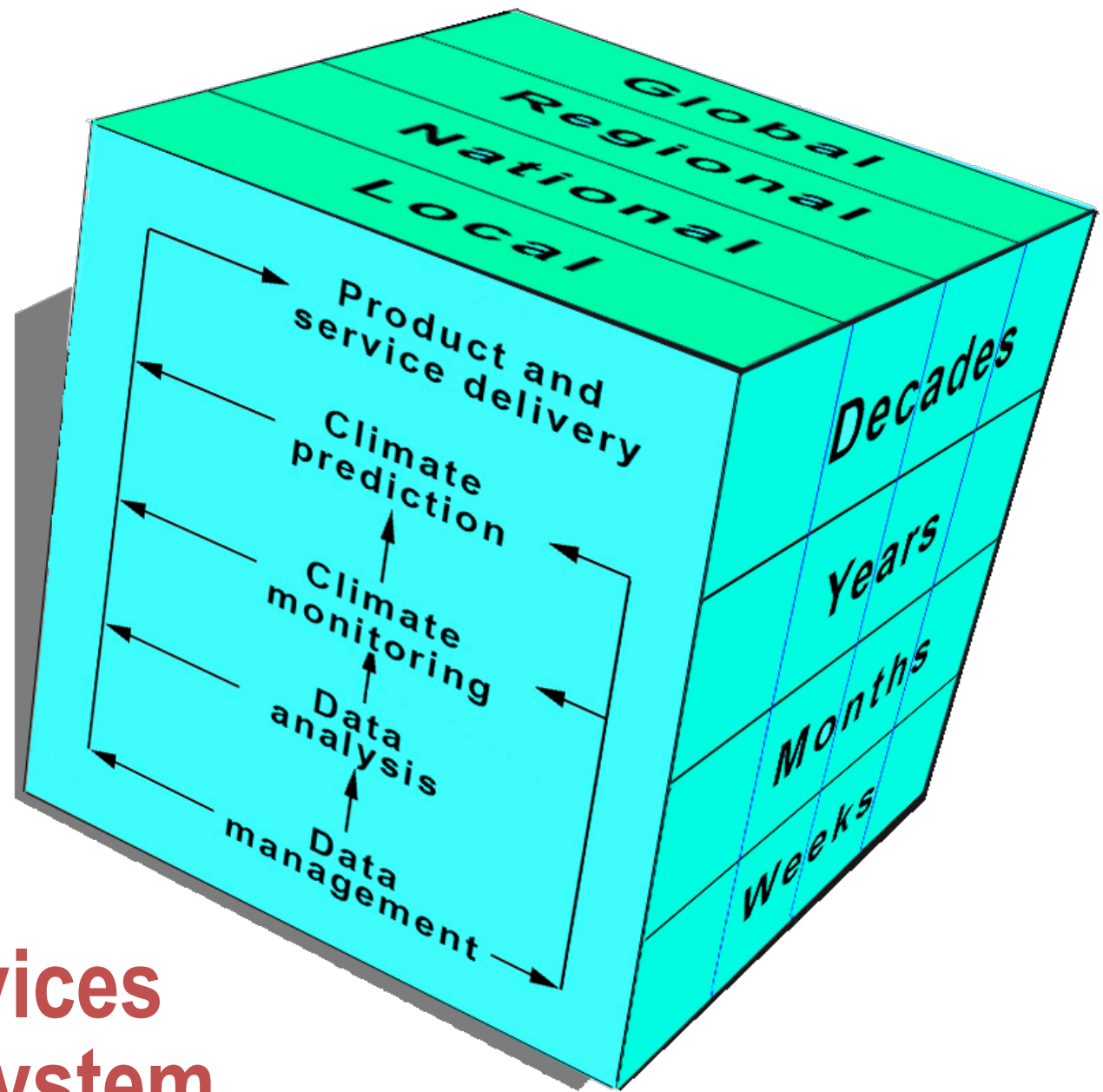


**EXCHANGING
HYDROLOGICAL DATA
AND INFORMATION**

WMO POLICY AND PRACTICE

Categories of Infrastructural Capacities





Climate Services Information System

Research, modelling and prediction

Objectives

- Improve **understanding** of Earth's Climate and assess impacts of climate variability and change on people, ecosystems and infrastructure
- Enhance **interaction** and cooperation between researchers and climate information users
- **Target research towards** developing and improving practical applications and information products in the four priority areas
- Enhance **science readiness** level for production of climate projections, predictions and **user-tailored climate** information products

Research, modelling and prediction

Gaps

- **Communication** between communities of scientists and practitioners
- **Last mile** between science products and service-oriented climate information
- **Lack of seamless suite of climate products** for contiguous time scales from weather to centennial climate projections
- **Limited or unknown predictability** for a range of key time-space scales
- Lack of comprehensive approaches and experience in dealing with **uncertainty**

Research, modelling and prediction

Grand challenges

- Provision of **skilful future climate information** on regional scales
- Global and regional **sea-level rise**
- Cryosphere **response** to climate change
- **Improved understanding of interactions** of clouds, aerosols, precipitation, and radiation and their contributions to climate sensitivity
- Past and future changes in water availability
- **Attribution and prediction** of extreme events

Research, modelling and prediction

Initial activities

- **Strengthening planning and coordination** of present and future research strategies and virtual forums supporting them, engaging sponsors
- **Bridging communities** producing experimental and regular climate information
- **Research in support of core climate products** including subseasonal to seasonal predictions, decadal and centennial predictions
- **Research on climate observations**, change detection, and development of climate data records

WMO: Joint Climate and Weather Research

- Executive Council Task Team on Research Aspects of an Enhanced Climate, Weather, Water and Environmental Prediction Framework, 2009
 - **Coordinate and Accelerate Prediction Research**: develop a unified approach to multidisciplinary weather, climate, water and environmental prediction research, step up high-performance computing investments to accommodate the increasing complexity and detail of models, accelerate the development, validation and use of prediction models
 - **Link Research, Operation and Service Delivery**: Develop closer linkages between research, operations and users through Forecast Demonstration Projects (FDPs) that accelerate technology transfer

Seamless prediction

C. Core Service Delivery Mechanisms For Forecasts/Predictions



A. Mix of Research & Operations



Nowcasts Day to Month Weather Forecasts Seasonal/Inter-annual Prediction Decadal Prediction Decadal To Century

Time Scale Dependence Of Three Different Characteristics Of Weather, Climate, Water and Environmental Prediction Activities

Subseasonal to Seasonal (S2S)

Project

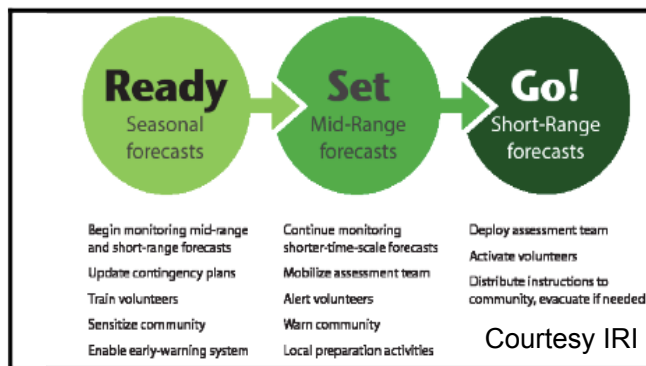
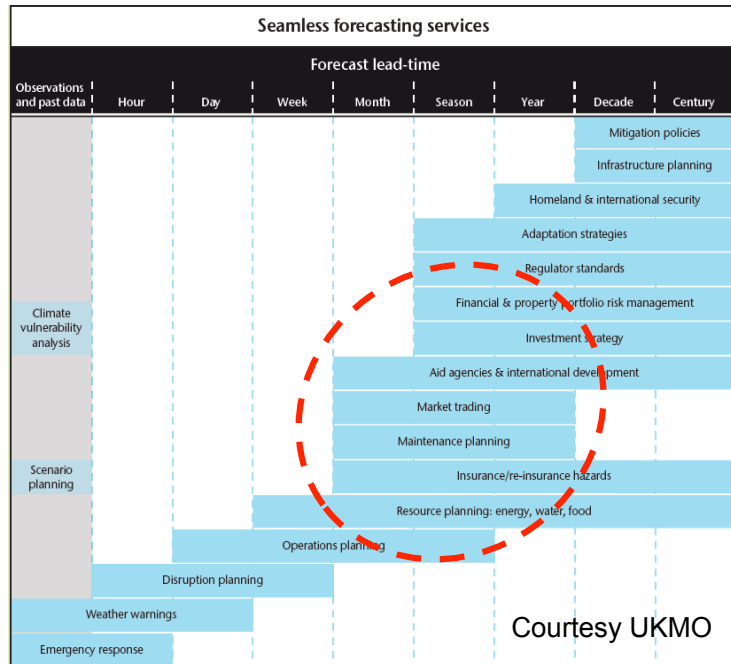
Objectives:

- To improve forecast skill and understanding on the S2S timescale with emphasis on High Impact Weather
- To promote uptake by operational centres and exploitation by the applications community
- To capitalize on the expertise of the weather and climate research communities to address GFCS priorities

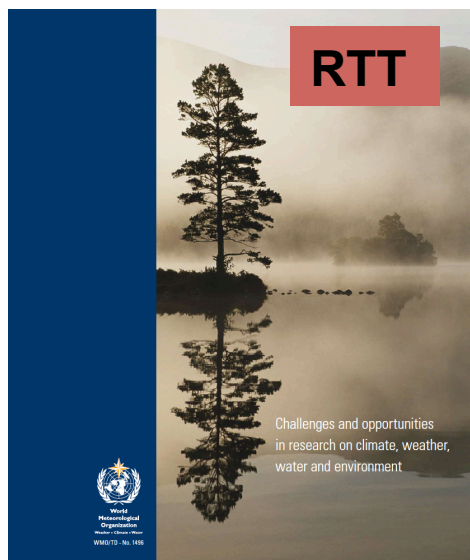
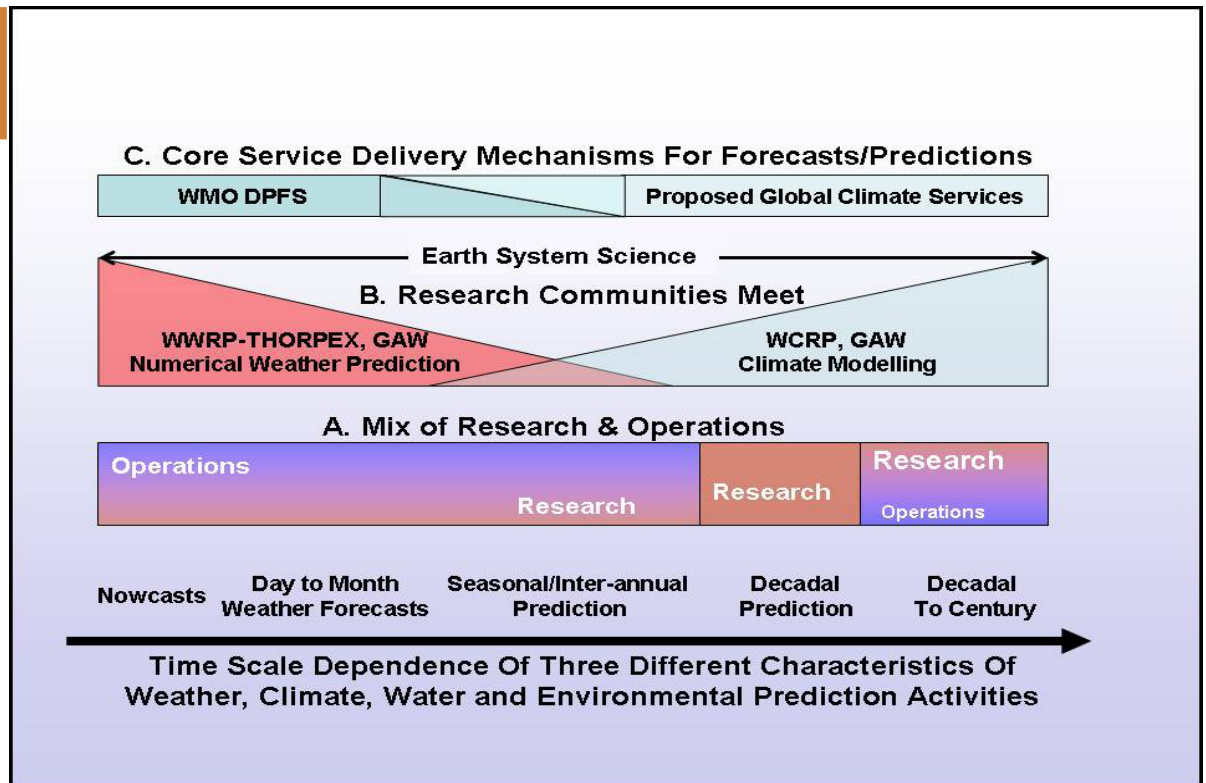
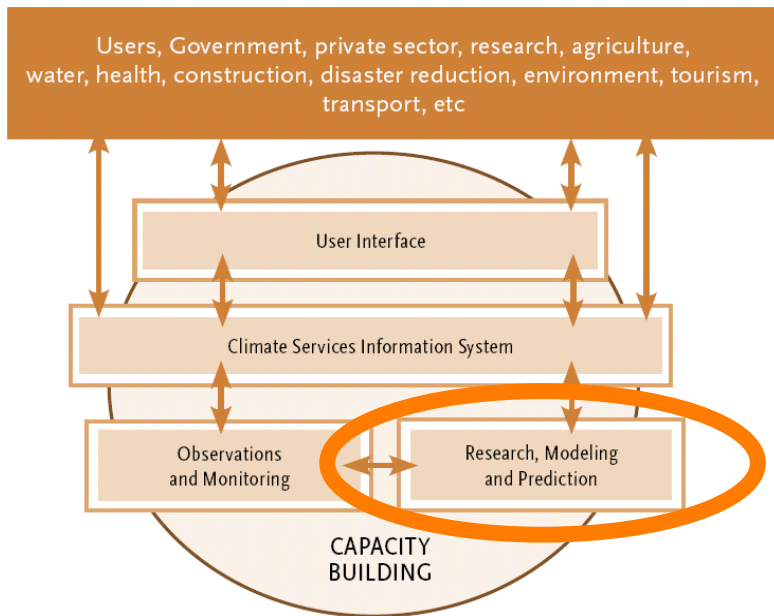
Implementation underway: TIGGE-like multi-model data base being established

Demonstration projects on extreme events (e.g. 2010 Russian heatwave, floods in Pakistan in 2010 and Australia in 2011, and 2012 European cold spell)

Project Office: NIMR, KMA, Jeju, Korea



WCRP and GFCS



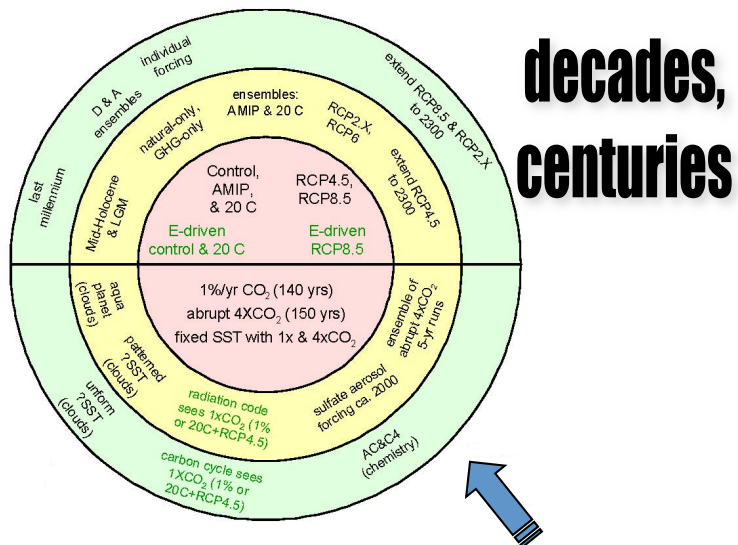
Opportunity and occasion for developing elements of a *seamless prediction technology*:

- Increase of climate information availability
- Work on unknowns in 4 priority areas of GFCS (food & agriculture, H2O, health, disaster reduction)
- Applied research

Major WCRP Climate Prediction & Projection Experiments

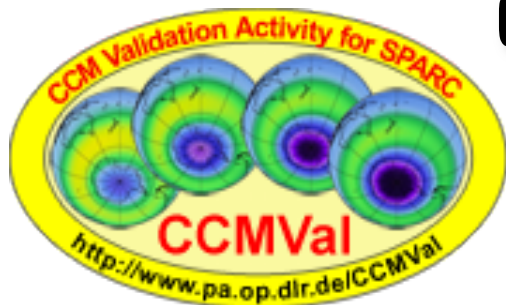
Coupled Model Intercomparison Experiment 5 – CMIP5 → **IPCC AR5**

Climate-system Historical Forecast Project - CHFP
seasonal sea ice, stratosphere



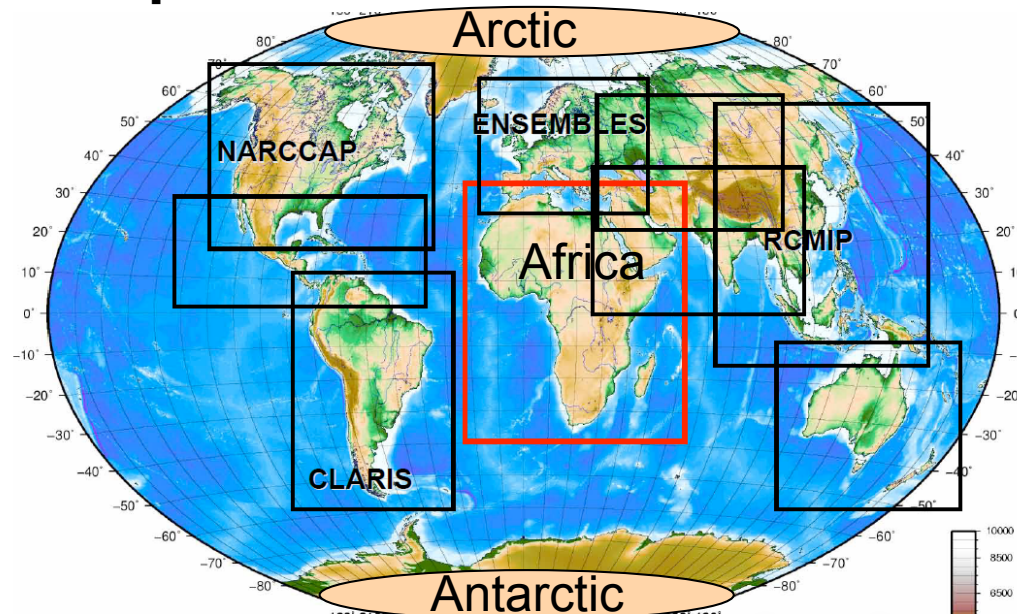
decades, centuries

Chemistry-Climate Model Validation



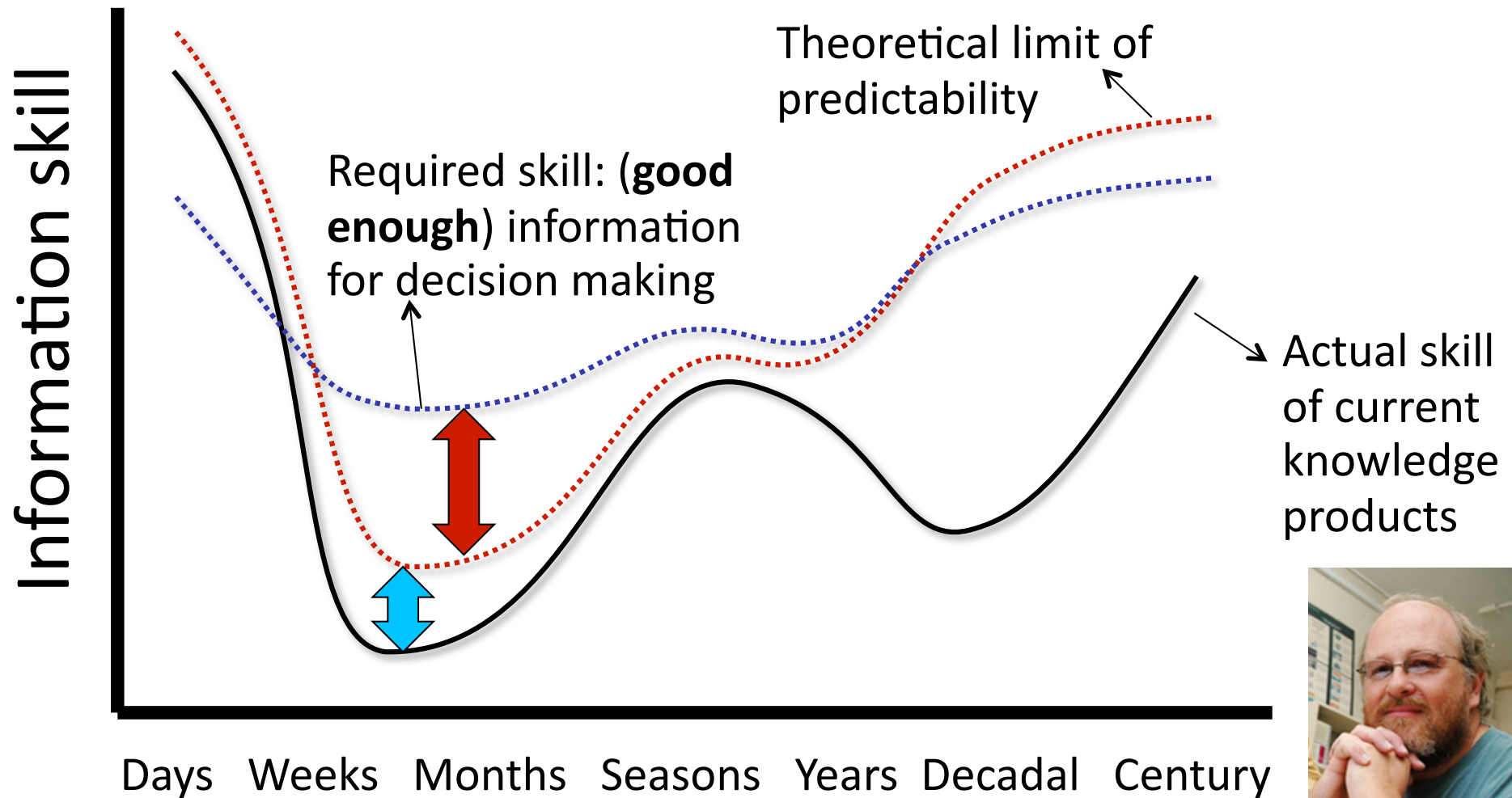
chemistry, ozone

Coordinated Regional Downscaling Experiment – CORDEX → **IPCC AR5**



regional

“For a given spatial scale, location, and sector, there is a need to provide relevant information for informing a decision space about proximity to sector thresholds in a risk management framework



(B. Hewitson)

WCRP Working Group on Regional Climate

The WGRC's mission is to coordinate regional climate research and science-based knowledge development for decision makers



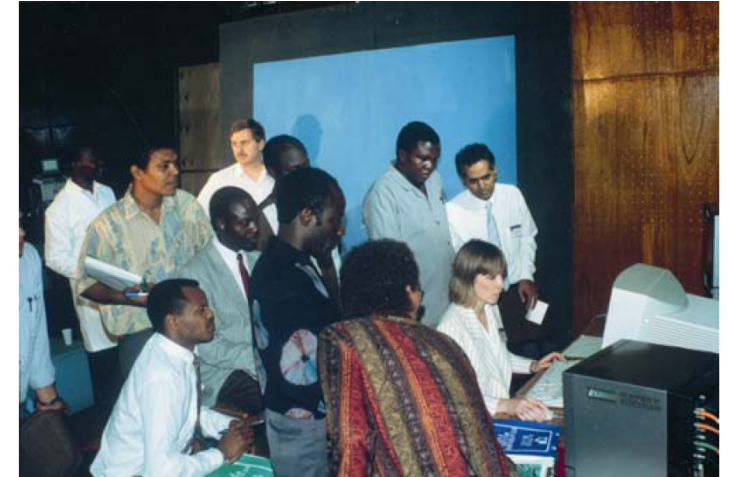
Co-Chairs:

Clare Goodess, ENV UEA United Kingdom

Bruce Hewitson, CSAG UCT South Africa

Capacity development

- **Strengthening of institutional and technical infrastructure**
- **Human resources development & renewal**
- **Continuing education and training**
- **Special needs of LDCs**
- **Gender issues**



GFCS: quo vadis?

Next steps: GFCS 2013



GFCS early implementation



GFCS pilot projects in Burkina Faso, Mali and Niger — with Botswana, Chad, Nepal and Spain under preparation

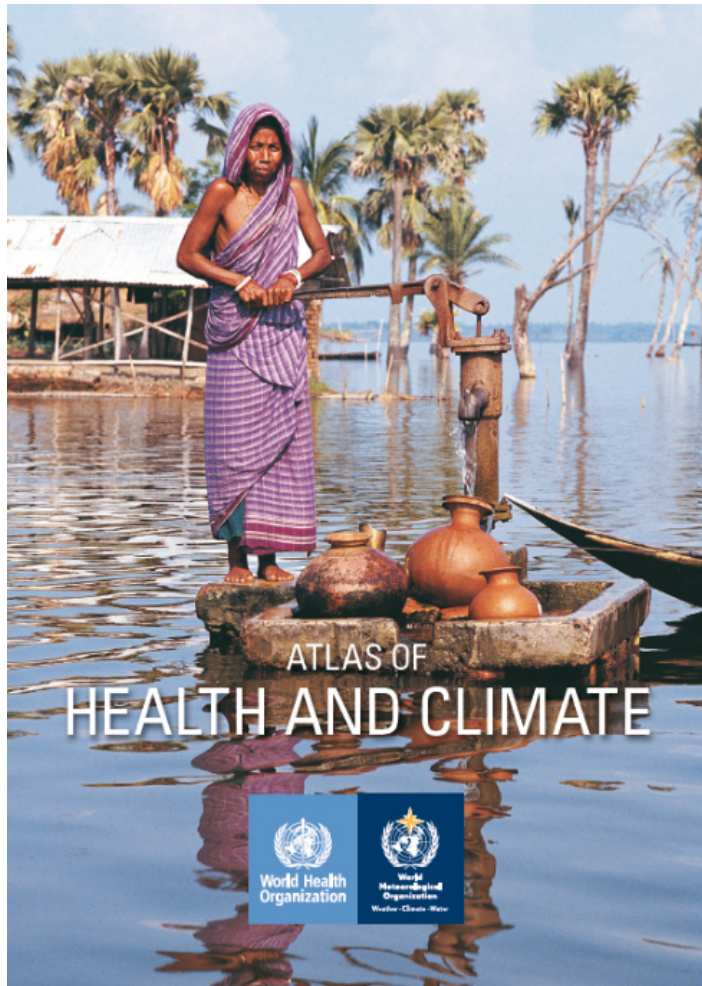


Bangkok, 8–10 October 2012

Through workshops, GFCS fosters development of climate services at national level

Barbados, 7-9 May 2013

GFCS early implementation



An aerial photograph showing a coastal area that has been severely impacted by a disaster. In the center, a large, multi-story house with a green roof stands amidst a sea of debris. To the left and right of the house, several sailboats and motorboats are scattered, some appearing damaged or overturned. The ground is covered in mud, wood, and other wreckage. A black pickup truck and an orange tractor are also visible near the house. The overall scene depicts significant destruction and displacement.

Better climate services are needed now to respond to the global challenges of disaster prevention and mitigation, management of water resources, food security and health



Thank you for your attention