World Meteorological Organization

Working together in weather, climate and water

WMO

Global Framework for Climate Services: towards improved decision-making in climate sensitive sectors

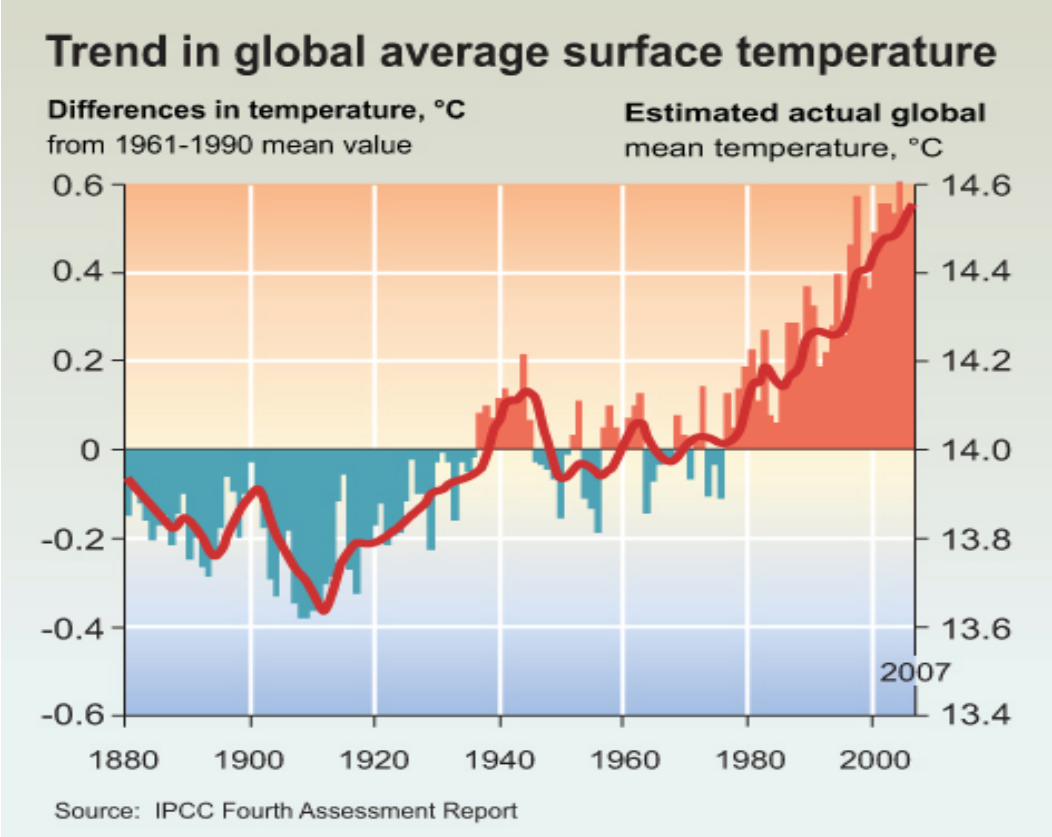
Filipe D. F. Lúcio

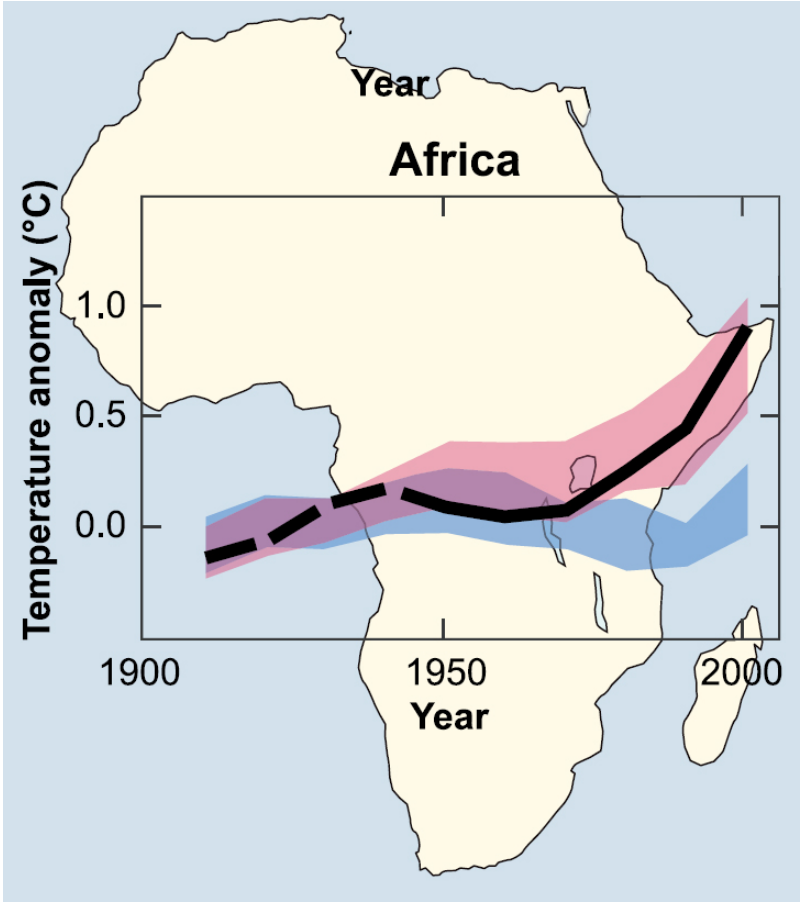
Head

Global Framework for Climate Services Office

http://www.wmo.int/pages/gfcs/gfcs_en.html

Concern...



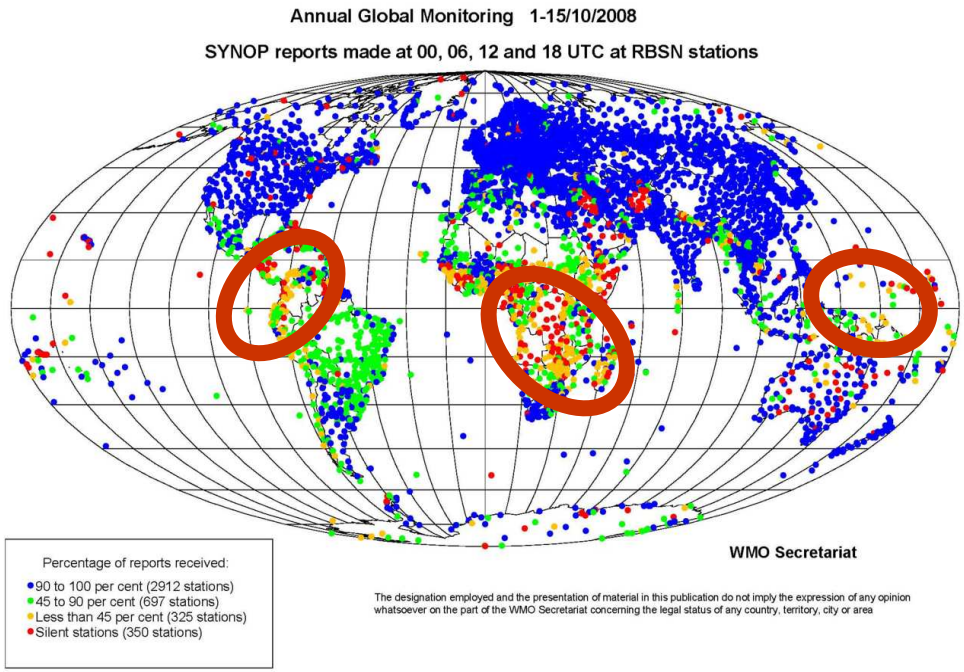


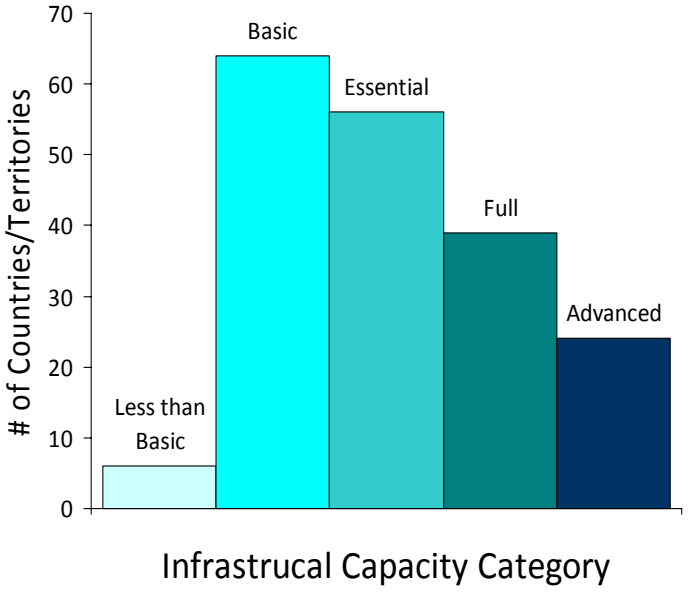
- ✓ **The past is no longer a trustworthy indicator of the future**
- ✓ **New paradigms required to support decision-making**

Concern...

- Many countries lack the infrastructural, technical, human and institutional capacities to provide

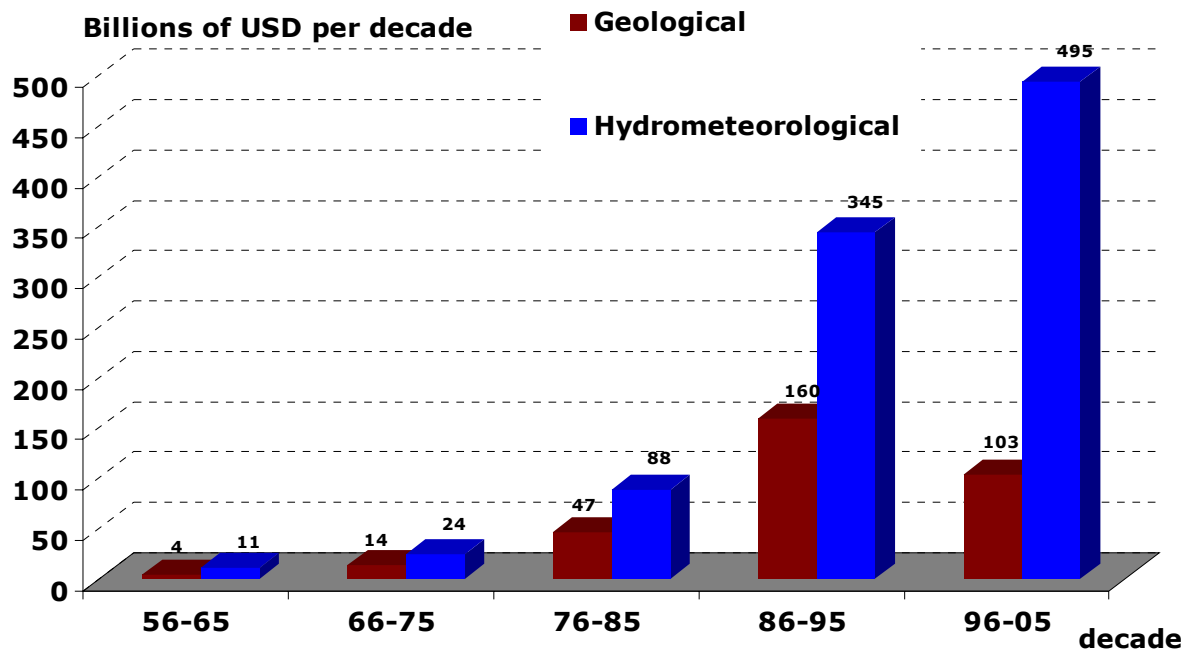
Infrastructural Capacities of Countries as of Aug 2010 to provide Basic, Essential, Full and Advanced Climate Services.



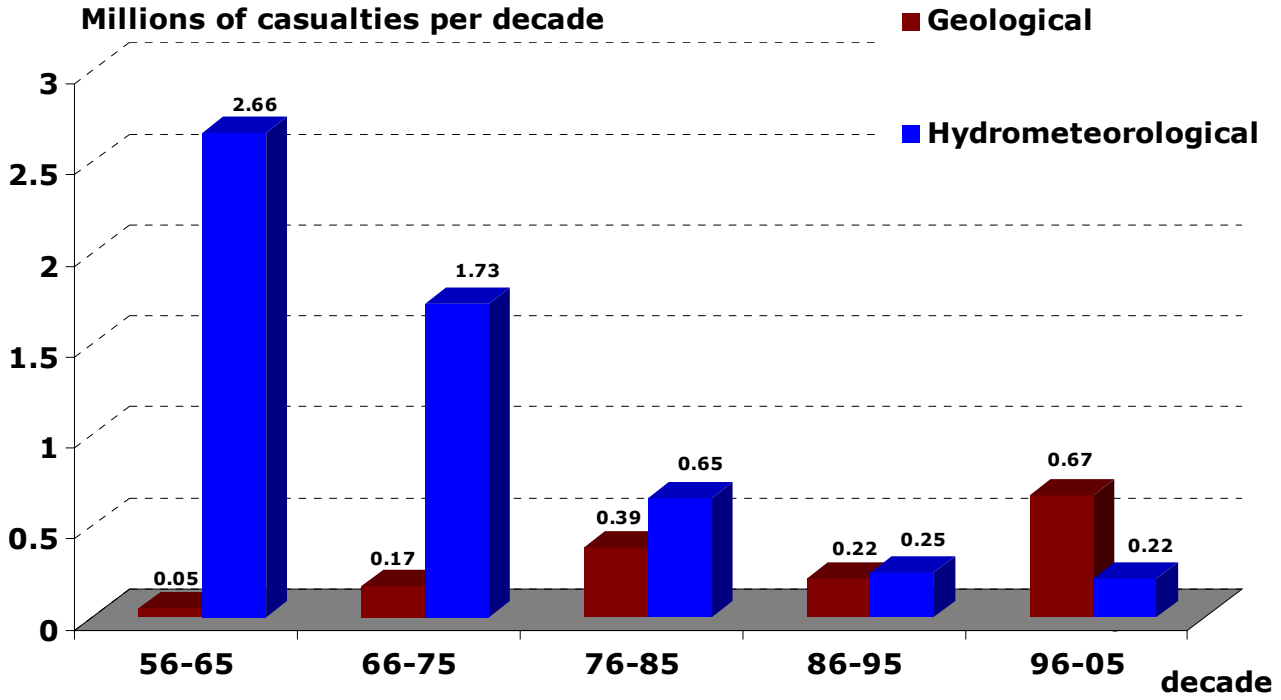


Concern...

Economic losses related to disasters are increasing

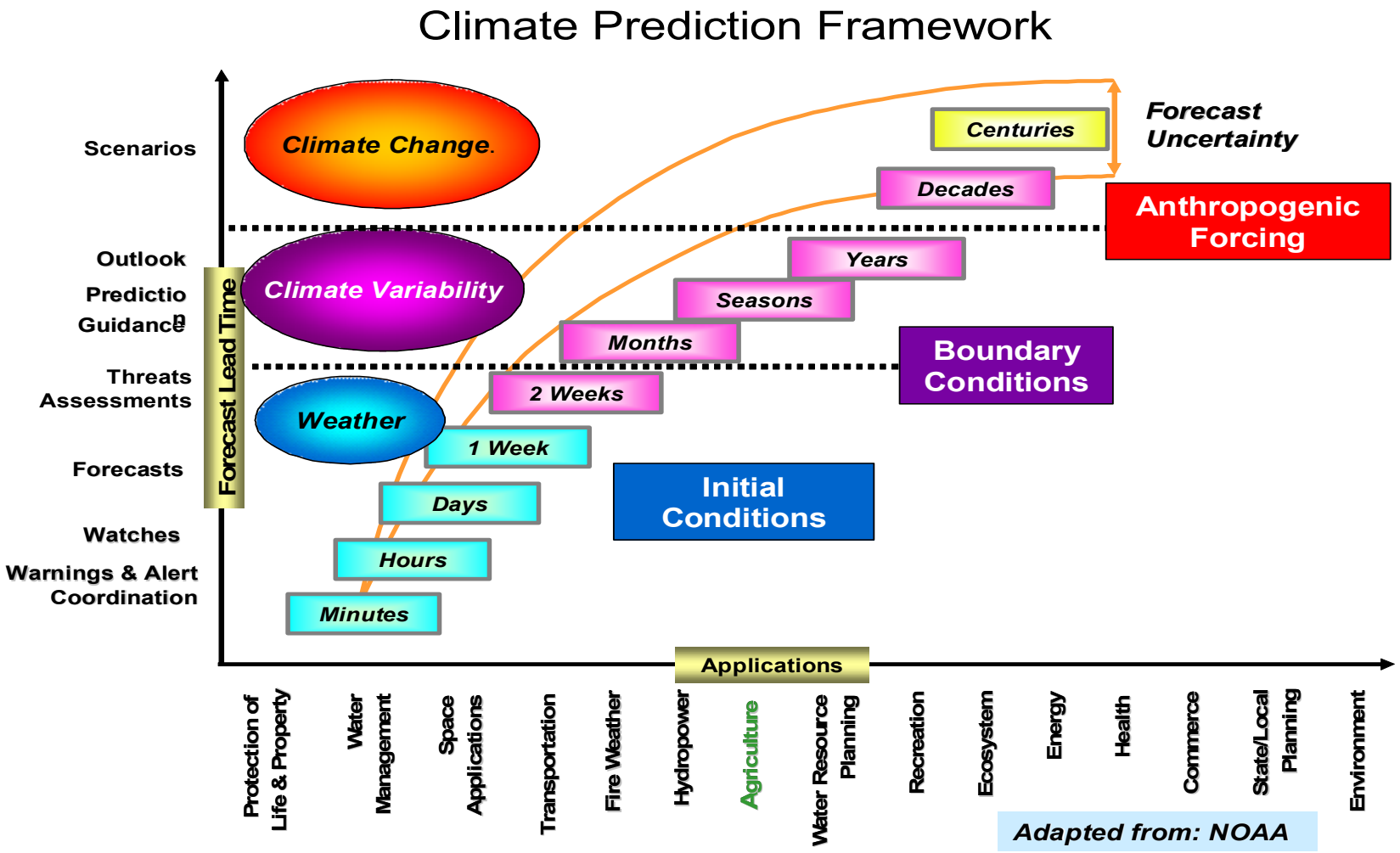


But we are saving lives



Source: EM-DAT: The OFDA/CRED International Disaster Database

Seamless hydrometeorological and climate services

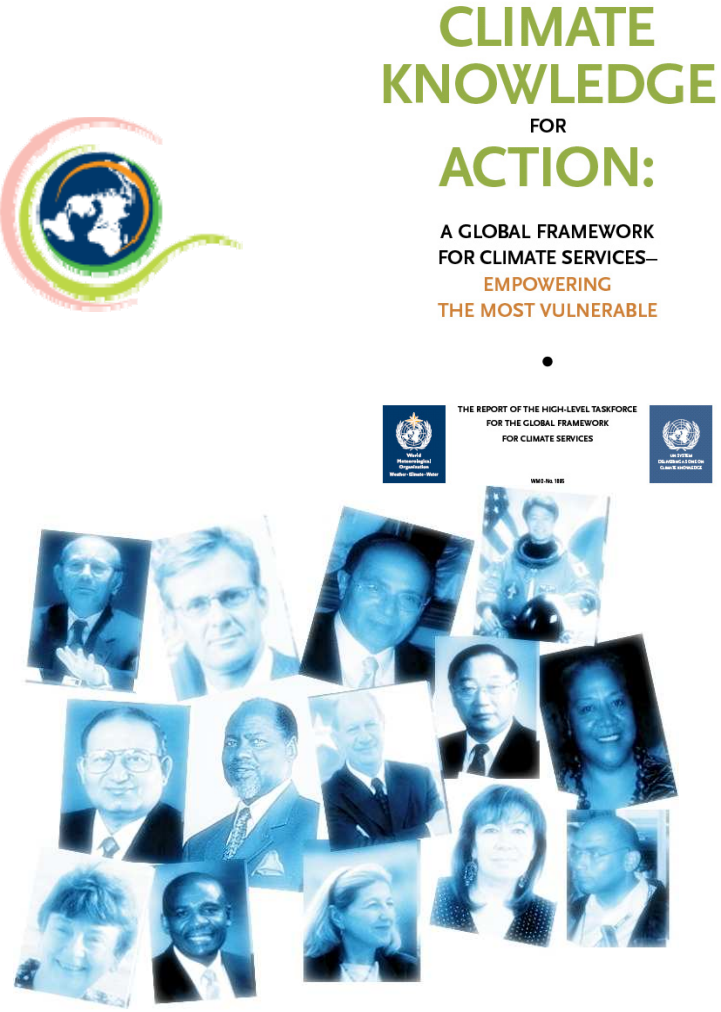


Decision-making based on available information

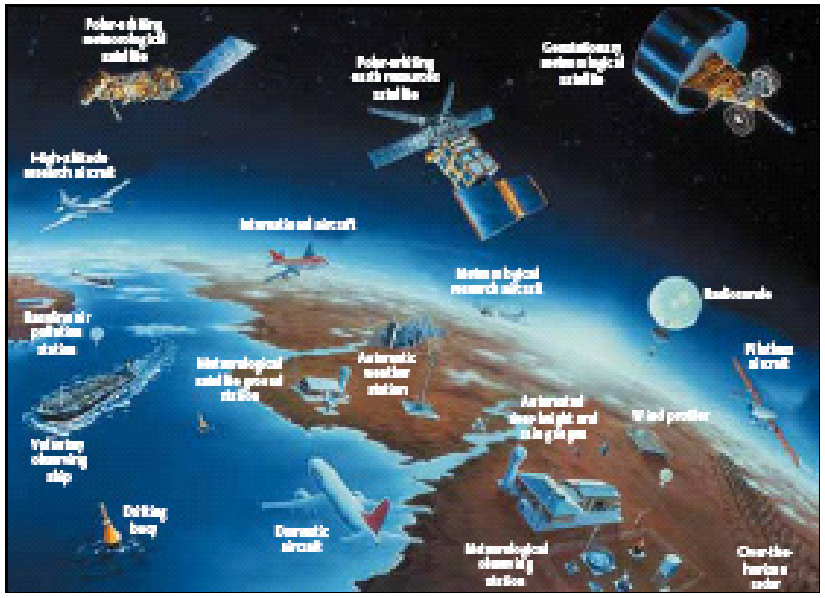
Contingency plans	Mobilize assessment teams	Instruction to communities
Early-warning systems	Local preparation activities	to evacuate, if needed

History of the GFCS

- Third World Climate Conference (2009)
- Intergovernmental meeting (Jan 2010)
- High Level Task Force (2010)
  "Climate knowledge for action: A global framework for climate services – empowering the most vulnerable" (February 2011)
- WMO congress (May 2011)
- Creation of an Executive Council Task Team for GFCS (July 2011)
- Establishment of the GFCS office in the WMO Secretariat (June 2011)
- 1st ECTT GFCS meeting (October 2011)



The Vision of GFCS



The vision of the GFCS is to enable society to better manage the risks and opportunities arising from climate variability and change, especially for those who are most vulnerable to climate-related hazards

What are Climate Services ?

- Generating and providing information on past, present and future climate, and on its impacts on natural and human systems
  - Historical climate data sets
  - Climate monitoring
  - Climate watches
  - Monthly/Seasonal/Decadal climate predictions
  - Climate change projections
- Helping the user
  - access the right product for decision making, and
  - use it appropriately including aspects of uncertainty

Photo Credits: NASA, Pedro Sanchez, Renzo Taddei

Pre-requisites for climate services

- **Available**: at time and space scales that the user needs,
- **Dependable**: delivered regularly and on time,
- **Usable**: presented in user specific formats so that the client can fully understand,
- **Credible**: for the user to confidently apply to decision-making
- **Authentic**: entitled to be accepted by stakeholders in the given decision contexts
- **Responsive and flexible**: to the evolving user needs, and
- **Sustainable**: affordable and consistent over time.

The principles of the GFCS

1 - Priority shall go to building the capacity of climate-vulnerable developing countries

2 - Ensure greater availability of, access to, and use of climate services for all countries

3 - Three geographic domains; global, regional and national

4 - Operational climate services will be the core element of the Framework

5 - Climate information is primarily an international public good provided by governments, which will have a central role in its management through the Framework

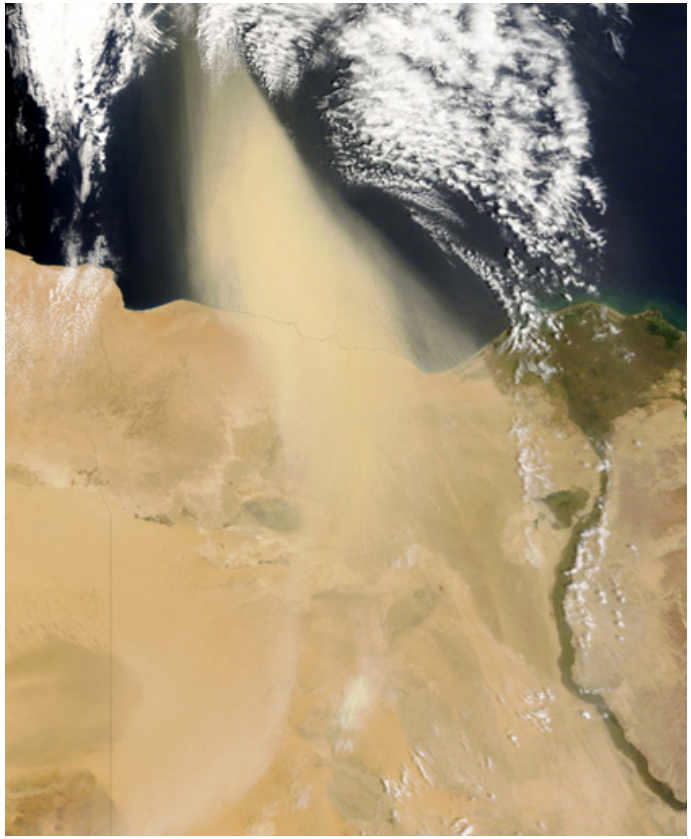
6 - Promote free and open exchange of climate-relevant observational data while respecting national and international data policies

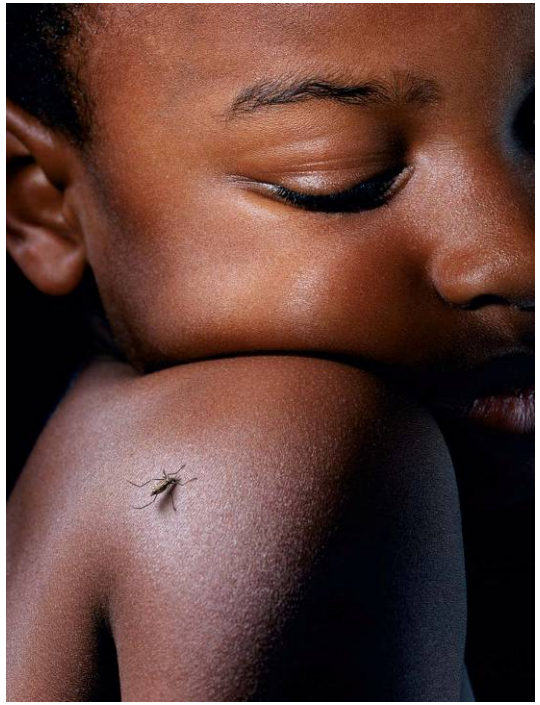
7 - The role of the Framework will be to facilitate and strengthen, not to duplicate

8 - Built on user needs through user – provider partnerships that include all stakeholders

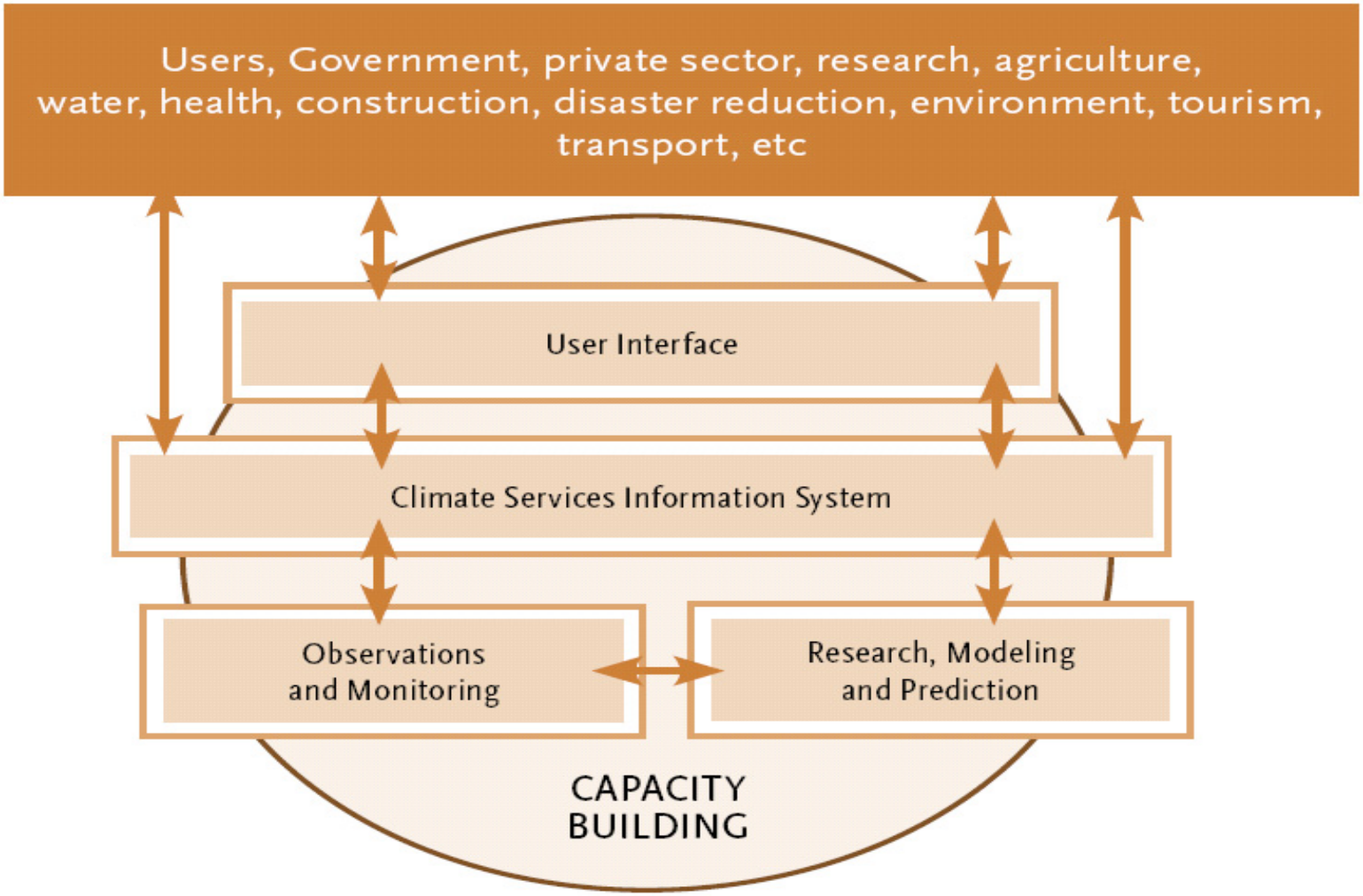
The GFCS short term priority areas

- ✓ **Water**
- ✓ **Disaster risk reduction**
- ✓ **Health**
- ✓ **Agriculture/food security**





The pillars of the GFCS



User Interface Platform

International coordination through User Interface Platform

Government & community decisions

Global 	Feedback User community needs Priorities	
Regional 	Dialogue Requirements Intersecting w/ other pillars	
National 	Literacy Advocacy & outreach	
Community 	Evaluation & monitoring Programme & activity implementation	

Operational infrastructure required

- Technical infrastructure
  - Requirements for the different components of the GFCS (Observations, Monitoring, Research, Operational climate information and prediction products, User Interface mechanisms)
  - Interoperability of databases (e.g., WIS compliance)
  - Climate Services Toolkit (especially including downscaling/tailoring tools)
  - Web platform for dissemination

- Global-Regional-National interaction
  - Networking capabilities (national access to as well as contribution to global and regional products)

- Best practices and standardized approaches
  - Quality management, best practices on methods, tools, etc.
  - Standardized approaches for facilitating regional/sub-regional synergy

- Linking operational products with the applications
  - Access to application models and decision support tools
  - User-accessible climate knowledge base
  - Operational linkages with applications infrastructure

Domains of operation of GFCS

Global Level (GPC)

- Produce global climate prediction products
- Coordinate and support data exchange, major capacity building initiatives
- Establish and maintain standards and protocols

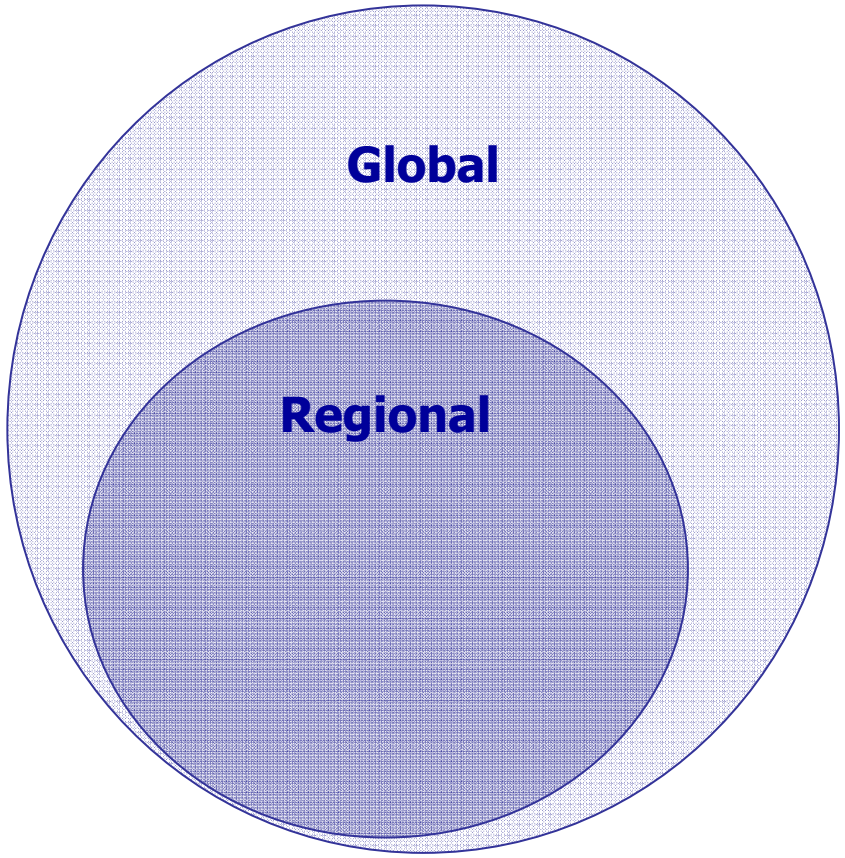
Currently Designated GPCs

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

Domains of operation of GFCS

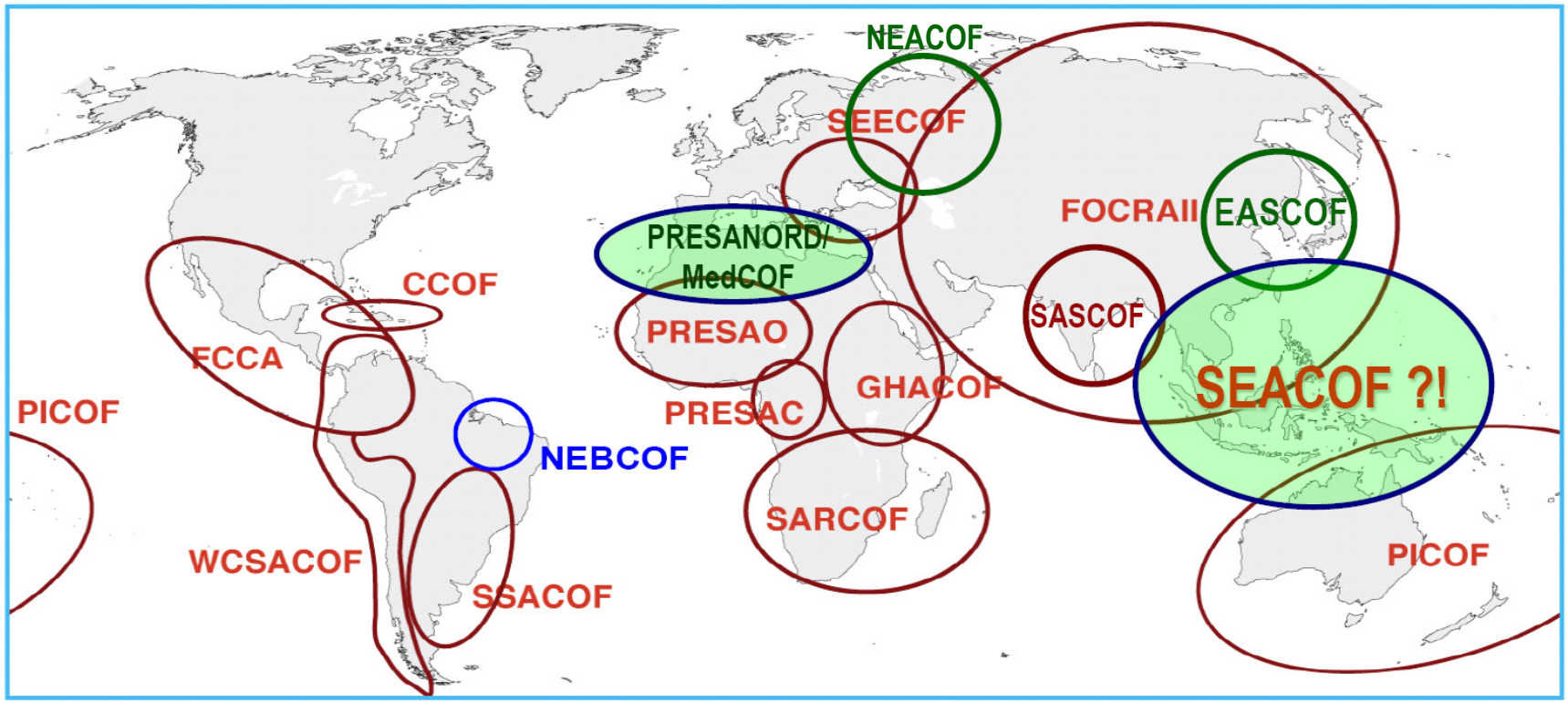
Regional Level (RCC)

- Support multilateral efforts to address regional needs
  - Regional policy, data exchange, infrastructure dev, research, training at service provision
- e.g., RCOF
  - Focused on providers
  - Need more linkages with research



Critical for capacity building requiring resources beyond a single nation

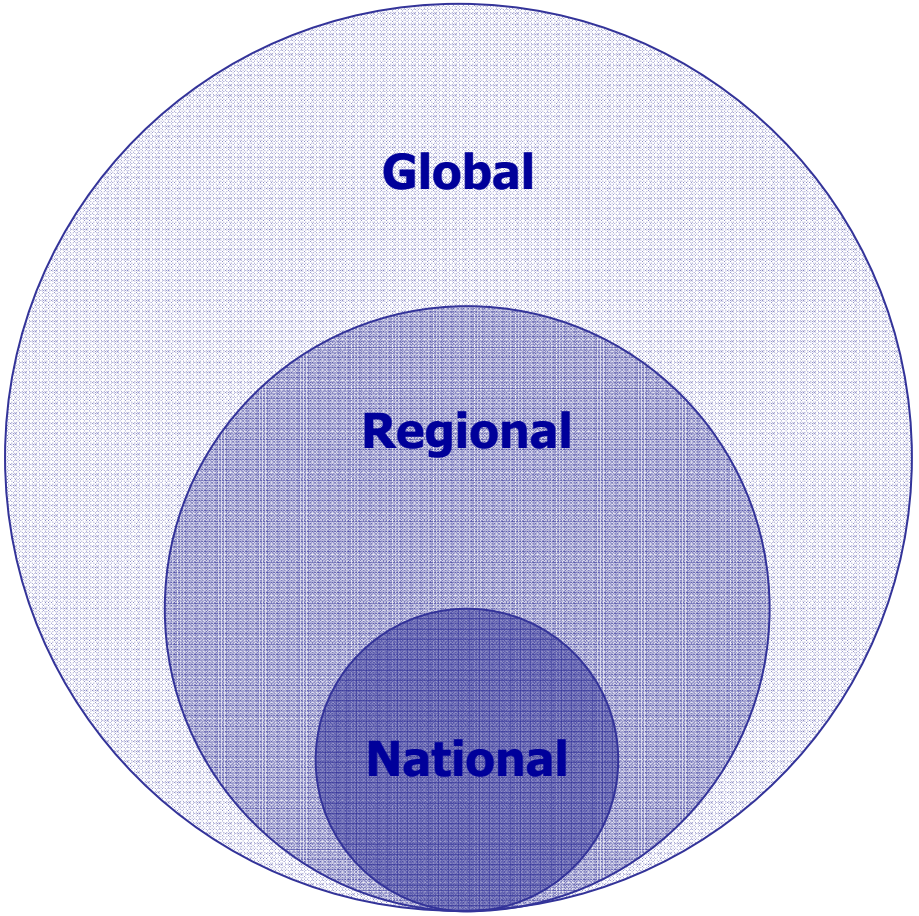
Regional Climate Outlook Forums worldwide



Domains of operation of GFCS

National Level (NCC)

- Ensure access to data and knowledge products
- Tailor information to user requirements
- Ensure effective routine use of information
- Develop sustainable capacities



Potential National Mechanisms

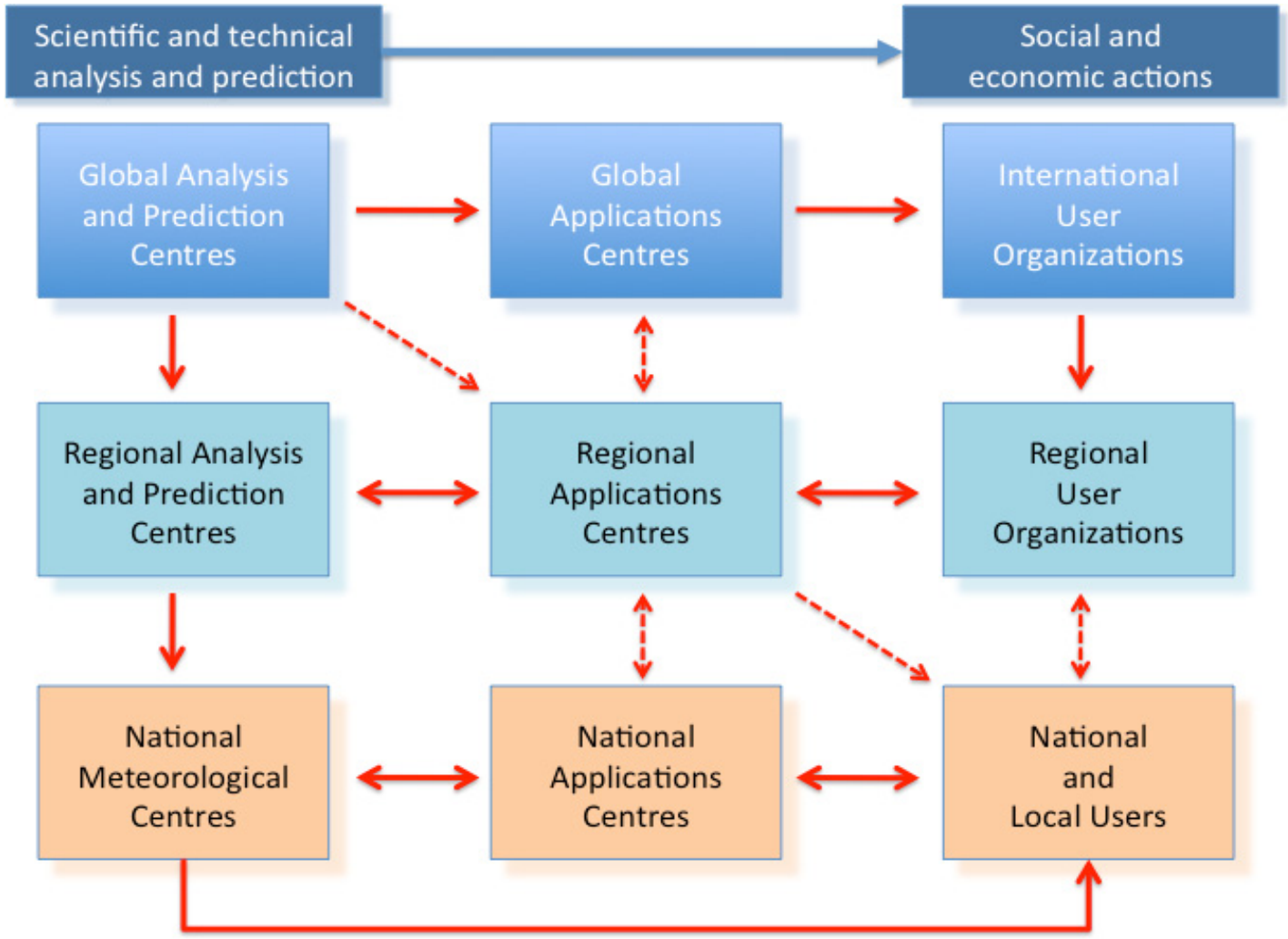
- Framework for Climate Services at national level
  - Require well-coordinated arrangements between the key national institutions responsible for observations, research, tailored products and expert advice
  - Some countries may establish National Climate Services (NCSs) and/or National Climate Centres (NCCs), largely as integral components of the NMHSs, to support/facilitate the Framework at National Leel

- National Climate Outlook Forums (NCOFs)
  - Adapting the Large and Regional scale forecasts to the national context
  - Tailoring products and translating key messages for users (Multidisciplinary Working Groups)
  - Evaluating the impact of expected conditions (with existing vulnerabilities)

- Coordination mechanisms at National level
  - Context specific (National context)
  - Needs a strong and sustained users liaison
  - Needs coordination of Research (including climate change aspects)
  - Needs coordination of climate data and knowledge base

Pilots conducted in Burkina Faso, Niger and Mali

Interactions throughout the levels

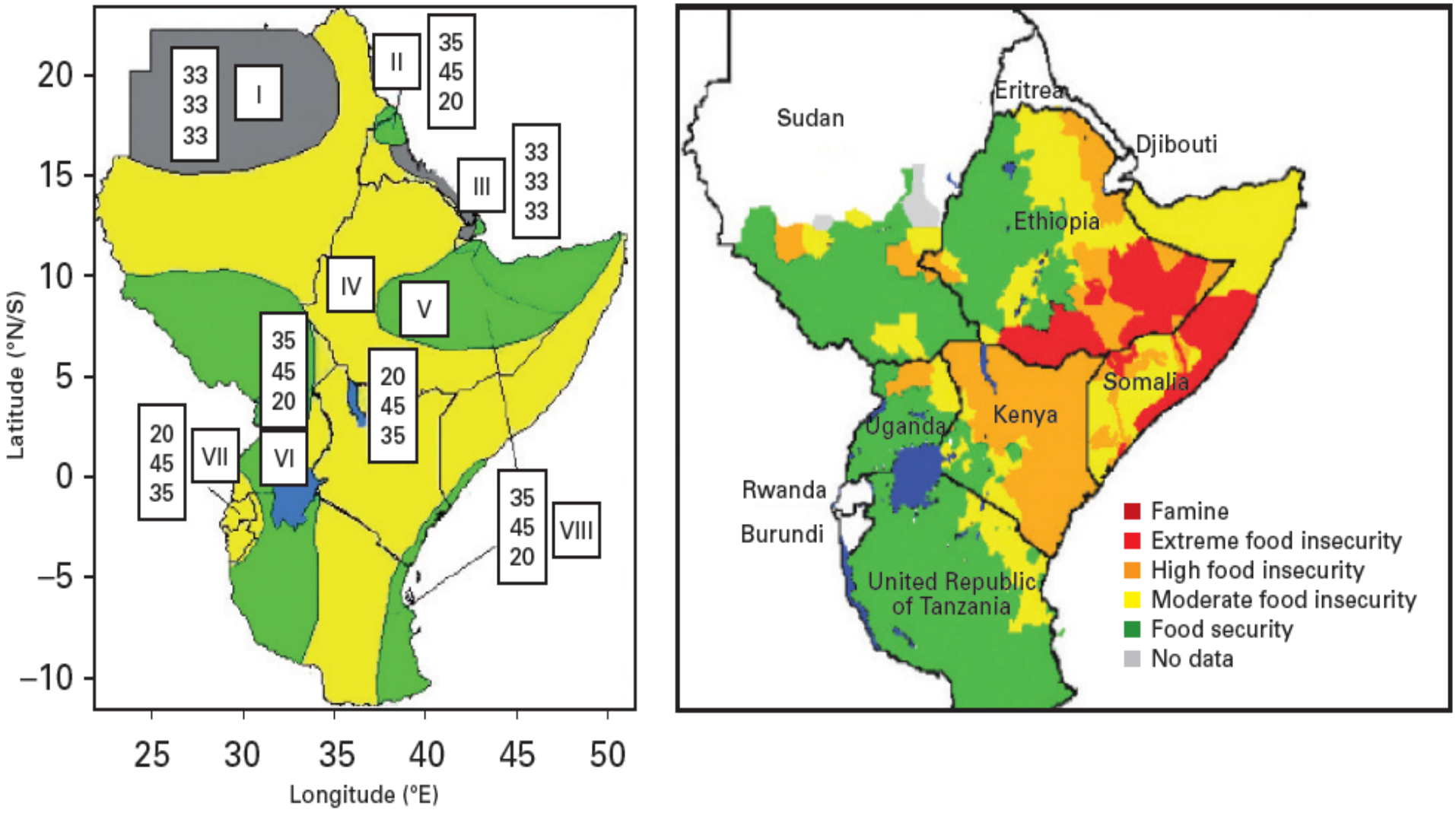


Benefits

Widespread benefits for Improved decision-making in

- Agriculture and food security
- Disaster risk reduction
- Energy production, transport and usage
- Finance and insurance
- Health
- Water quality and water resources management
- Trade and commerce
- Transport
- Tourism
- Urban development/management
- Recreation and sports
- ...and many more...

Food Security outlooks



Food Security Outlook for Horn of Africa based on seasonal forecast

Disaster risk management

- Early warning of potential hazards
- Improved land-use planning
- Insurance markets

26

Water resources management

• Ensure water infrastructure remain suited to changes in water supplies, extreme events & variable determined by climate

• Improved operational (short-term supplies) and long-term planning (development of infrastructure)

•Understanding of intensity and frequency of extreme events can guide investments

An aerial ew of the Tarbella Dam, Pakistan. UN Archive.

Measuring success

The GFSC successful when:

- Climate information services are used as regular inputs to decisions in climate sensitive sectors, e.g. in short term water allocation or design of longer term infrastructure development and operations
- The applications of climate information services results in greater efficiencies and effectiveness in resources use thus promoting sustainable development
- climate information is being disseminated effectively and in a manner that lends itself more easily to practical action than at present
- Improved access to accurate and reliable climate information results improved livelihoods and well being of peoples particularly in the developing world

Process for the development of the Implementation Plan

http://www.wmo.int/pages/gfcs/ip_en.php

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 in across pillars and priority areas
- Improving climate observations in data sparse areas
- Promote partnerships among stakeholders for addressing gaps and priorities

Possible initial implementation activities & projects

- ✓ Establish Framework leadership & management
- ✓ Define national mandates in climate services provision
- ✓ Strengthen capabilities in disaster risk reduction
- ✓ Improve communication between climate, agriculture and food security communities
- ✓ Enhance partnerships between climate services and water resources management
- ✓ Develop national working groups in climate and health
- ✓ Improve decision-making on climate-related risks
- ✓ Strengthen climate information regional infrastructure
- ✓ Advance in data recovery and digitizing
- ✓ Launch pilot projects

Important Milestones

- **17 September 2012: Translated documents on the web**

- **26 – 27 October 2012: Dialogue on climate services**

- Interaction of Providers and users
- Case Studies
  - ~40 countries
  - > 10 non-Met institutions
  - > 60 cases on all 4 priority areas and all pillars

- **29 – 31 October Ext Congress**

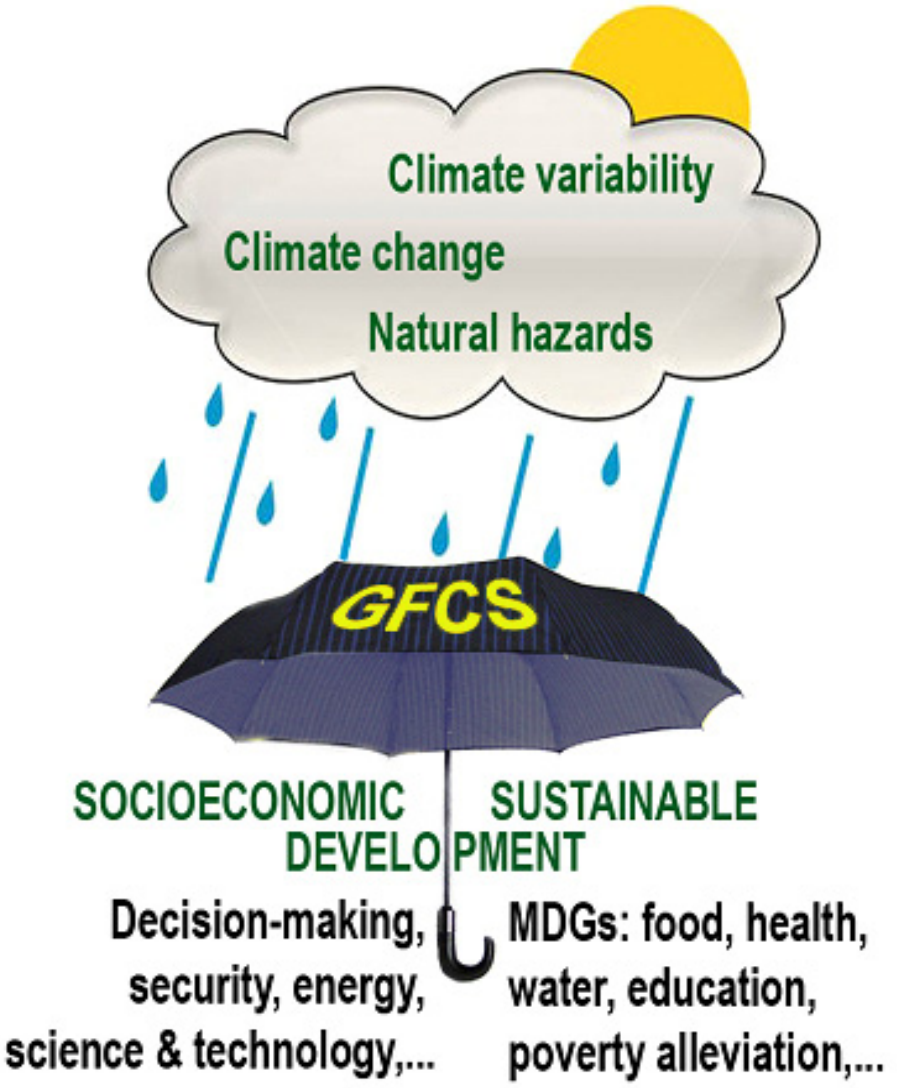
Summing-up

- ✓ **3 closely-related issues:**
  - ➢ ***Adaptation to climate variability and change***
  - ➢ ***Disaster risk reduction***
  - ➢ ***Sustainable development & societal benefits***

- ✓ **Requirements:**
  - ➢ ***Reinforcing developing countries' adaptive capabilities***
  - ➢ ***Multidisciplinary partnerships across all sectors***
  - ➢ ***Capacity building to be seen as an investment, not an expenditure***

A key opportunity:

- ➢ ***A Global Framework for Climate Services***



In conclusion

- The provision of climate services is not new, but the GFCS represents a major concerted, coordinated global effort to improve the well-being of all the parts of society that are vulnerable to climate variability and climate change

- As a global partnership the GFCS will link a network of partners to meet global needs

- Through the Implementation Plan of the GFCS, the climate community and your organizations can make concrete contributions under the pillars and priority areas of the Framework

Thank you

UN SYSTEM
DELIVERING AS ONE ON
CLIMATE KNOWLEDGE

Global Framework for Climate Services (GFCS) Office

Global Framework for Climate Services

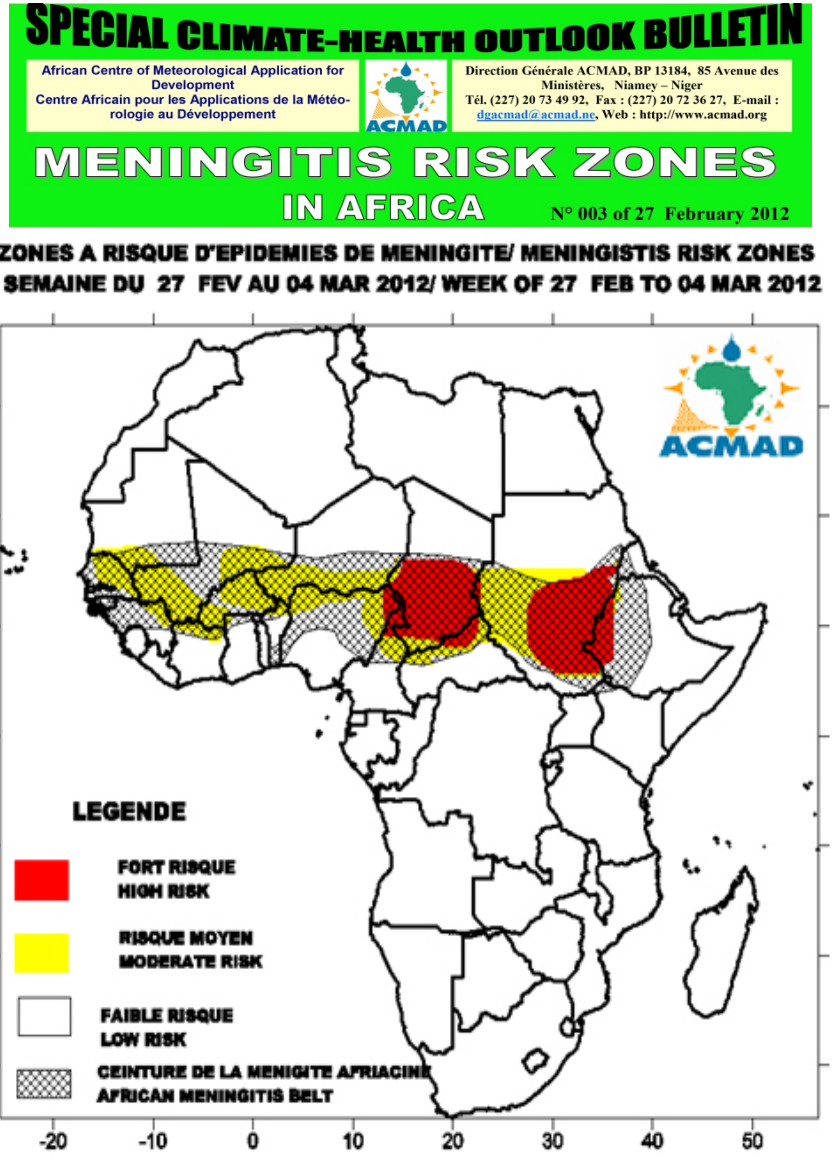
For more information contact:
Global Framework for Climate Services (GFCS) Office
World Meteorological Organization
Tel: 41.22.730.8579
Fax: 41.22.730.8037
Email**: gfcs@wmo.int**

http://www.wmo.int/gfcs

Or join the talk:

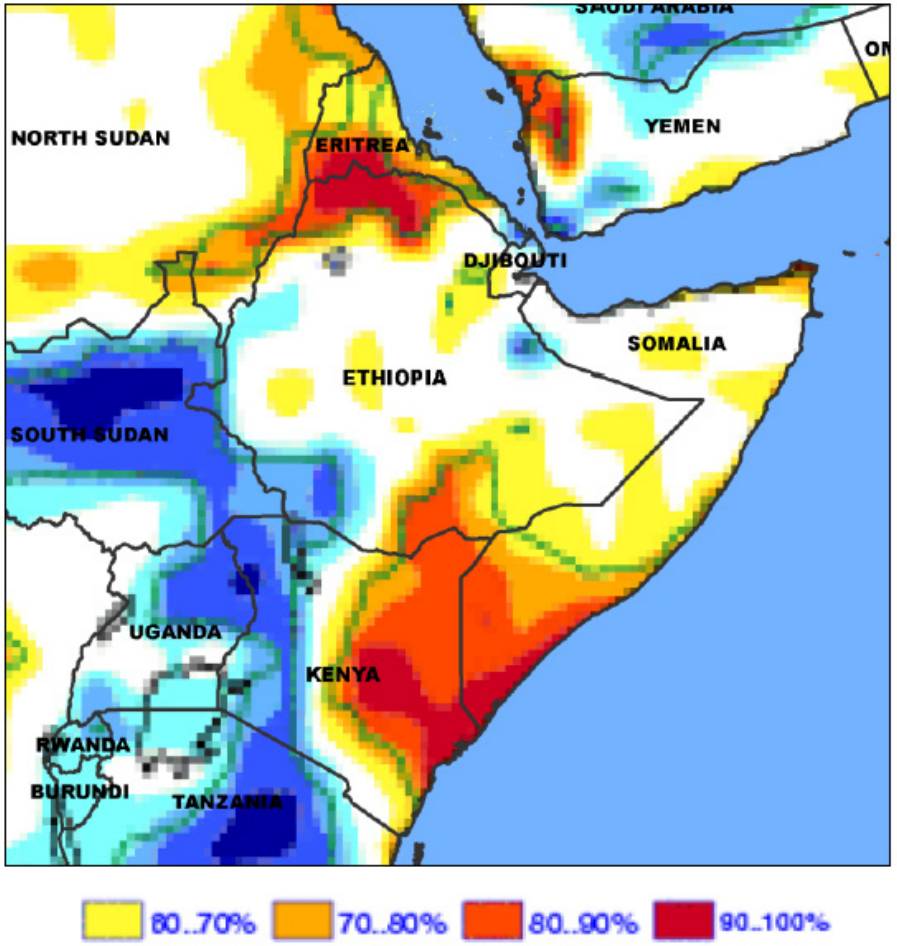
https://groups.google.com/a/wmo.int/group/gfcs?hl=en

Other examples



WFP World Food Programme wfp.org

November 2011 - January 2012



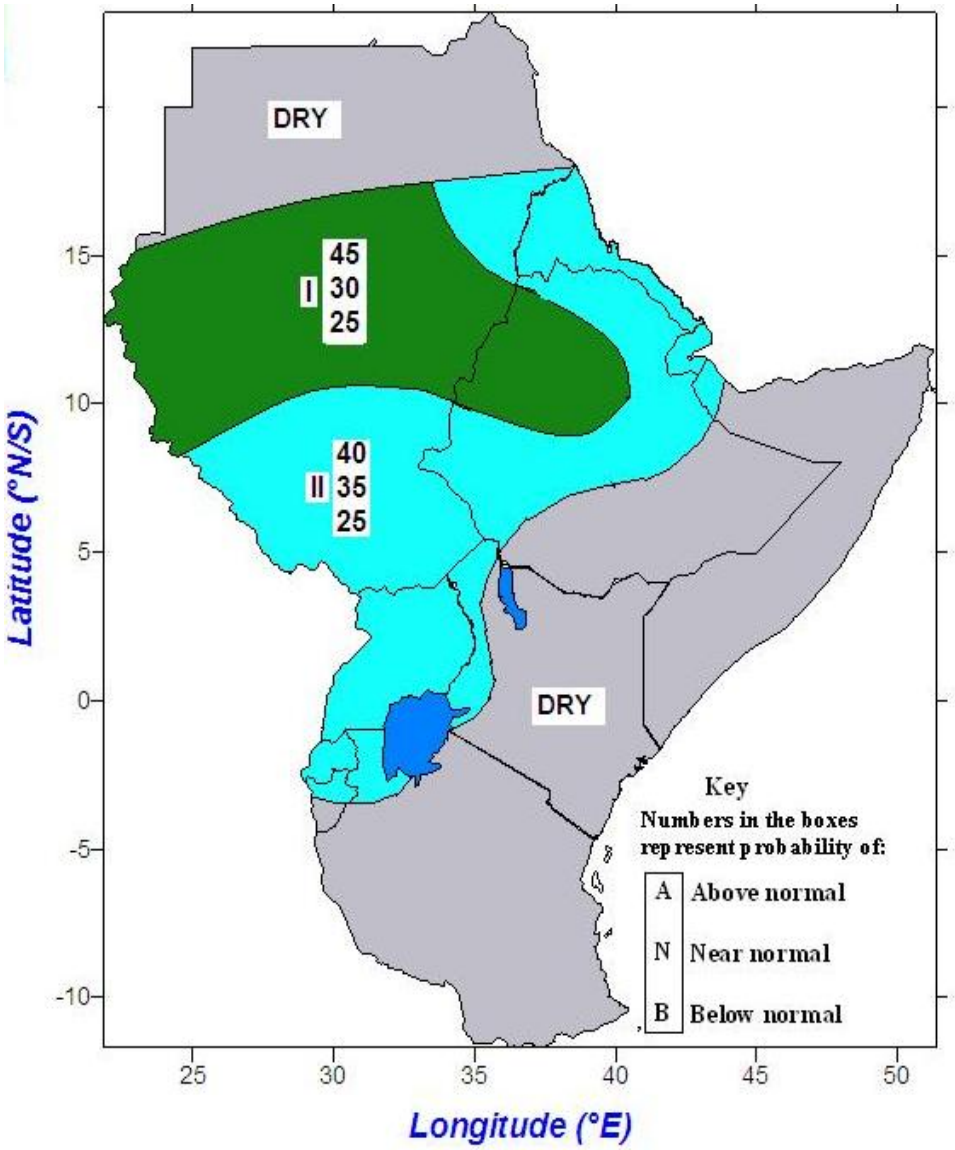
ECMWF Seasonal Forecast. Issued 15/09/2011

Probability of Temperature above the median

Examples of initial GFCS elements

31st Greater Horn of Africa Climate Outlook Forum; Djibouti, May 2012

Capacity Development to extend GFCS benefits to the developing world



IGAD Pilot RCC: Greater Horn of Africa consensus-driven climate outlook; July - September 2011