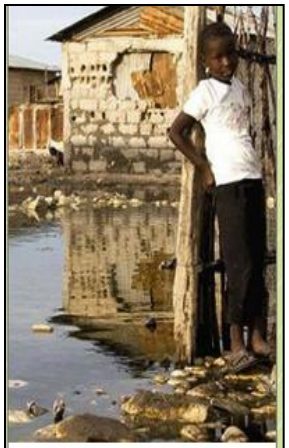
# Potential uses of seasonal and decadal predictions for GFCS

Filipe Lúcio
Director GFCS
flucio@wmo.int

# Vision

**Enable better management of the risks of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale**

Agriculture and food security



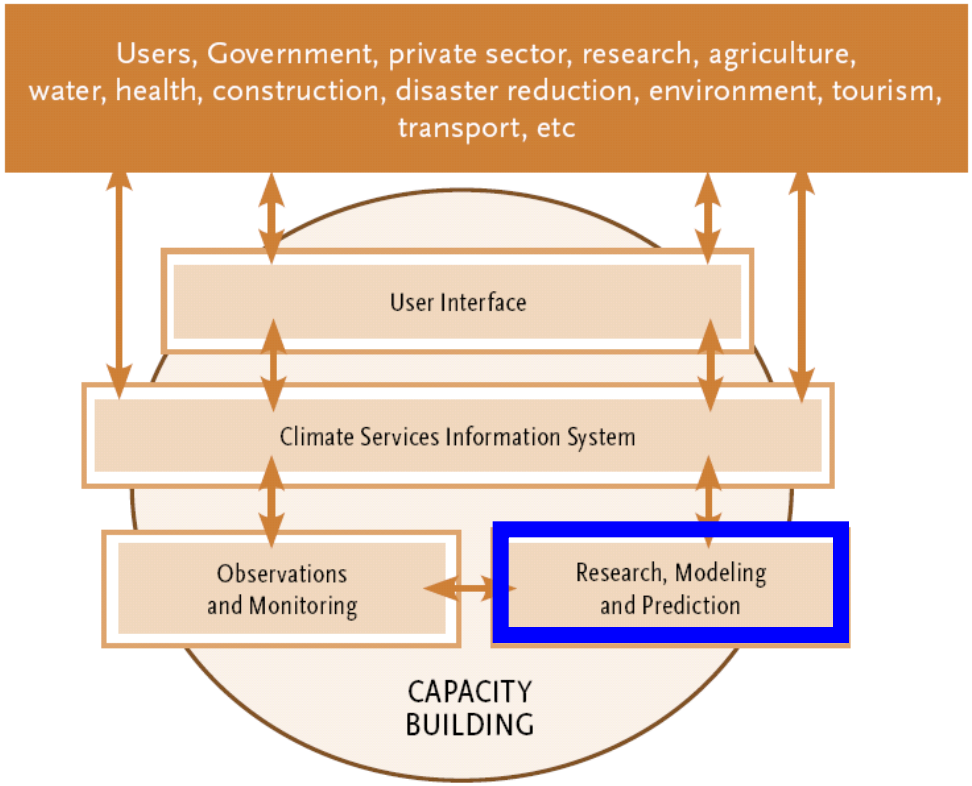
Disaster risk reduction

Water

Health

Energy

# Pillars of the GFCS



# Climate information needs of users and related knowledge gaps

## Decision-making process and user information gaps

1. **Strategic ahead-of-season planning (1- 12 month lead time)**

2. **Risk monitoring and management: intra-season operations (1wk to 40 days range)**
   - timing/duration/intensity of dry/ wet spells

3. **Longer-term strategic planning/policy development (next 1-10 years)**
   - Trends/frequencies of rainfall/temperature over next 5-10 years

4. **Climate change adaptation policy development/planning (next 50 years)**
   - Robust climate change projections
   - Information on the role of climate change in observed events

## Climate Research Frontier

1. **Improving Seasonal prediction**
   - Remote drivers of variability (SSTs, teleconnections, MJO, etc)
   - Local drivers of variability( land-atmosphere coupling)

2. **Sub-seasonal prediction**
   Improved understanding of sources of sub-seasonal predictability

3. **Decadal prediction**
   Drivers of decadal and multi-decadal variability (AMO, PDO)
   Role of aerosols

4. **Climate change scenarios**
   Earth System Modelling
   Attribution methodology
   Understanding Uncertainty

# Climate information needs for end users and related knowledge gaps

## Decision-making process and end-user information gaps

### 5 Assessing current vulnerability due to recent climate events

Lack of 'impacts' datasets (e.g. crop yields, river flows, health/hospital admission statistics) to aid development and targeting of applications models

### 6 Decision making at local scales

Detailed climate services (geographically)

### 7 Estimation of the impacts of climate variability and change

### 8 Mainstreaming climate services for all timescales

## Climate Research Frontier

### 5 Observation / database development

-Enhancing the observations network for both biophysical and socio-economic climate variables;

### 6 Downscaling

- understanding and improvement of the downscaling process
- quantification of benefits and uncertainties to users

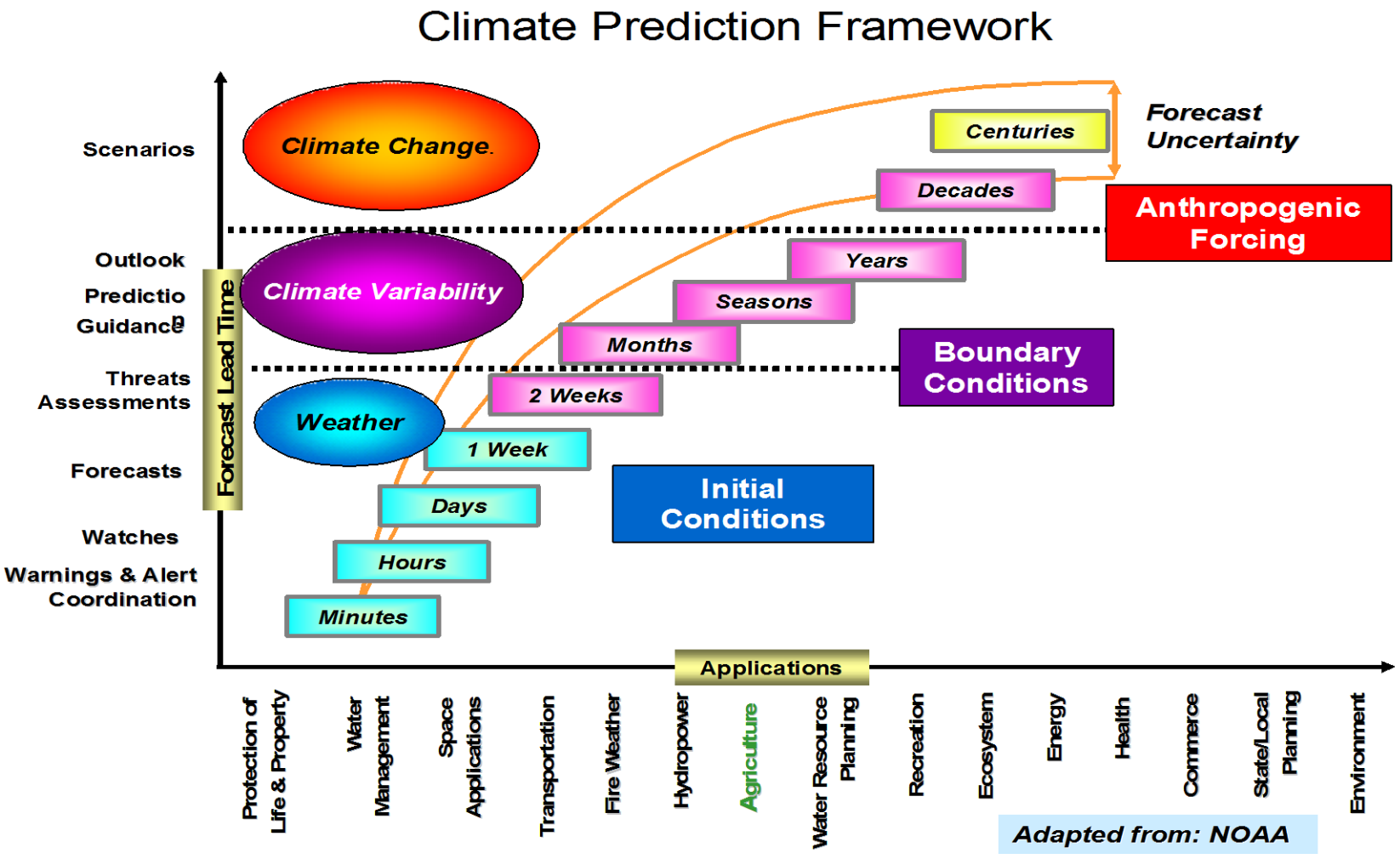
### 7 Applications modelling

Improved understanding/ modeling of climate impacts on hydrology, food security and crop yields, health

### 8 Communication and climate service provider/user interactions

- Improving availability/usability of services
- strategies for bridging the gap between service providers and end users

# Seamless hydrometeorological and climate services



# Research, Modelling and Prediction

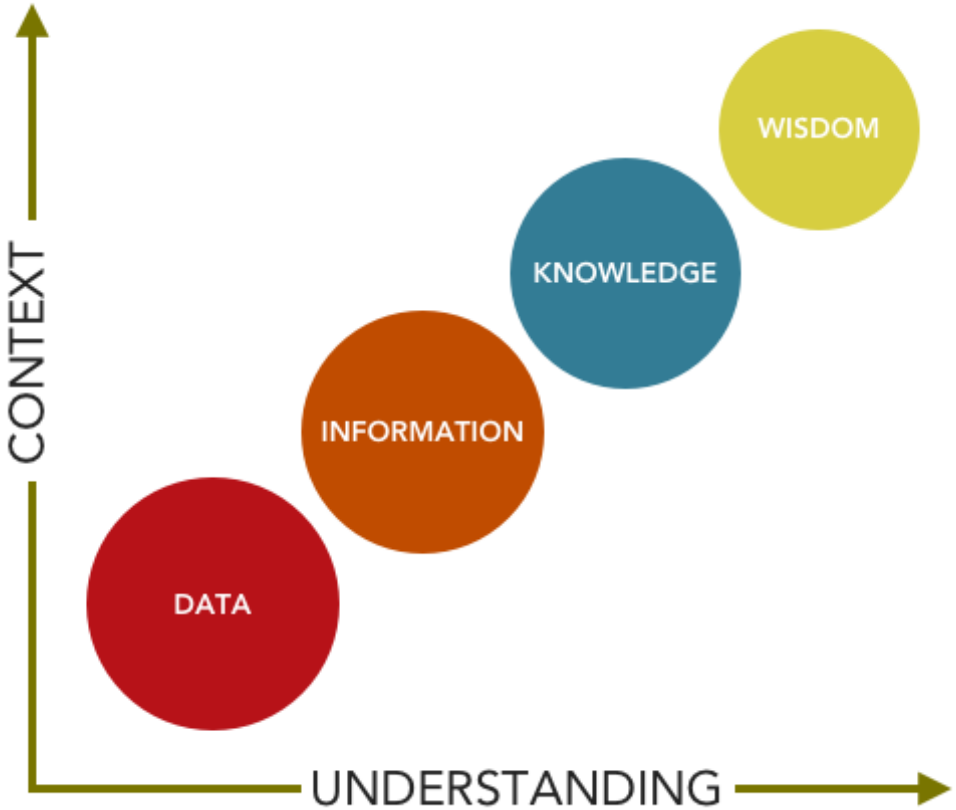
## Gaps

- 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 centenial climate projections
- Limited or unknown predictability for a range of key time-space scales
- Dealing with uncertainty

# Key priorities

- Improving the availability of regularly updated standardized climate diagnostic and prognostic information;
- Focusing climate research on delivering sustained improvement of climate information identified as feasible and most needed in the five priority areas of GFCS implementation
- Supporting applied climate research for developing practical applications for the four near-term GFCS priorities through pilot and demonstration projects that bring together all five elements of the GFCS with a primary focus on integration and delivery of best climate information to users and decision makers.

# Data or information?



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GLOBAL FRAMEWORK FOR CLIMATE SERVICES

# Thank you for your attention