

Climate Services Information System

A Foundational Pillar of the Global Framework for Climate Services
to support Climate Risk Management

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

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Climate Prediction and Adaptation Branch
Climate and Water Department

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WMO OMM

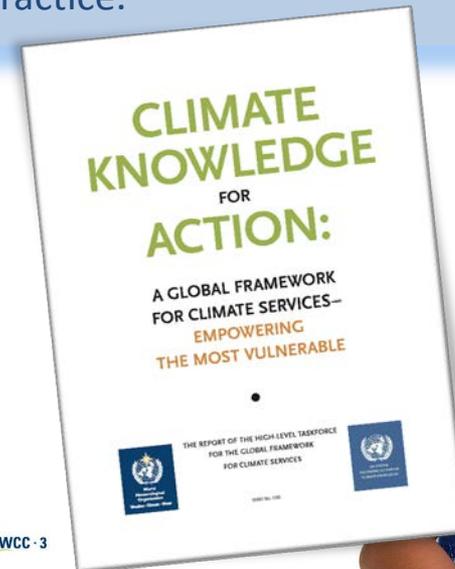
World Meteorological Organization
Organisation météorologique mondiale

Climate Service Information System (CSIS)

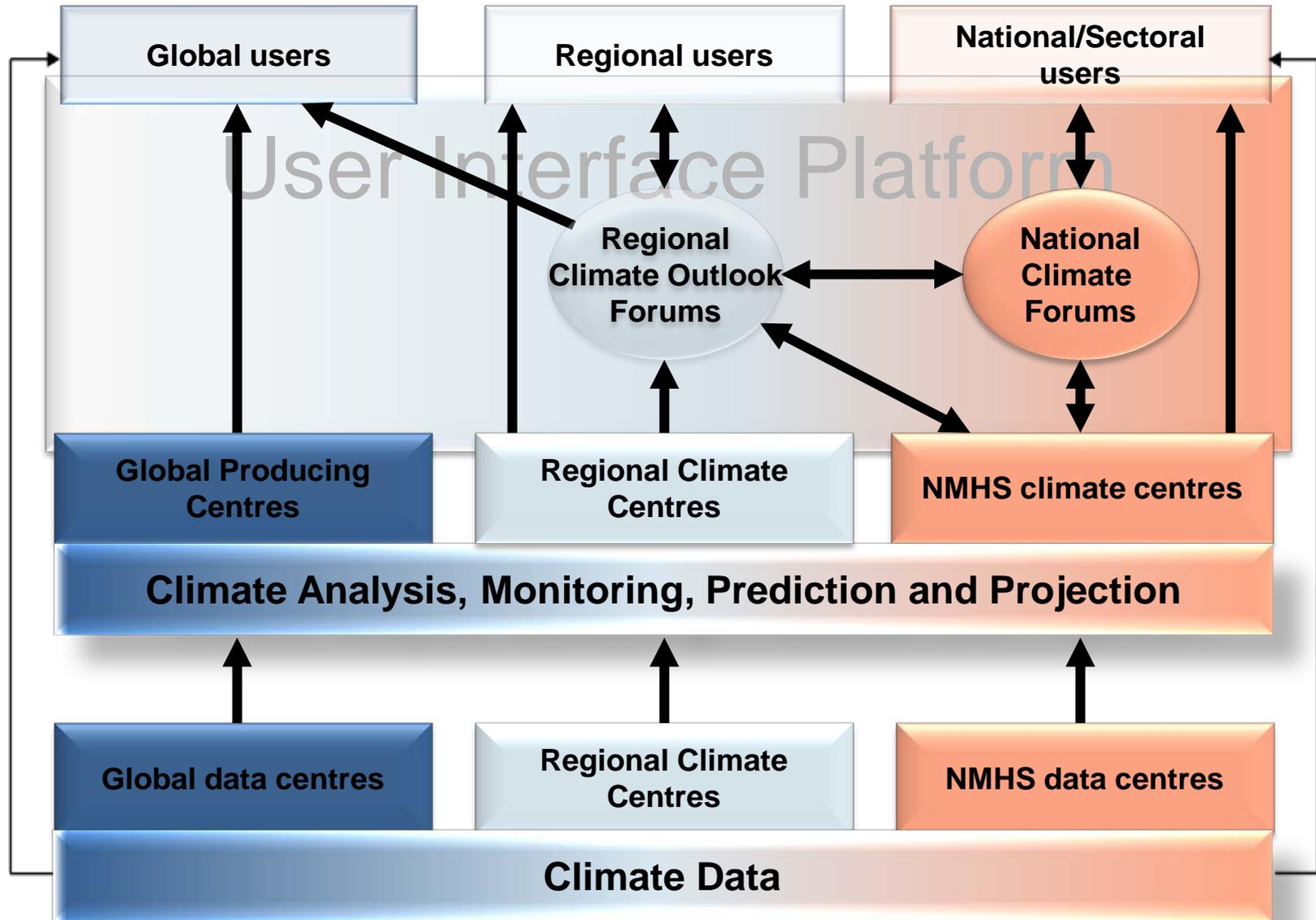
- The CSIS is the component of the GFCS most concerned with the generation and dissemination of climate information.
- It is the ‘operational centre’ of the GFCS. It deals with climate data, monitoring, prediction (monthly, seasonal, decadal) and projection (centennial) activities.
- “CSIS is the system needed to collect, process and distribute climate data and information according to the needs of users and according to the procedures agreed by governments and other data providers.” (*High Level Taskforce on GFCS*)

GFCS Goal:

Enable better management of the risks of climate variability and change and adaptation to climate change at all levels, through development and incorporation of science-based climate information and prediction into planning, policy and practice.

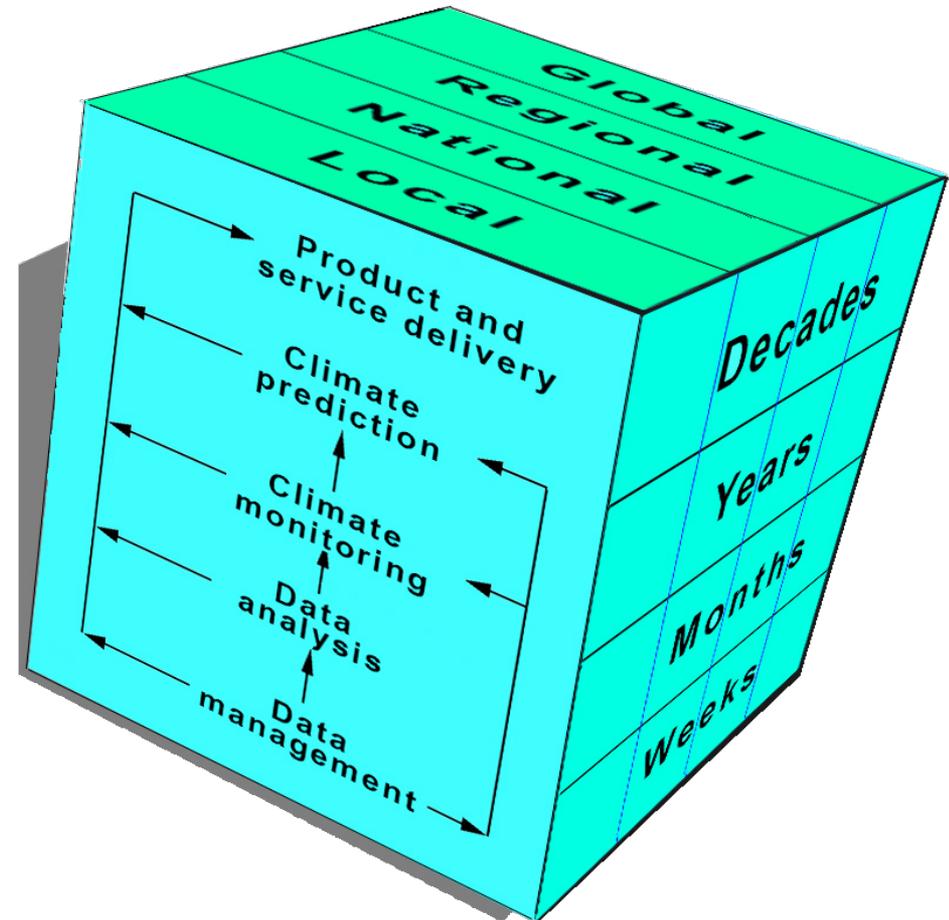


CSIS Infrastructure Layout



CSIS Implementation Strategy

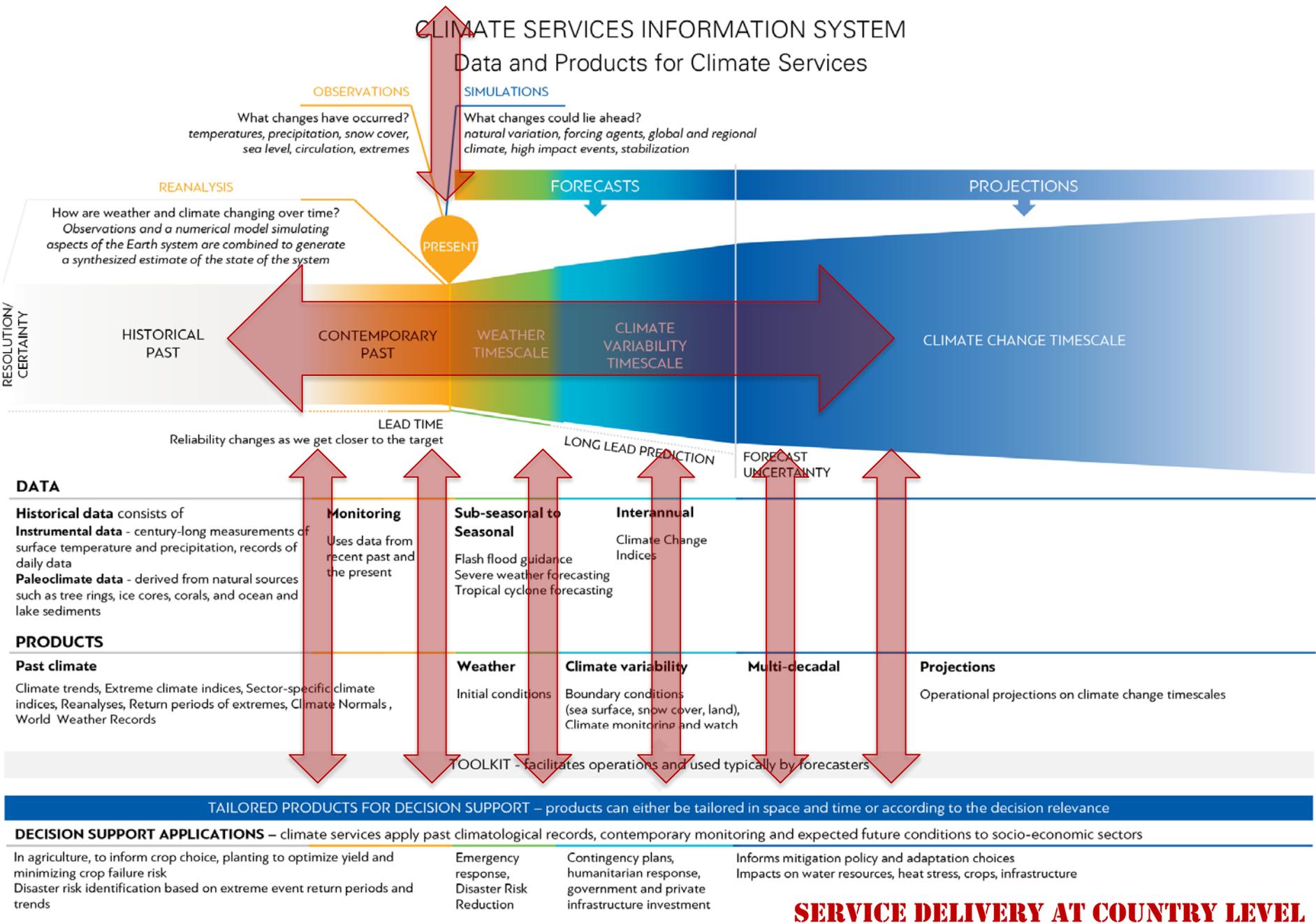
- Developing and implementing CSIS architecture
 - Functional descriptions and product development (Data/Monitoring/Prediction/Projection)
 - Operational infrastructure: GPCs, RCCs, RCOFs, NMHSs, NCOFs/NCFs
 - WMO Technical Reference/GDPFS (CCI/CBS)
 - Climate Services Toolkit
 - Capacity Development



CSIS structure

What does the CSIS consist of and
what does it do?

INDICATORS FOR GLOBAL POLICY PROCESSES, E.G. GLOBAL STOCKTAKE, SDG 13



CLIMATE SERVICES INFORMATION SYSTEM

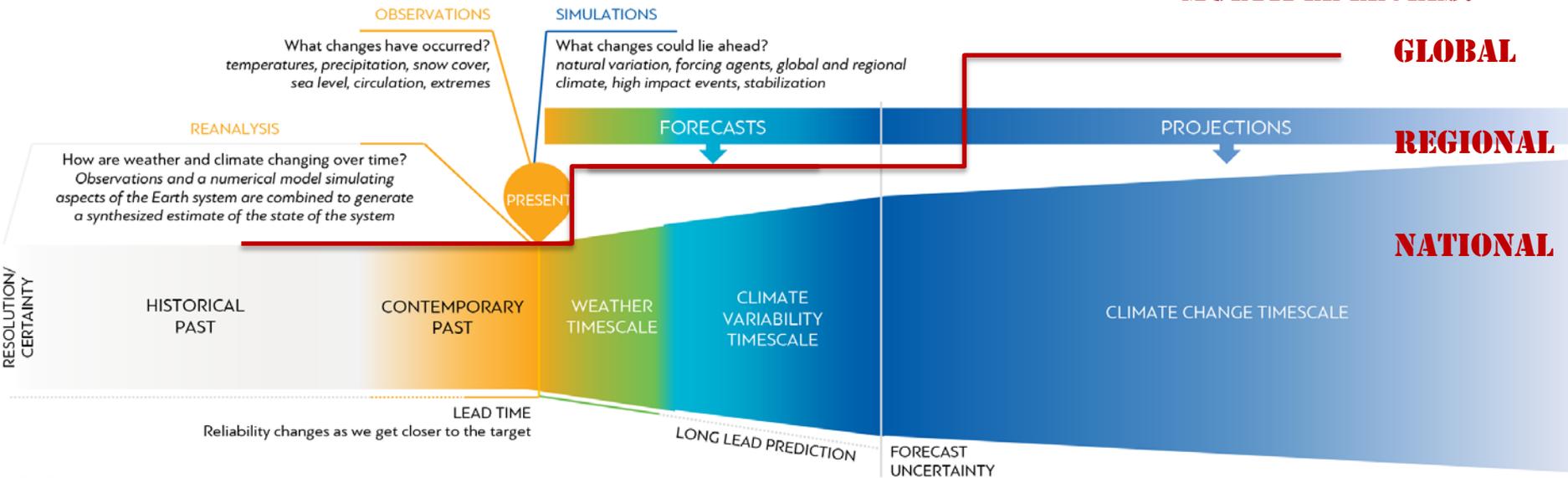
Data and Products for Climate Services

**OUTPUTS FLEXIBLY
GENERATED AT
MULTIPLE LEVELS:**

GLOBAL

REGIONAL

NATIONAL



DATA

Historical data consists of
Instrumental data - century-long measurements of surface temperature and precipitation, records of daily data
Paleoclimate data - derived from natural sources such as tree rings, ice cores, corals, and ocean and lake sediments

Monitoring
 Uses data from recent past and the present

Sub-seasonal to Seasonal
 Flash flood guidance
 Severe weather forecasting
 Tropical cyclone forecasting

Interannual
 Climate Change Indices

PRODUCTS

Past climate
 Climate trends, Extreme climate indices, Sector-specific climate indices, Reanalyses, Return periods of extremes, Climate Normals, World Weather Records

Weather
 Initial conditions

Climate variability
 Boundary conditions (sea surface, snow cover, land),
 Climate monitoring and watch

Multi-decadal

Projections
 Operational projections on climate change timescales

TOOLKIT - facilitates operations and used typically by forecasters

TAILORED PRODUCTS FOR DECISION SUPPORT – products can either be tailored in space and time or according to the decision relevance

DECISION SUPPORT APPLICATIONS – climate services apply past climatological records, contemporary monitoring and expected future conditions to socio-economic sectors

In agriculture, to inform crop choice, planting to optimize yield and minimizing crop failure risk
 Disaster risk identification based on extreme event return periods and trends

Emergency response,
 Disaster Risk Reduction

Contingency plans, humanitarian response, government and private infrastructure investment

Informs mitigation policy and adaptation choices
 Impacts on water resources, heat stress, crops, infrastructure

CLIMATE SERVICES INFORMATION SYSTEM

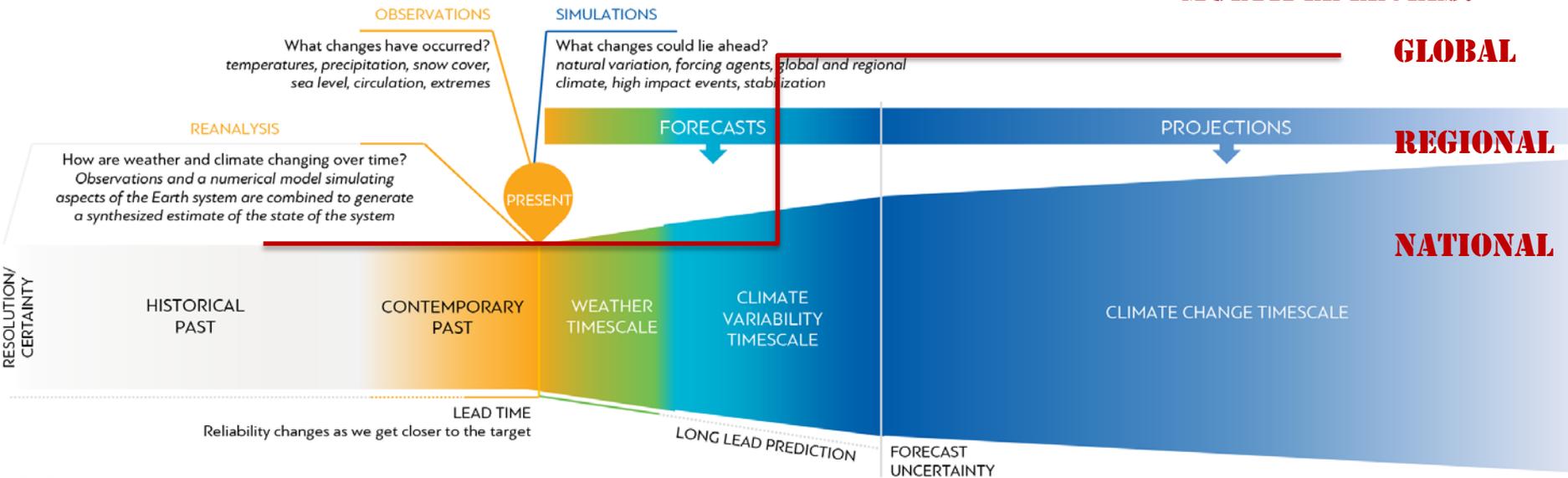
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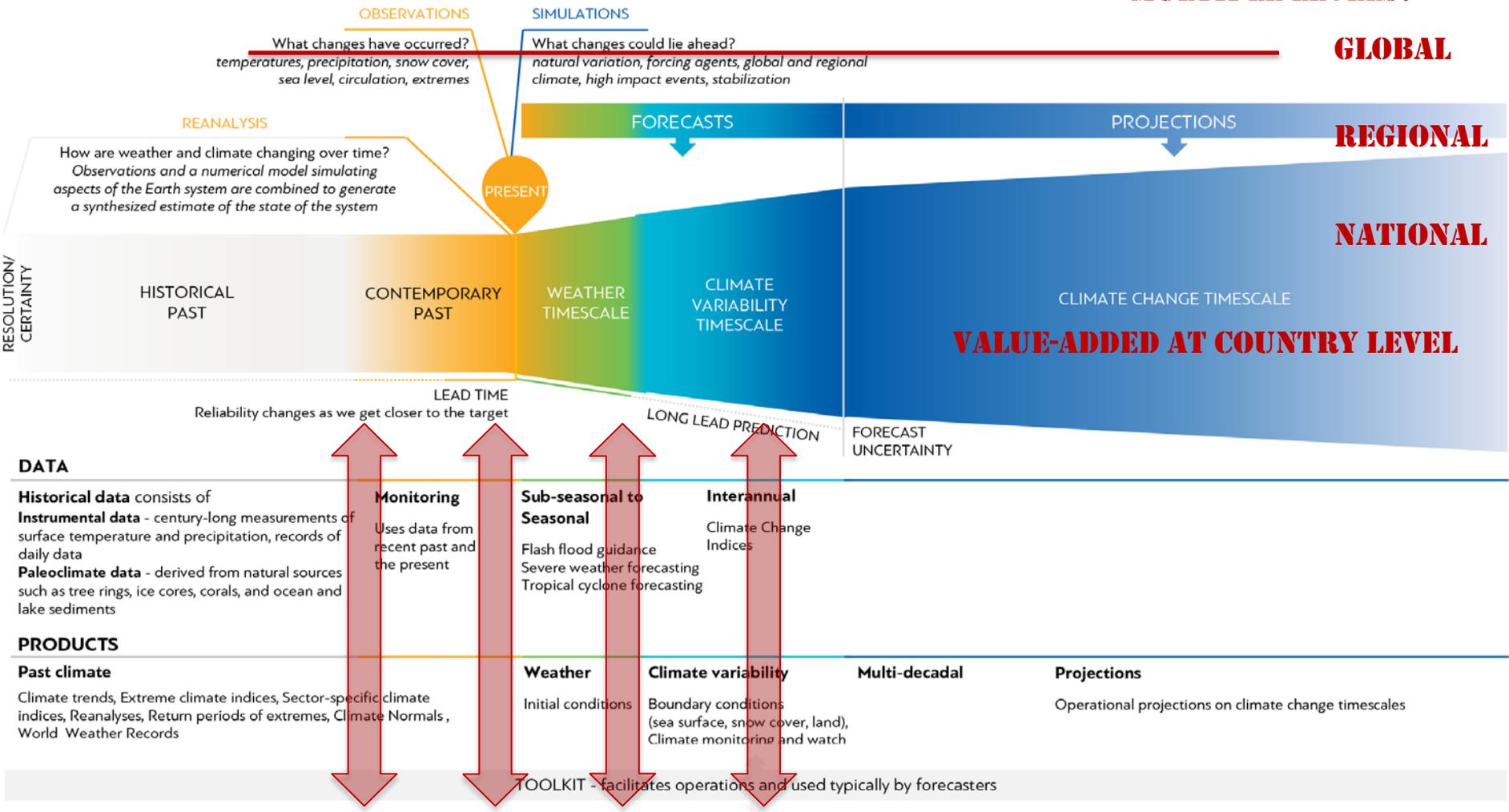
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VALUE-ADDED AT COUNTRY LEVEL



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SERVICE DELIVERY AT COUNTRY LEVEL

Status

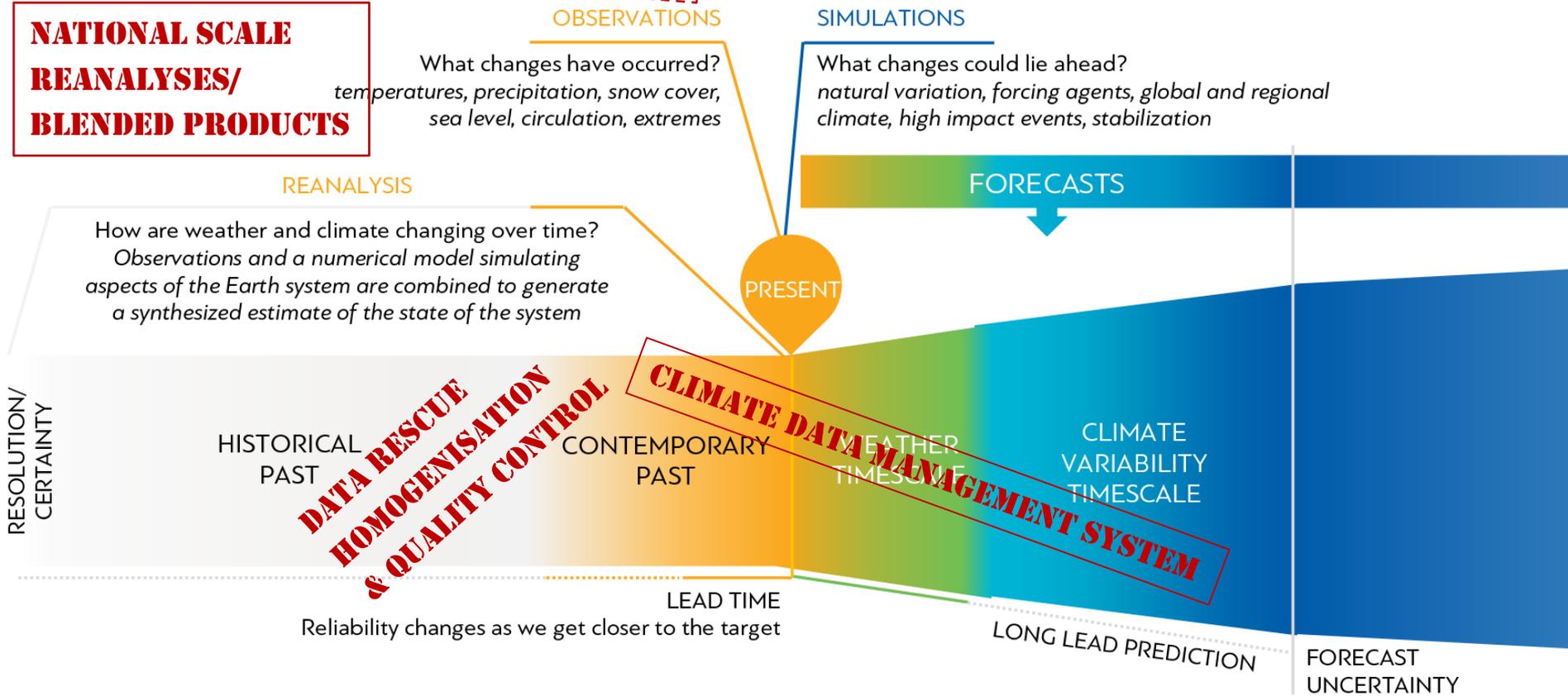
What support mechanisms are in place and what still needs to be done?

STATION INVENTORY AND METADATA
REVIEW OF REQUIREMENTS
IMPLEMENTATION AND MAINTENANCE PLAN

NATIONAL SCALE
**REANALYSES/
 BLENDED PRODUCTS**

CLIMATE SERVICES INFORMATION SYSTEM

Data and Products for Climate Services



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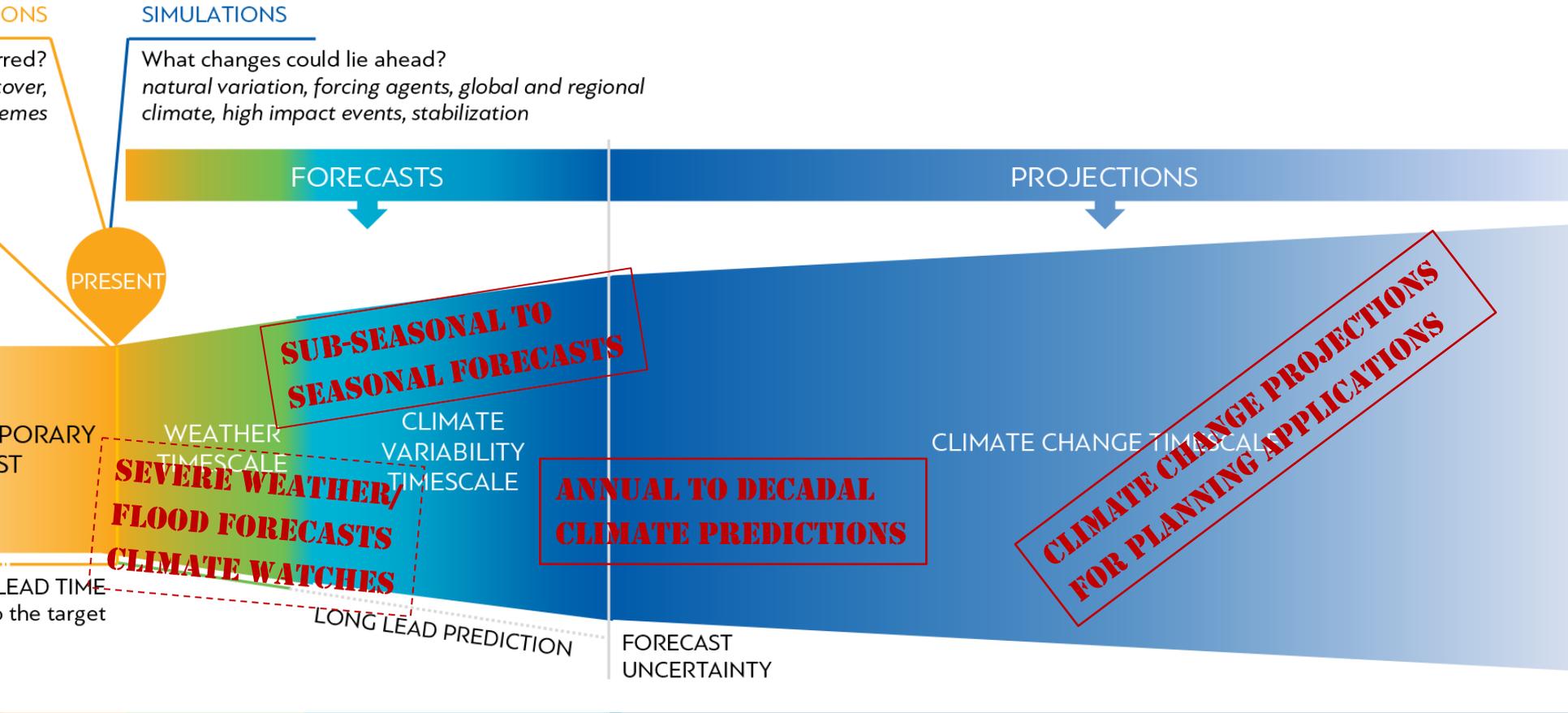
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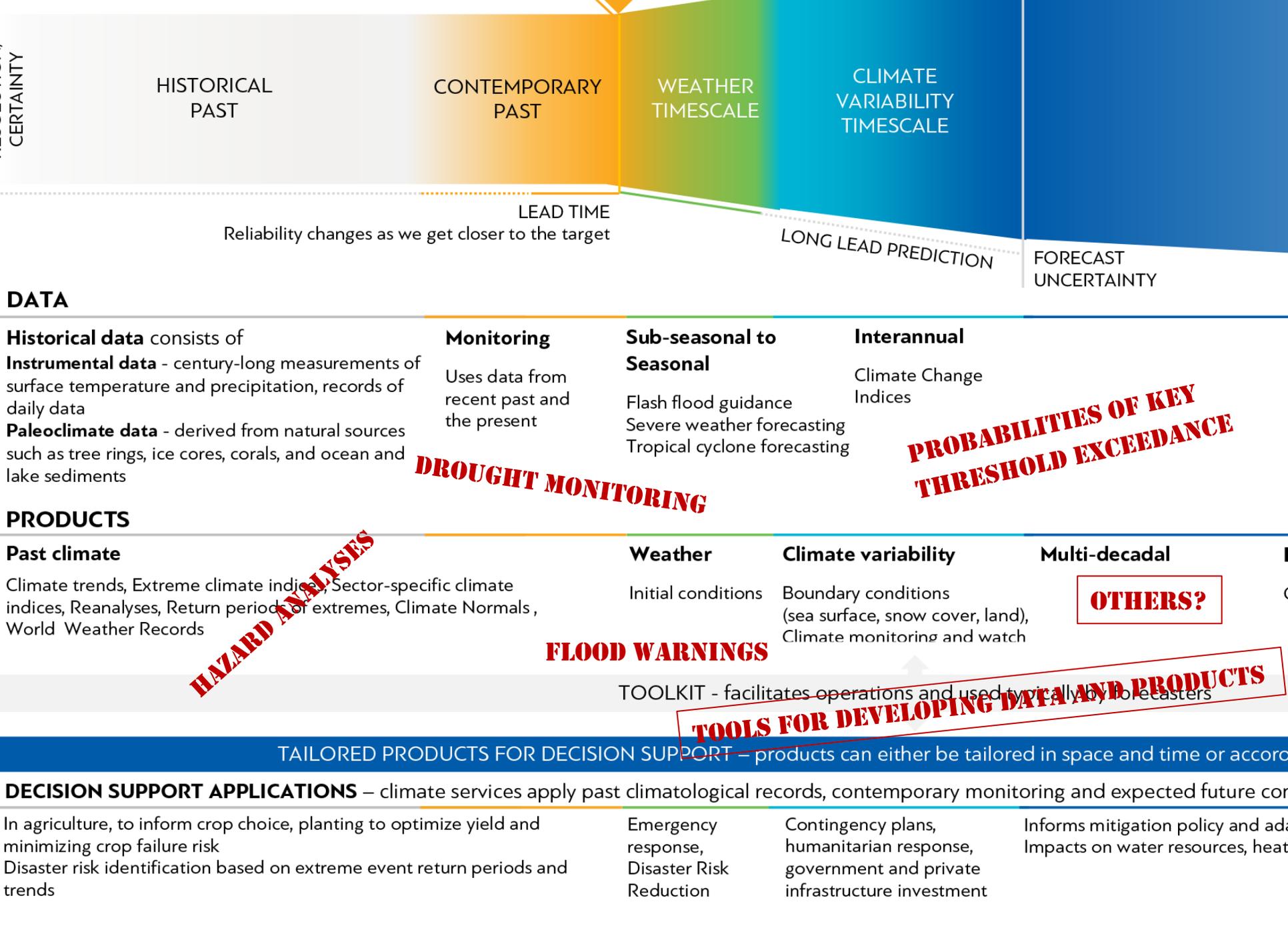


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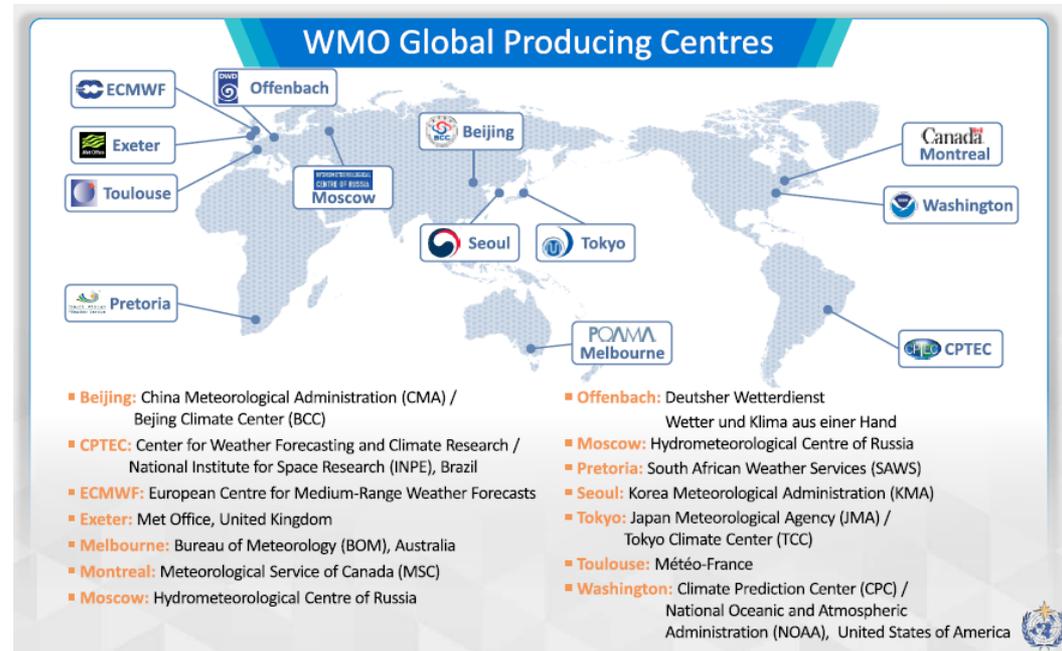
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CSIS implementation status

Global Producing Centres

- GPCs for Long Range Forecasts (GPCs-LRF)
 - 13 GPCs-LRF designated so far
 - Two Lead Centres: LC-LRFMME and LC-SVSLRF
- GPCs-LRF adhere to commonly defined standards – aiding consistency and usability of output:
 - a fixed forecast production cycle
 - a standard set of forecast products
 - WMO-defined verification standards
- GPCs for Annual to Decadal Climate Prediction (GPCs-ADCP)
 - LC-ADCP
- GPCs for Data ? Monitoring ?

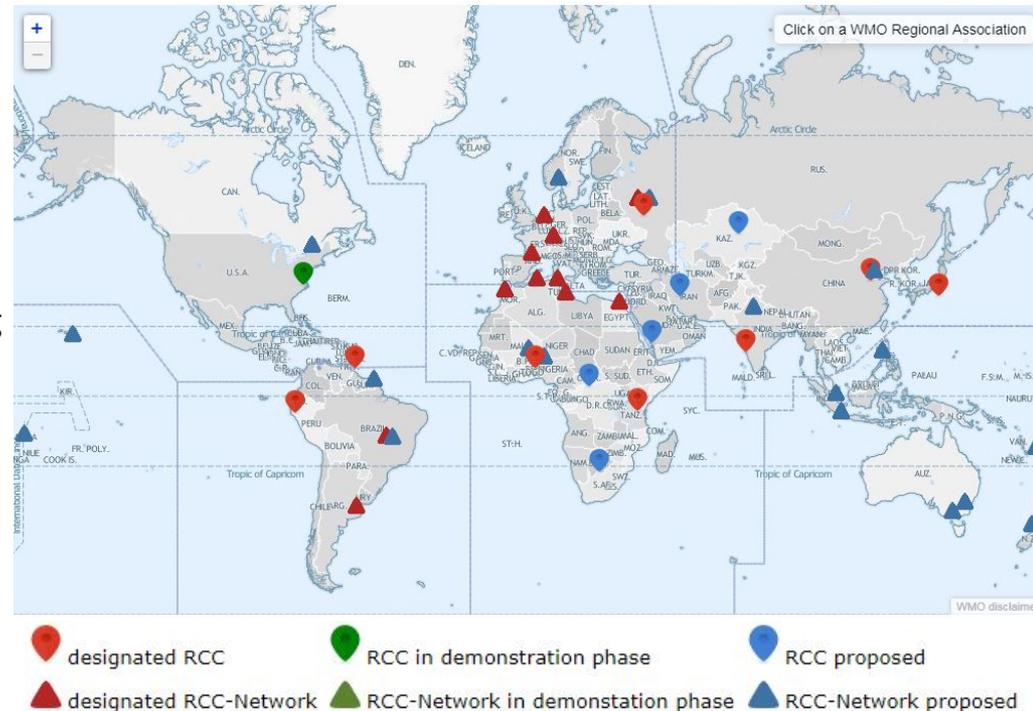


Links to GPCLRFs:

http://www.wmo.int/pages/prog/wcp/wcasp/clips/producers_forecasts.html

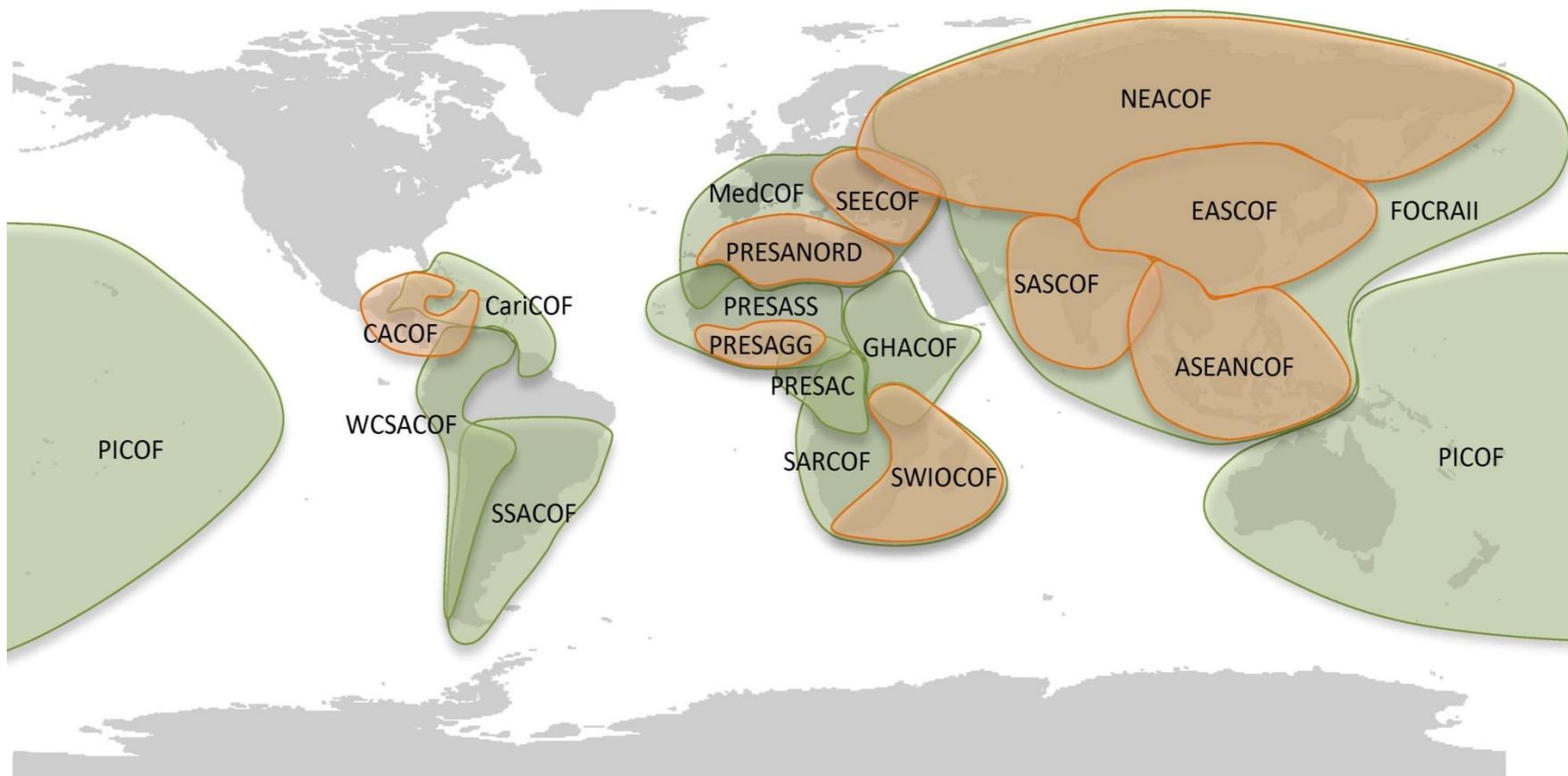
Regional Climate Centres (RCCs)

- RCCs provide regional climate products in support of regional and national climate activities
- Mandatory Functions:
 - **Operational Activities for LRF**
 - Operational Activities for Climate Monitoring
 - Operational Data Services, to support operational LRF and climate monitoring
 - Training in the use of operational RCC products and services
- Highly Recommended Functions:
 - Climate prediction and projection
 - Non-operational data services
 - Coordination functions
 - Training and capacity building
 - Research and development
- Two modes of Implementation: fully self-contained RCCs or distributed-function RCC-Networks



<http://www.wmo.int/pages/prog/wcp/wcasp/rcc/rcc.php>

RCOFs Worldwide



<https://public.wmo.int/en/our-mandate/climate/regional-climate-outlook-products>



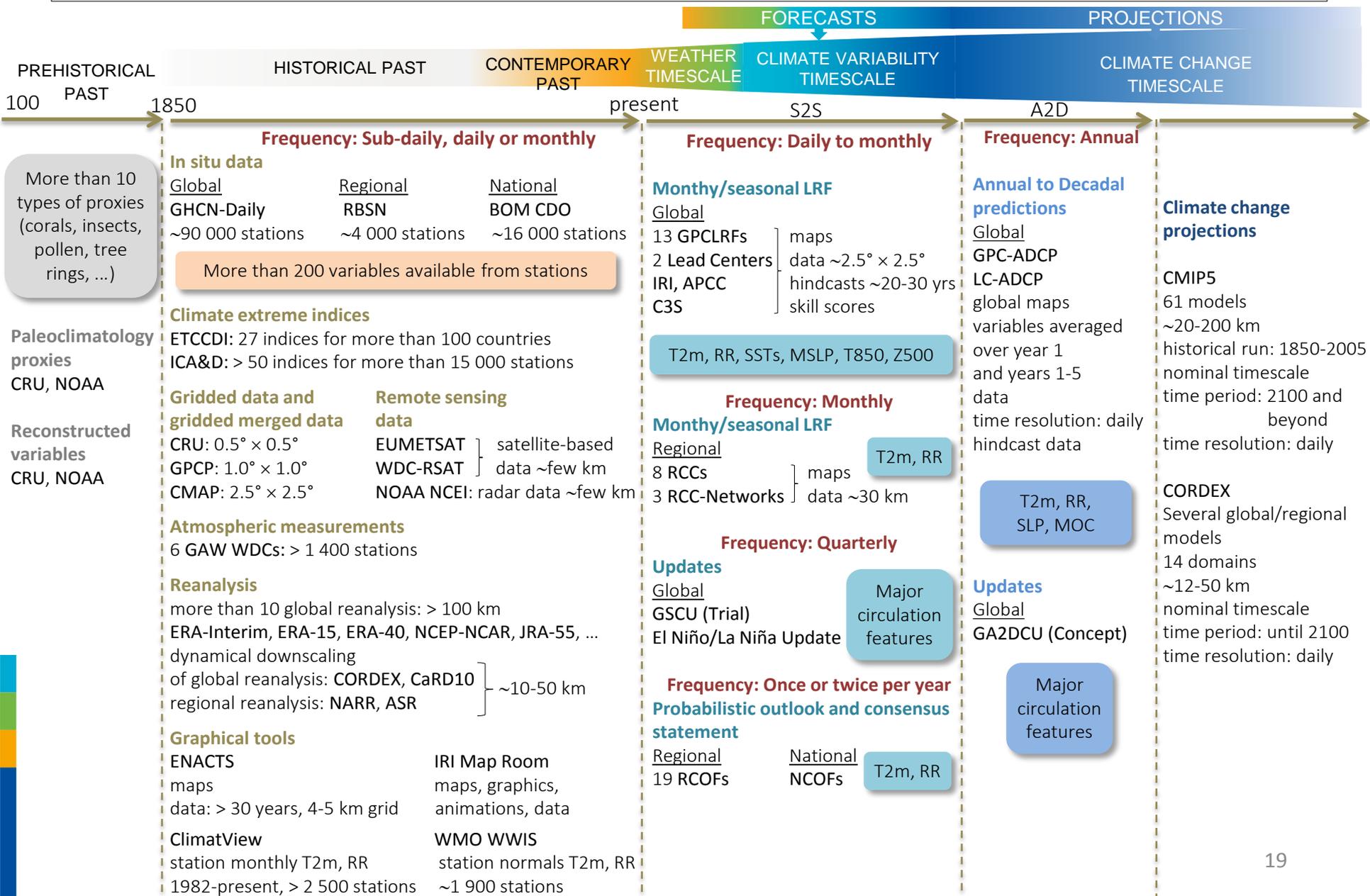
Resolution 60 (Cg-17)

WMO Policy for the International Exchange of Climate Data and Products to Support the Implementation of the GFCS

- Extracts:
 - To adopt the policies and practices, including the guidelines, of Resolution 40 (Cg-XII) and Resolution 25 (Cg-XIII) for the exchange of GFCS relevant data and products;
 - Climate data and products covered by Resolution 40 (Cg-XII) and the GFCS relevant data and products subsumed under Resolution 25 (Cg-XIII) will continue to be governed by these resolutions;
 - **GFCS relevant data and products from the WMO WDCs, GPCLRFs, RCCs, RCOFs and the ICSU WDS**, as well as from the framework of the GCOS ECVs (Atmospheric, Oceanic and Terrestrial), will constitute an essential contribution to the Framework and therefore should be made accessible among Members, **in particular through the GFCS CSIS, on a free and unrestricted basis**;

Current status of availability and access to data and products from CSIS entities

Availability of data and products (Non-exhaustive list)



WMO Commission for Climatology (CCI)

Implementation Coordination Team on CSIS (ICT-CSIS)

- A key component of CCI working structure (re-established in April 2018) with links to all of its Focus Areas as well as other Technical Commissions and Co-sponsored programmes
- Activities
 - Development of Climate Services Toolkit
 - Development of CSIS Technical Reference Manual
 - International Workshop on CSIS Operations and Coordination (21-24 Mar 2017, Nanjing, China)
 - Support national-level actions on CSIS implementation, including deployment of CST
 - Identification of Priority Needs for GFCS/CSIS implementation
 - Coordination of National CSIS Focal Points
 - Active engagement with all stakeholders

Regional approach for CSIS implementation

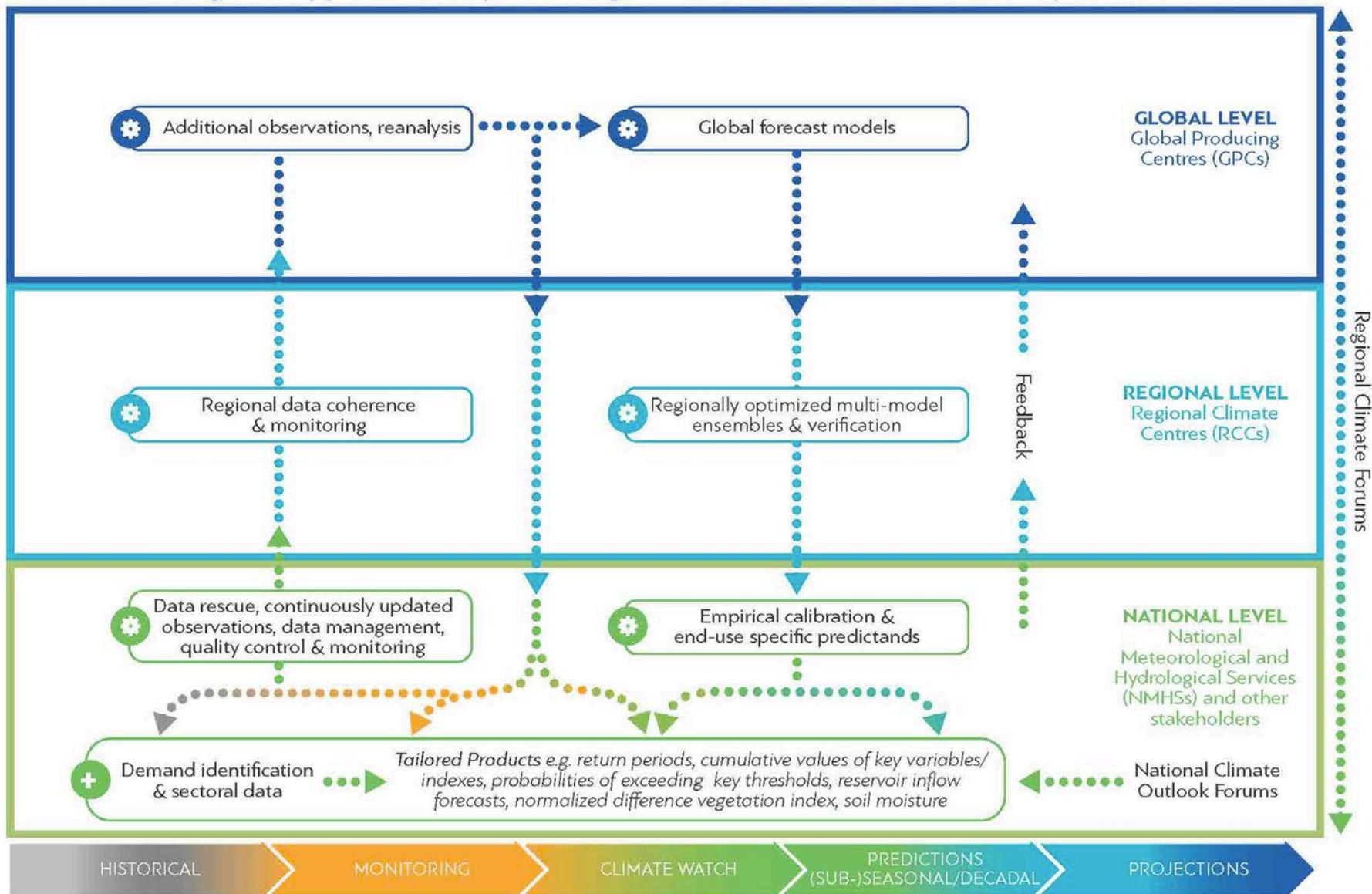
Basic Building Blocks

- CSIS minimum (core) functions
 - Data (historic, present, future)
 - Monitoring
 - Prediction (sub-seasonal to decadal)
 - Projection
- Additional CSIS functions to underpin demand-driven services
- Deployment of Climate Services Toolkit
- Integration with relevant WMO formal mechanisms
 - GDPFS/WIS/WIGOS
- Partnerships
- Aspects of seamlessness
- Capacity development
- Regionally tailored project
 - All the above elements to be identified and in place and fully operational
 - All the interfaces between the above elements to be identified and established and to allow for a lively information exchange

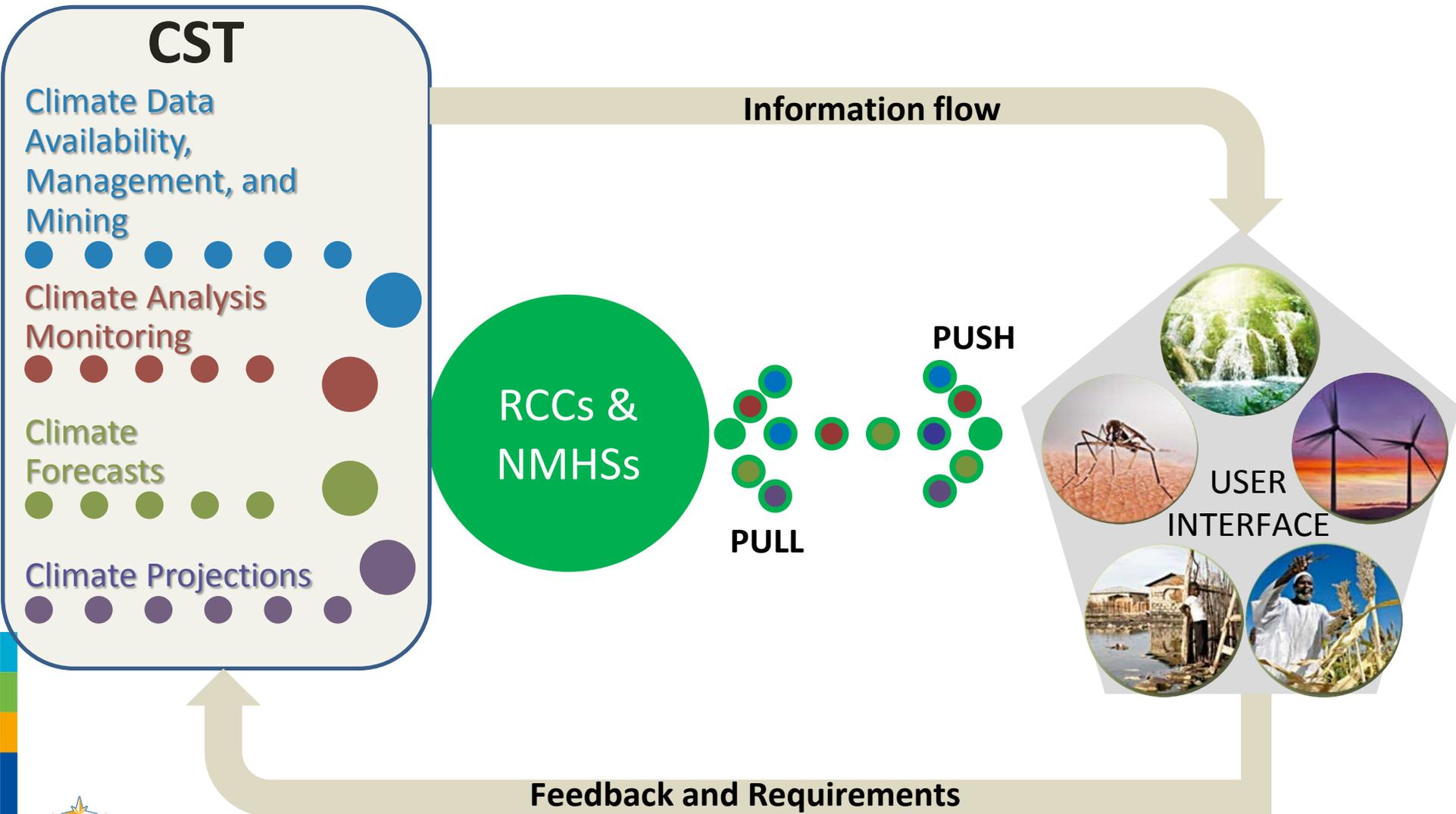




A Regional Approach to Implementing the Climate Services Information System (CSIS-R)



Climate Services Toolkit (CST)



Thank you

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