World Meteorological Organization

Working together in weather, climate and water

WMO Drought Activities and Regional Perspectives: An overview

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Overview of WMO

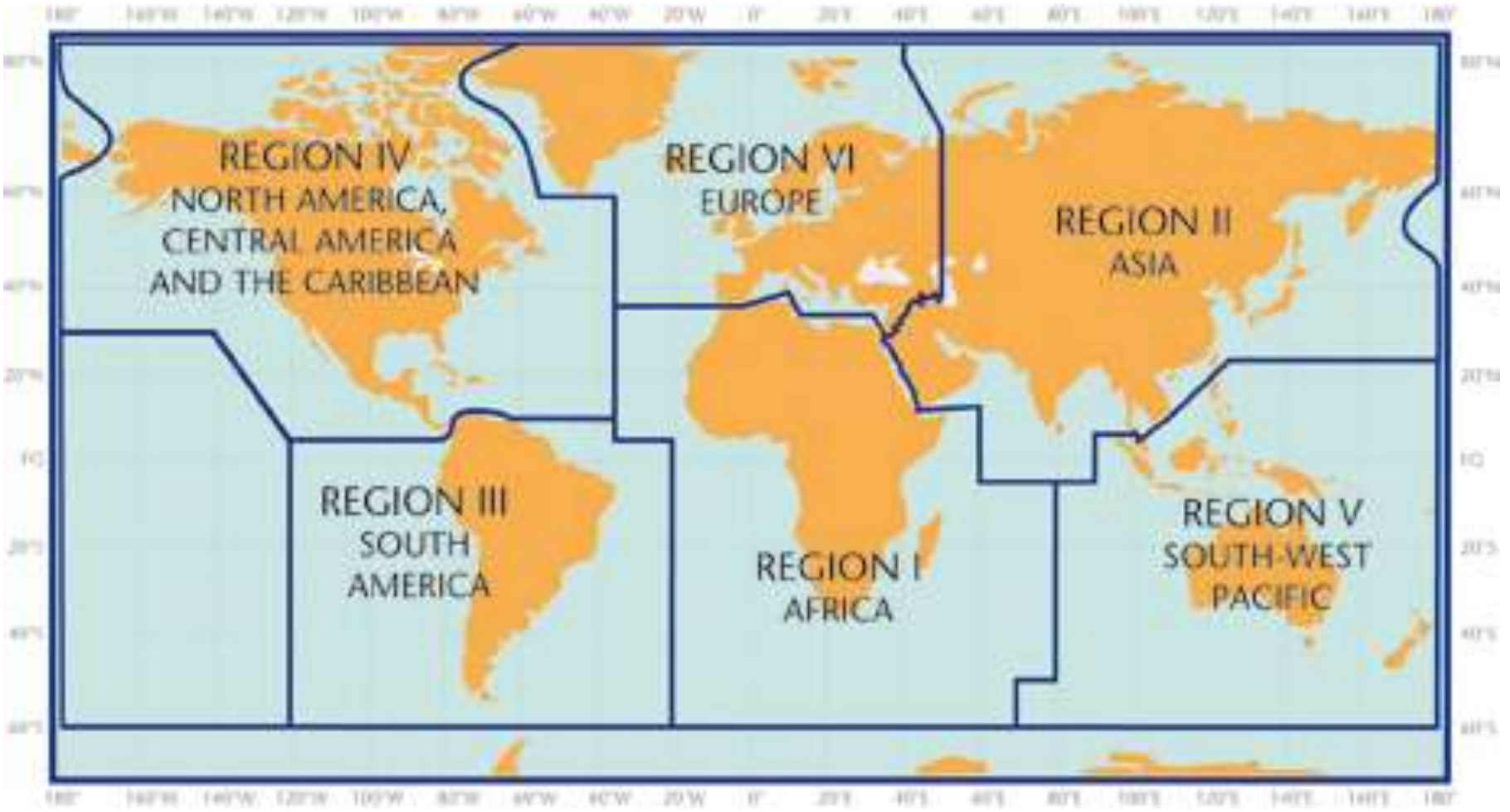
World Meteorological Organization

- United Nations specialized technical agency for weather, climate, hydrology and water resources and related environmental issues.
- 189 Members from National Meteorological and Hydrological Services (NMHS)
- 10 major scientific & technical programmes (Secretariat)
- 8 Technical Commissions advise & guide activities of programmes (Experts)
- 6 Regional Associations involved in implementation

Eight Commissions with focus on Technical Issues

- Commission for Aeronautical Meteorology (CAeM)
- Commission for Agricultural Meteorology (CAgM) ----- Drought
- Commission for Atmospheric Sciences (CAS)
- Commission for Basic Systems (CBS)
- Commission for Climatology (CCl) ------- Drought
- Commission for Hydrology (CHy) ------- Drought
- Commission for Instruments and Methods of Observation (CIMO)
- Joint WMO-IOC Commission for Oceanography and Marine Meteorology (JCOMM)
- Joint Expert Group on Climate, Food and Water (JEG-CFW)

WMO Regions


REGION IV
NORTH AMERICA,
CENTRAL AMERICA
AND THE CARIBBEAN
REGION VI
EUROPE
REGION II
ASIA
REGION III
SOUTH
AMERICA
REGION I
AFRICA
REGION V
SOUTH-WEST
PACIFIC

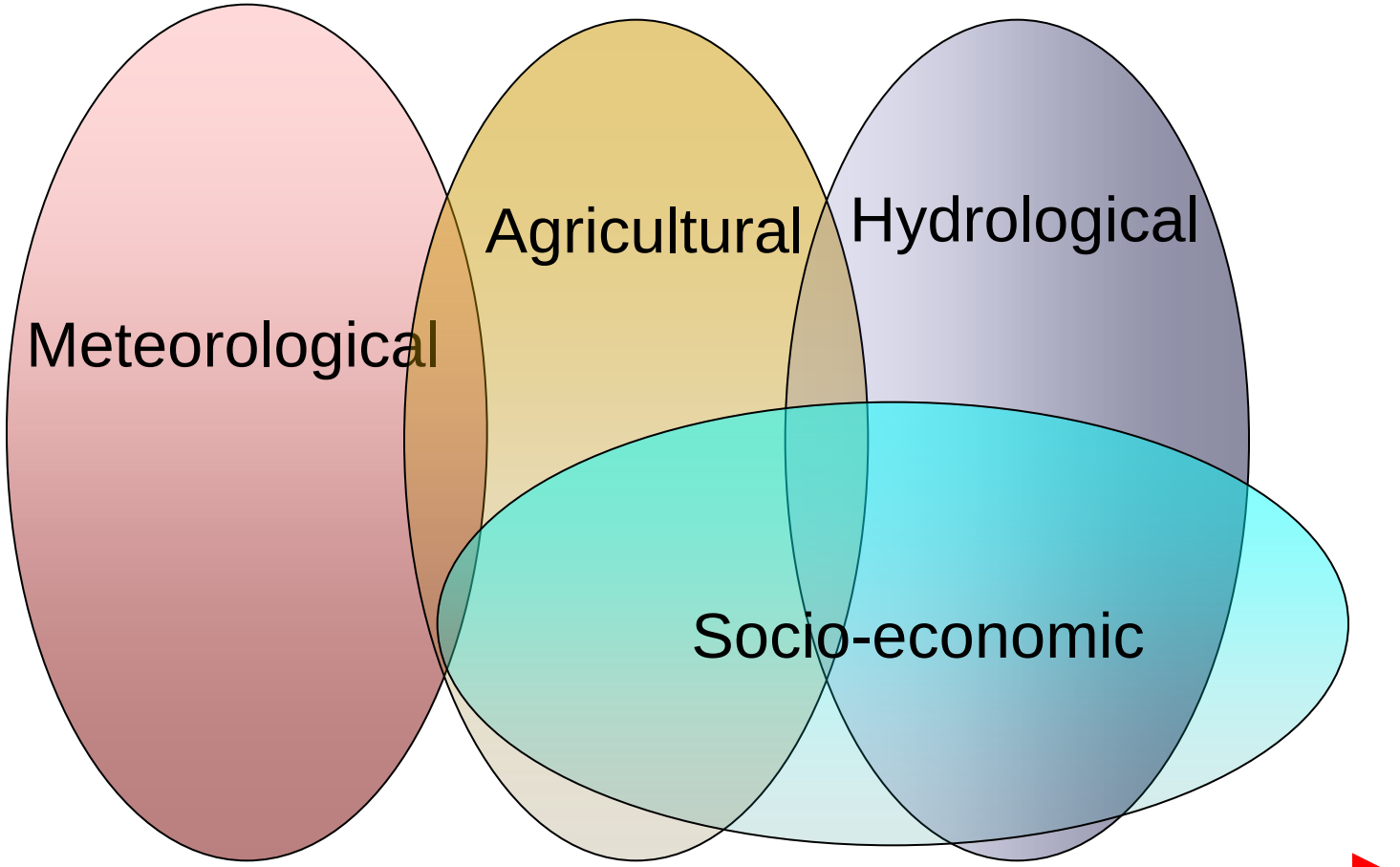
Drought
vs
Water scarcity

Natural and Social Dimensions of Drought

Decreasing emphasis on the natural event (precipitation deficiencies)

Increasing emphasis on water/natural resource management

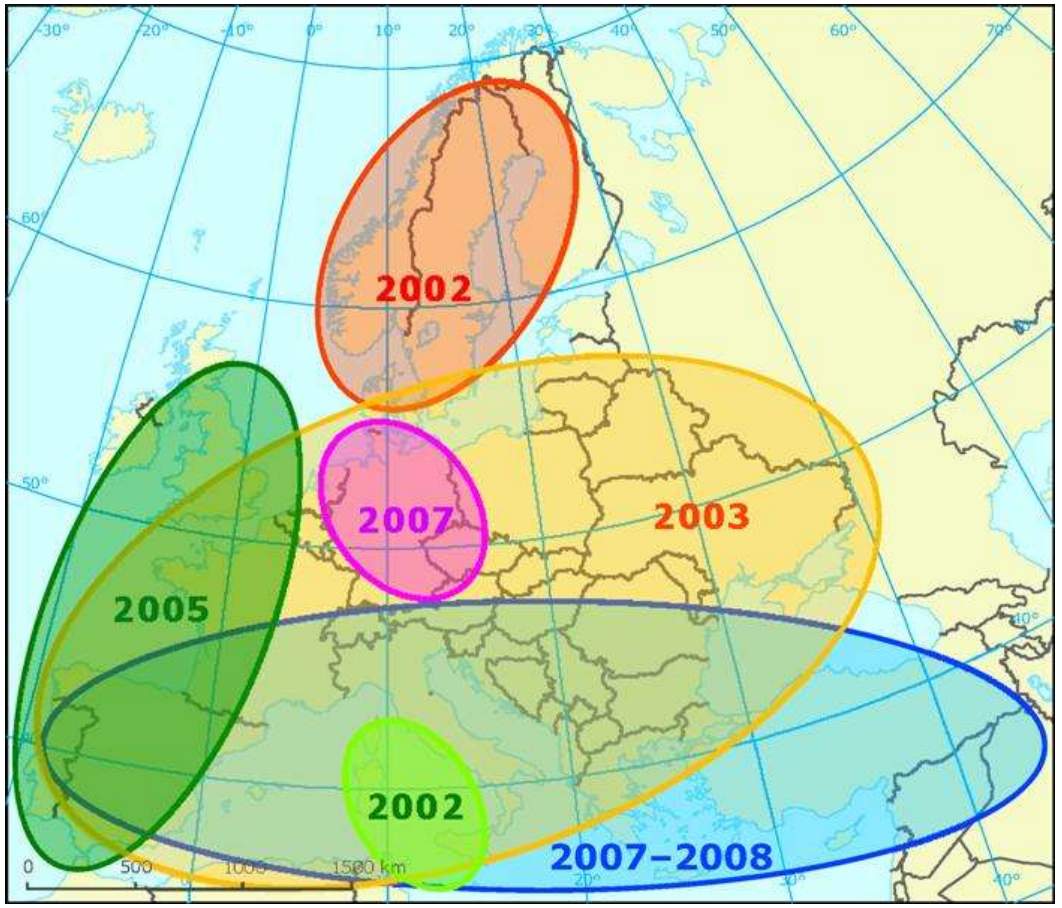
Increasing complexity of impacts and conflicts



Time/Duration of the event

Source: Wilhite 2006

Drought events in Europe
Impacts 2003



Rhin River 2003
Source:
Niemeyer

The drought of 2003 in Central and Western Europe has been responsible for an estimated economic damage of more than 12 billion Euro alone
(Munich Re 2004).

Many deaths mainly elder persons from unusually prolonged high temperatures.

Forest fires, subsidence and air pollution, power and water cuts and agricultural losses.

Current trends in Drought Management

Reflecting the three major components of Drought management :

- **Monitoring and early warning**
- **Risk and impact assessment**
- **Mitigation and response**

The current trends are moving towards:

- **Increased emphasis on drought policy and preparedness**
- **Improved drought monitoring tools and early warning systems**
- **Development of regional drought preparedness networks**

Drought Indices

Standardized Precipitation Index (SPI) McKee *et al.* (1993)

Based on Probability Distribution of Precipitation, with Normalization

Can Compute for Different Time Scales for Differing Applications

Can Determine Drought Intensity, Magnitude, & Duration, & Probability of Emerging from a Drought

Agriculture – Soil moisture related indexes - NDVI

Hydrology – Water reservoir level or ground water level

Standardized Precipitation Index (SPI)

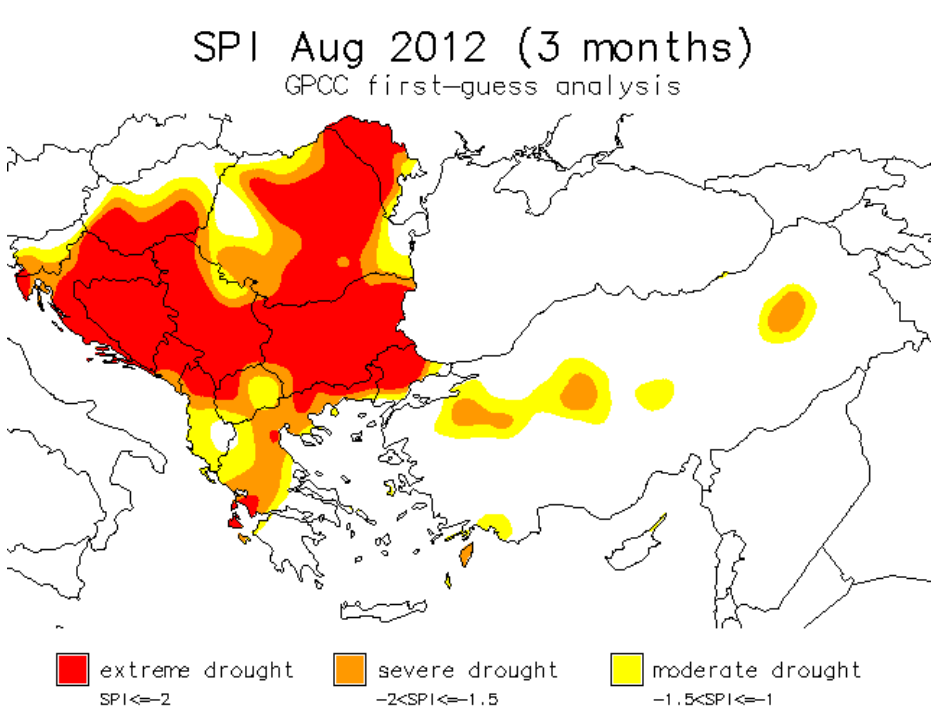
- **Inter-Regional Workshop on Indices and Early Warning Systems for Drought held in Lincoln, Nebraska, USA in December 2009 recommended it use. Approved by the WMO Congress in June 2011.**

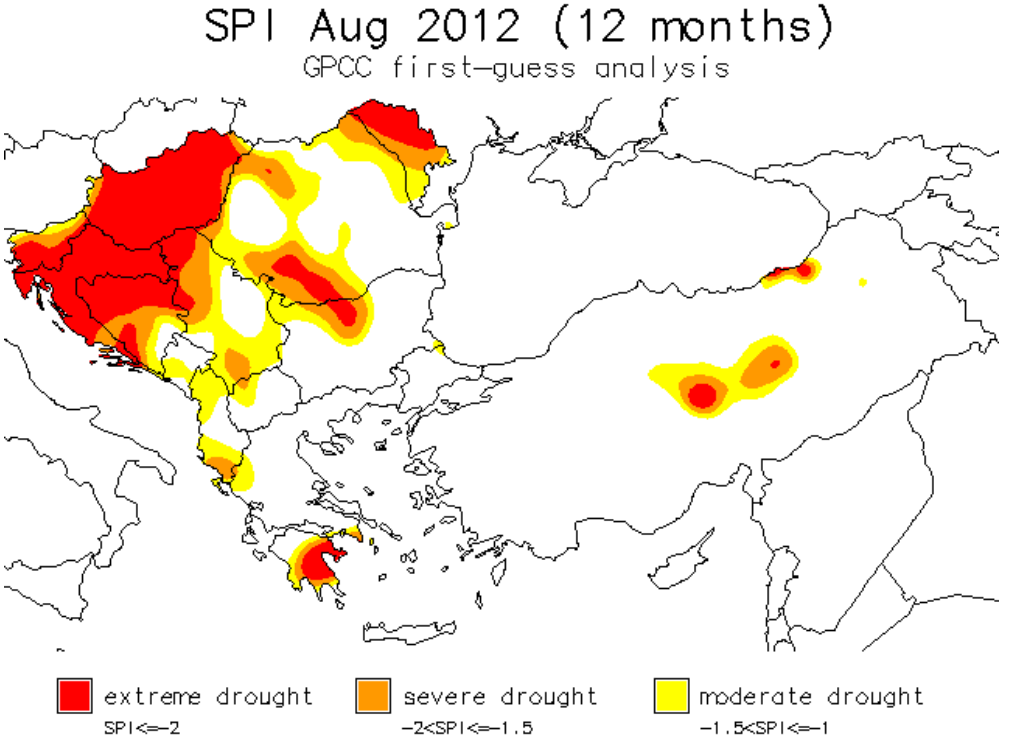
- **A SPI manual has been written**

- **The UN International Strategy for Disaster Risk Reduction (ISDR) asks for working groups on agricultural (June 2010 - Spain) and hydrological (Sept 2011 - Geneva) drought indices.**

- **WMO contributed to ISDR on a chapter on drought risks for the 2011 UN Global Assessment Report on Disaster Risk Reduction**

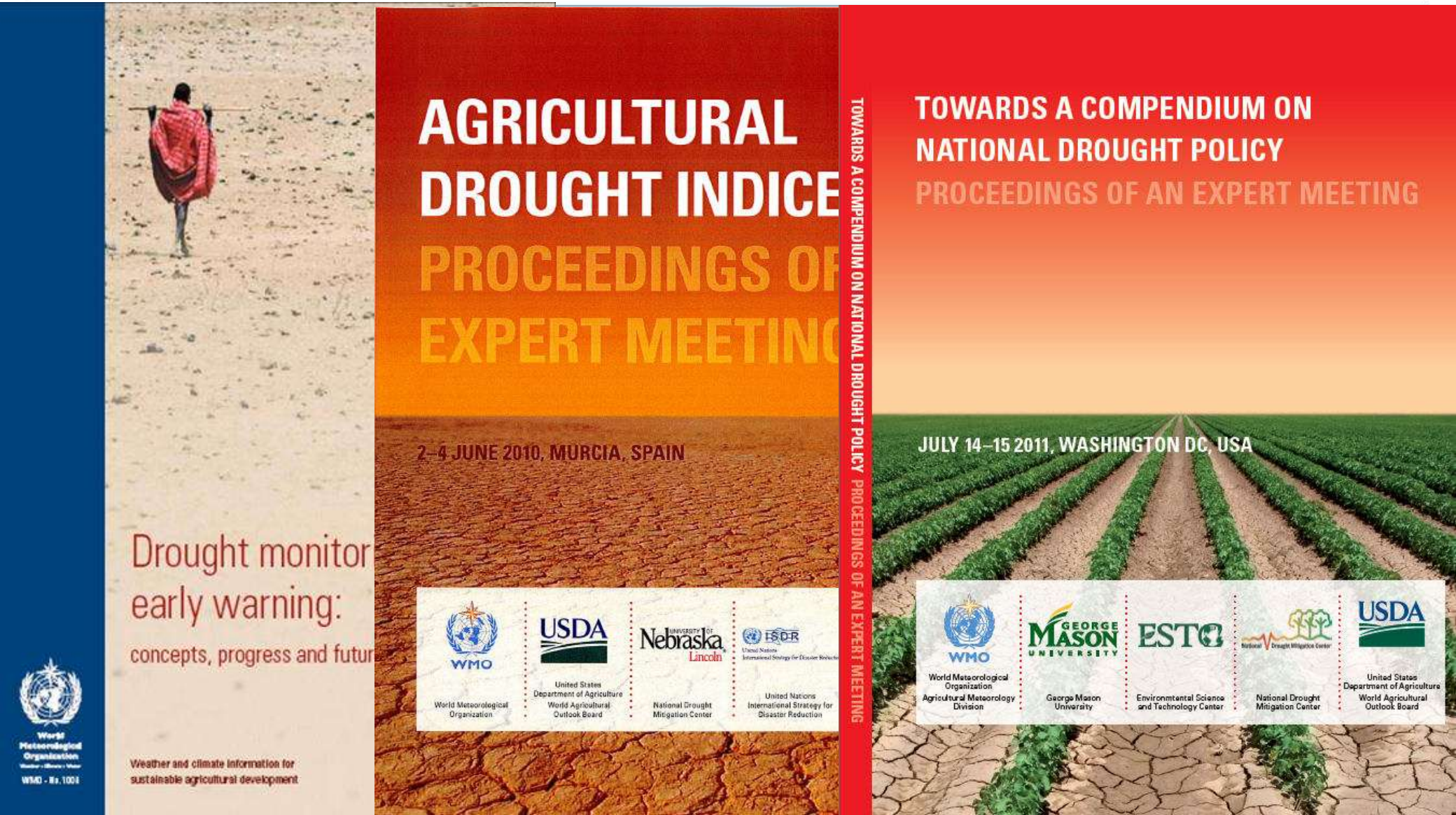
SPI – DMCSEE Drought conditions reflecting 3 months -12 months time period





WMO Publications on Drought

http://www.wmo.int/pages/prog/wcp/agm/publications.php



Global Framework for Climate Services and Regional perspectives

Global Framework for Climate Services

- 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.

World Meteorological Organization
Weather • Climate • Water

WORLD CLIMATE CONFERENCE - 3

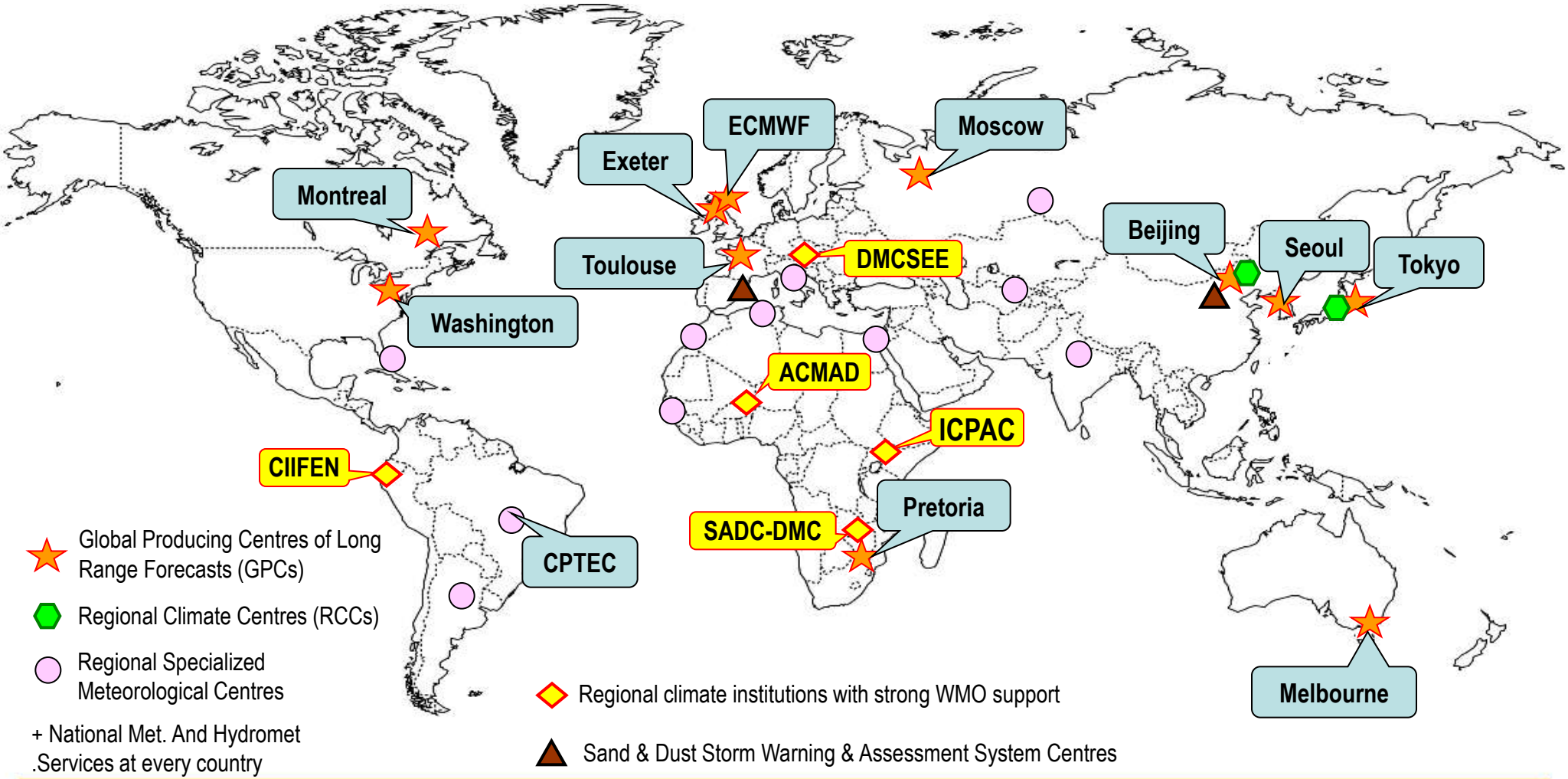
Geneva, Switzerland

31 August–4 September 2009

GFCS: Objectives

- **Provide a cooperative framework** in which all nations, International organizations, scientists and sectors will work together to meet the needs of users;
- **Enable users to benefit** from improved climate information and prediction;
- **Mobilize climate science globally** to advance the skills of seasonal-to-interannual and multi-decadal climate predictions to generate and provide future climate information on an operational basis;
- **Cooperative global infrastructure** to foster sharing new advances in science and information.

WMO network of institutions



DMCSEE

Drought Management Centre for Southeastern Europe

UNCCD

Home | Drought monitor | Links | Members section | News | Contacts

SQ BG HR MK HU RO SI TR SR **EN**

Drought Management Centre for Southeastern Europe - DMCSEE

Drought is a normal part of climate in virtually all regions of the world. South Eastern Europe is no exception; in past decades the drought-related damages have had large impact on the economy and welfare. Therefore the need to establish a Drought Center for SE Europe to alleviate the problems caused by drought in the area became evident at the end of the past century. The idea was further elaborated by International Commission on Irrigation and Drainage (ICID) and UN Convention to Combat Desertification (UNCCD). The UNCCD national focal points and national permanent representatives with the World Meteorological Organization have agreed upon the core tasks of the Drought Management Center for South Eastern Europe (DMCSEE) and the proposed project document.

The mission of the proposed DMCSEE is **to coordinate and facilitate the development, assessment, and application of drought risk management tools and policies in South-Eastern Europe with the goal of improving drought preparedness and reducing drought impacts**. Therefore DMCSEE will focus its work on monitoring and assessing drought and assessing risks and vulnerability connected to drought.

www.dmcsee.org

Founding countries:

- → Albania
- → Bosnia and Herzegovina
- → Bulgaria
- → Croatia
- → FYROM
- → Greece
- → Hungary
- → Moldova
- → Romania
- → Slovenia
- → Turkey
- → Montenegro
- → Serbia

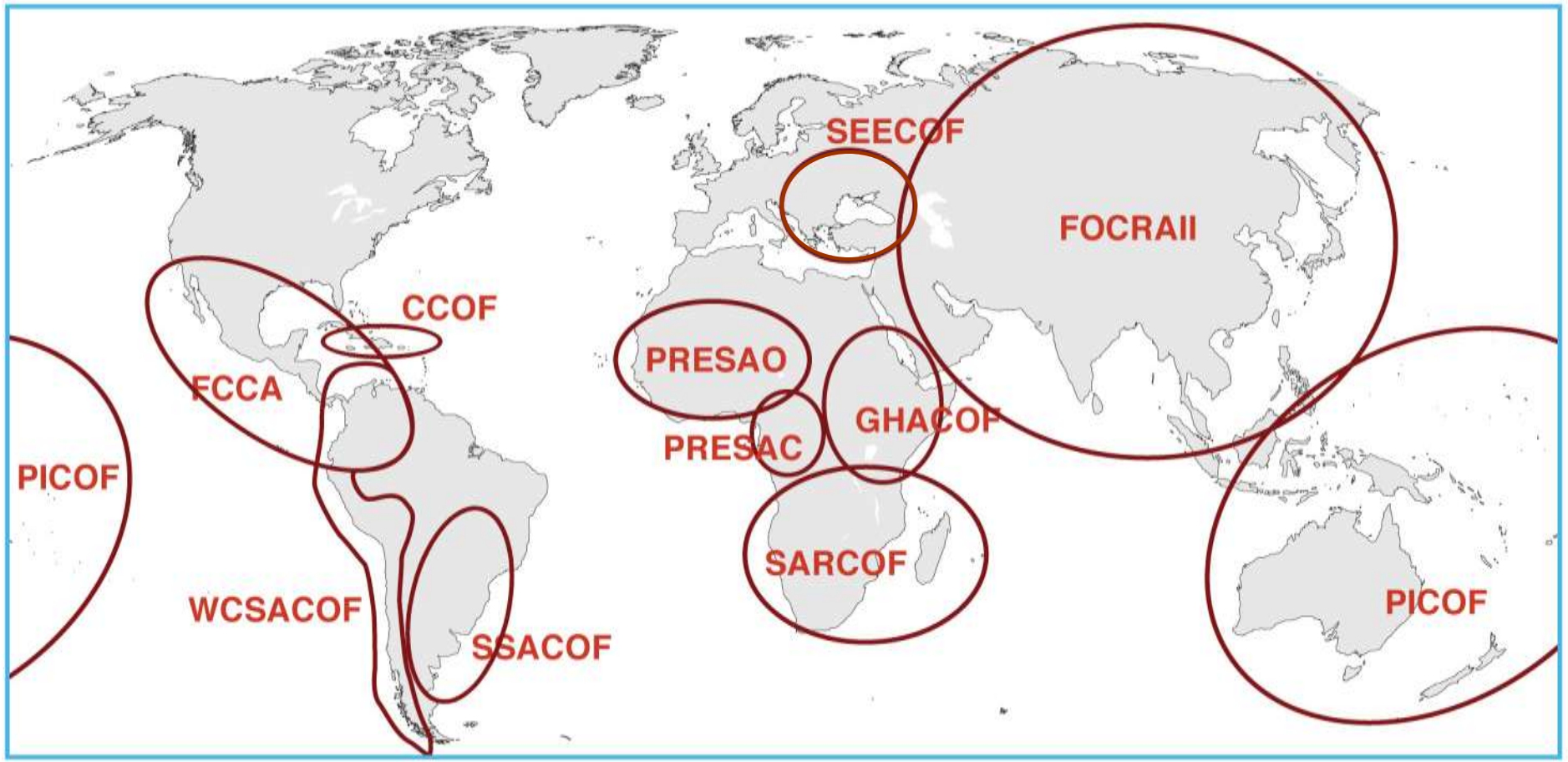
Founding agencies:

- → WMO
- → UNCCD

WMO working on establishing Drought Management Center for Central Asia (DMCCA)

- **WMO, United Nations Convention to Combat Desertification (UNCCD) and the Organization for Security and Cooperation in Europe (OSCE) working together to establish the DMCCA.**
- **Technical Seminar on preparation towards Terms of Reference for a Regional Drought Centre in Central Asia (20-21 November, 2007, Tashkent, Uzbekistan)**
- **Second Workshop on establishing a Drought Management Centre in Central Asia (May 2008, Kyrgyzstan)**
- **WMO Consultant visited the five Central Asian countries ie., Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan in November 2009 to consult with relevant organizations and institutions and prepare project proposal.**

Existing RCOFs worldwide



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

WMO OMM

High-Level Meeting on National Drought Policies (HMNDP)

11-15 March 2013

Why a HMNDP is needed ?

- **No concerted efforts have ever been made to initiate a dialogue on the formulation and adoption of national drought policies.**

- **Only Australia has a national drought policy which provides a clear description of when and how communities affected by droughts could seek drought relief under a legal framework.**

www.wmo.int/hmndp

High-level Meeting on National Drought Policy (HMNDP)

International Conference Centre (CICG), Geneva

11–15 March 2013

Key Partners for HMNDP
(Members of HIOC)

- ***UN Agencies:*** **UNCCD, ISDR, FAO, IFAD, WFP, UNESCO, UNWATER**
- ***International Organizations:*** **World Bank, ICRISAT, ICARDA**
- ***Regional Drought Monitoring Centres:*** **AGRHYMET, ACMAD, ICPAC, DMC (SADC), DMCSEE**
- ***Key National Organizations:*** **Australia, Brazil, China, India, Portugal, Spain, South Africa, USA (NOAA, USDA, NDMC), Russia, Korea (KMA)**

Integrated Drought Management Programme

Building drought resilience to support global poverty reduction

Extracted from Giacomo Teruggi presentation

Integrated Drought Management Programme

- **Integrated Drought Management (IDM) is a critical component of disaster risk reduction programmes, climate adaptation strategies and national water resources policies, bringing together the needs of the different stakeholders affected by droughts.**

- **Together with its partners, the joint WMO/GWP Integrated Drought Management Programme (IDMP) aims to provide preventive and demand-driven support mechanisms for the communities, countries and regions affected by drought.**

IDMP - history and background (1/2)

- **Development Phase of "Associated Programmes" initiated through the Global Water Partnership (GWP) in the late 1990'ies**
- **Idea: Develop an Associated Programme on Drought Management (APDM) alongside the Associated Programme on Flood Management (APFM)**
- **First Concept of APDM developed in HWRP in 2002**
- **Lobbying for APDM together with CHy and the then WCP, various papers addressing drought holistically**
- **Development of a joint WMO/GWP paper on drought risk management (2008)**
- **November 2010: First WMO/GWP consultation meeting with wide participation of potential partners – FAO, UNESCO-IHP, UNISDR, IFRC, WFP, ICPAC, JRC, USDA, Australian BoM, NDMC, NIDIS, University of Nebraska**

IDMP - history and background (2/2)

- **APDM to be built using the APFM success as a template, i.e. using main building blocks of APFM as elements of APDM such as:**
  - **Concept Paper (developed in 2011),**
  - **Case studies,**
  - **Side publications and "Tools",**
  - **Demonstration projects,**
  - **Capacity building activities,**
  - **HelpDesk on Drought Management involving Support Base Partners**
- **Added complexity: integration of water, weather and climate aspects in integrated drought management, together with the socio-economic domain and impact sectors (agriculture, water management, land-use, etc.)**
- **In the building up phase of an APDM: Co-development of the Programme by HWR and CLPA branches, together with GWP.**
- **Name changed to Integrated Drought Management Programme (IDMP), webpage created www.wmo.int/idmp, IDMP concept promoted at various meeting (e.g. WWF6)**

IDMP - Objectives

The central objective of IDMP is:

"To support stakeholders at all levels by providing policy and management guidance and by sharing scientific information, knowledge and best practices for Integrated Drought Management"

through actions aiming at:

1. building climate resilience;
2. reducing economic and social losses;
3. cutting across sectoral, disciplinary, and institutional jurisdictions;
4. responding to specific regional and national needs and requirements
5. alleviating poverty in drought-affected regions

IDMP - Approach

1. To shift the focus **from reactive to proactive** measures through drought mitigation, vulnerability reduction and preparedness;

2. To integrate the vertical planning and decision making processes at regional, national and community levels into a **multi-stakeholder approach** including key sectors, especially agriculture and energy;

3. To promote the evolution of the drought knowledge base and to establish a **mechanism for sharing knowledge** and providing services to stakeholders across sectors at all levels;

4. To **build capacity** of various stakeholders at different levels.

IDMP - Outputs and Products

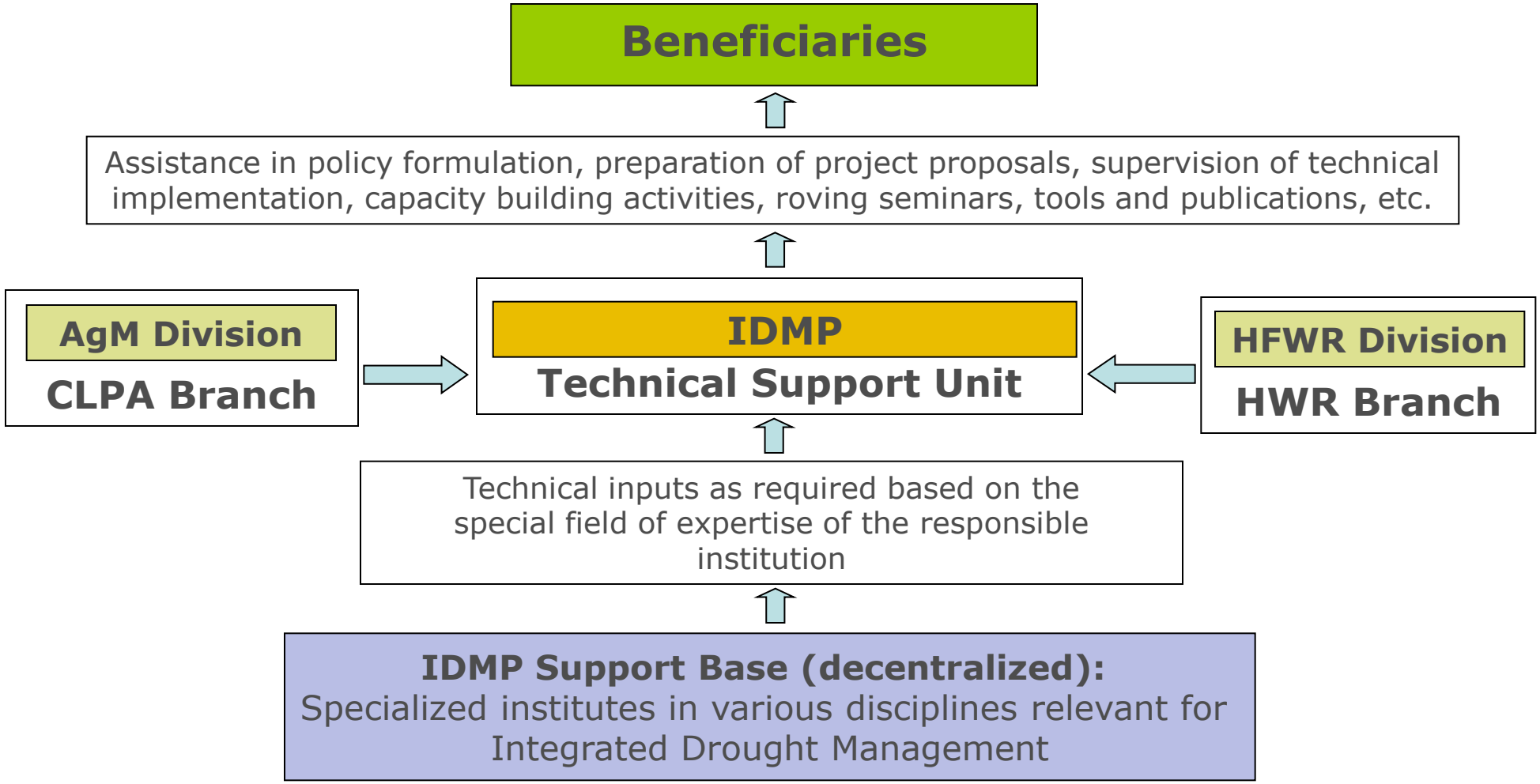
The expected services to be provided are:

1. A **coherent global framework** for drought management, prediction and monitoring by networking new and existing programmes and activities worldwide.
2. **Regional coordination** of drought monitoring, prediction and early warning activities
3. **Inception of pilot projects** and coordination of regional projects to showcase best practices
4. **Collection and dissemination of information** and knowledge on good practices in drought mitigation, preparedness and response;
5. **Guidelines, methodologies, tools** and supporting documentation on policy development and management practices and procedures;
6. **Capacity building** and advice on Integrated Drought Management, and
7. A **Drought HelpDesk** for the development of sound and appropriate drought policies and management plans by countries and regions, as well as the improved use of drought prediction services.

Should this not be sufficient…

Raindance (upon request only)

IDMP - Structure



IDMP - Next steps (1/2)

- Establishment of an Ad-hoc Steering Committee
- Development of a work plan and tentative budget
- Establishment of an IDMP Technical Support Unit (TSU)
- Interaction with GWP and key associated partners
- Integration and incorporation of WMO efforts on:
  - High-Level Meeting on National Drought Polices,
  - Drought Monitoring Centres,
  - Drought indices,
  - Roving seminars for farmers,
  - Regional Climate Outlook Fora,
  - Manual on Low Flow, etc.

IDMP - Next steps (2/2)

Once the Steering Committee and the TSU established, efforts will focus on the following:

1. Collection of **good practices and case studies** on Integrated Drought Management

2. Production of a **policy series**, to deepen the various **multisectoral aspects** of drought management:

   - Legal and Institutional Aspects
   - Social Aspects and Stakeholders involvement
   - Environmental Aspects
   - Economic Aspects

3. **Integration of WMO previous efforts** (e.g. drought indices, manual on low flow, establishment of drought monitoring centres, etc.) and adaptation of the concepts/results into a tool series

4. Mainstreaming current ongoing activities into a pool of **service deliverables** (e.g. roving seminars for farmers, existing drought monitoring centres and regional climate outlook fora, seasonal forecasting initiatives, etc.) and **pilot project** proposals accessible through a newly established **HelpDesk on Drought Management**

Conclusions

The IDMP will contribute to the global and local coherence of drought-related efforts of existing organizations and agencies with regard to:

- **Better scientific understanding** for drought management;
- An improved knowledge base, with **better access to information**, knowledge products and services;
- **Drought risk assessment,** monitoring, prediction and early warning;
- **Policy and planning** for drought preparedness and mitigation across sectors; and
- **Drought risk reduction** and drought response.

Thank you for your attention

Thank You / Ďakujem

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www.wmo.int/agm