



Climate Service Needs

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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



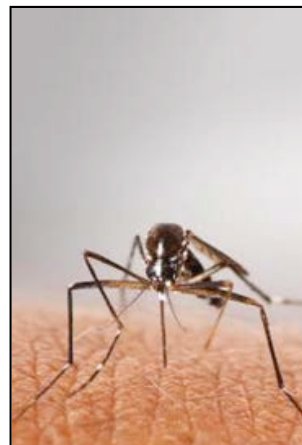
**Agriculture and
food security**



**Disaster risk
reduction**



Water

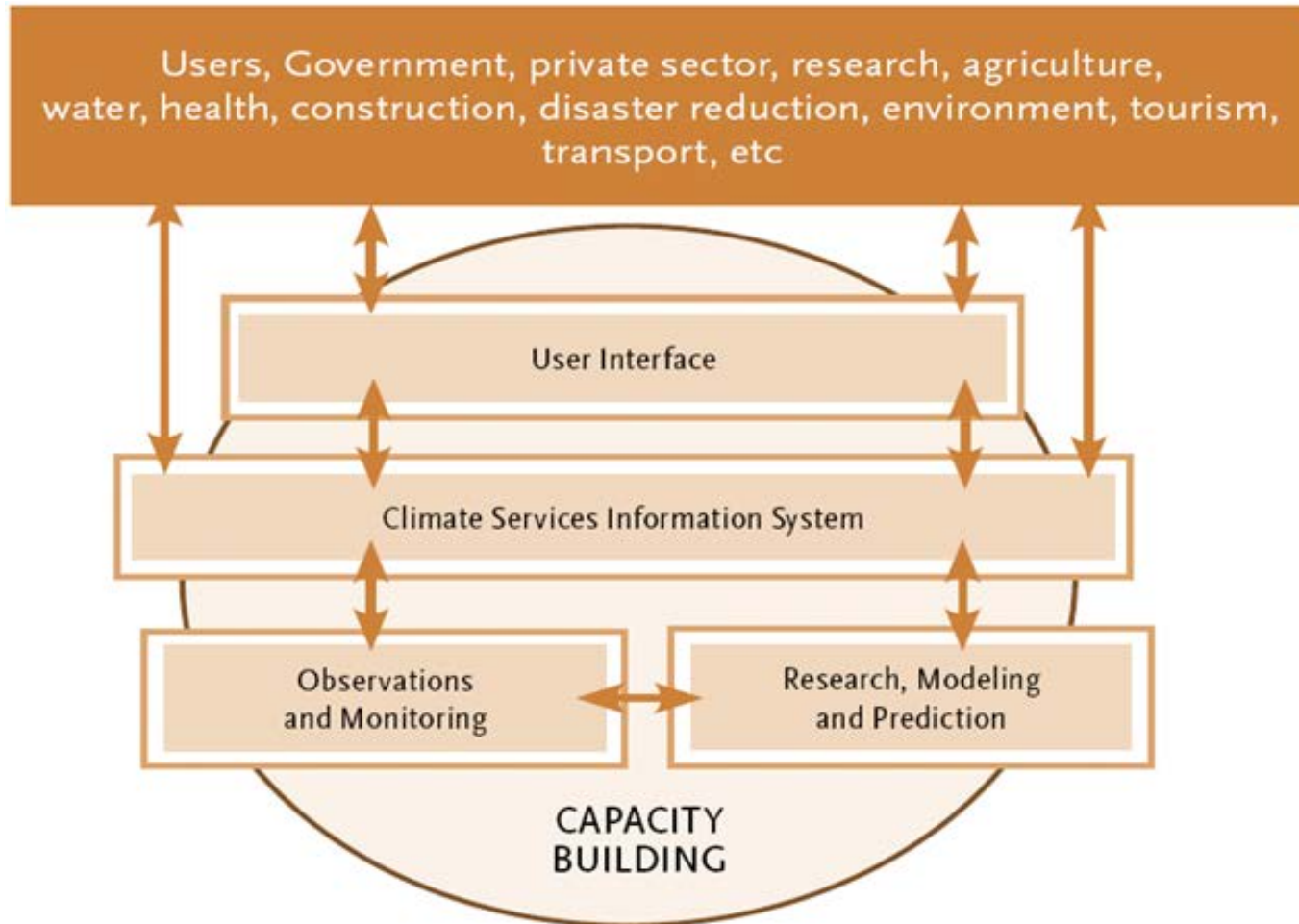


Health



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

Current ECVs



STATUS OF THE GLOBAL OBSERVING SYSTEM FOR CLIMATE

EXECUTIVE SUMMARY
OCTOBER 2015

Atmosphere

Surface Wind speed and Direction
(upper winds 100 – 200 m and
direction)
Upper-air Temperature
Water Vapour
Serious gaps with wafer (see what is
in the other presentation)
Cloud Properties
Precipitation
Earth Radiation Budget
Ozone
Aerosol Properties
Carbon Dioxide, Methane and other
GHGs Upper-air Wind
Atmospheric Reanalyses (using
multiple input)

Ocean

Oceanic ECVs
Sea Ice
Sea Level
Sea Surface Temperature
Ocean Colour
Sea State
Ocean Salinity
Ocean Reanalyses (using multiple input)
Ocean Acidity

Land

Lakes
Glaciers and Ice Caps and
Ice Sheets) Snow Cover
Albedo
Land Cover
LAPAR
LAI
Biomass
Fire Disturbance
Soil Moisture

For Climate Services

- **Socio-Economic ECVs?**
- **Environmental ECVs/Essential Ecosystem Records?**



Thank you for your attention