



World Meteorological Organization
Working together in weather, climate and water

Overview of WMO Drought Activities

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Overview of WMO



World Meteorological Organization

- United Nations 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)**
- Commission for Atmospheric Sciences (CAS)
- Commission for Basic Systems (CBS)
- Commission for Climatology (CCI)
- **Commission for Hydrology (CHy)**
- Commission for Instruments and Methods of Observation (CIMO)
- Joint WMO-IOC Commission for Oceanography and Marine Meteorology (JCOMM)



WMO priority Areas

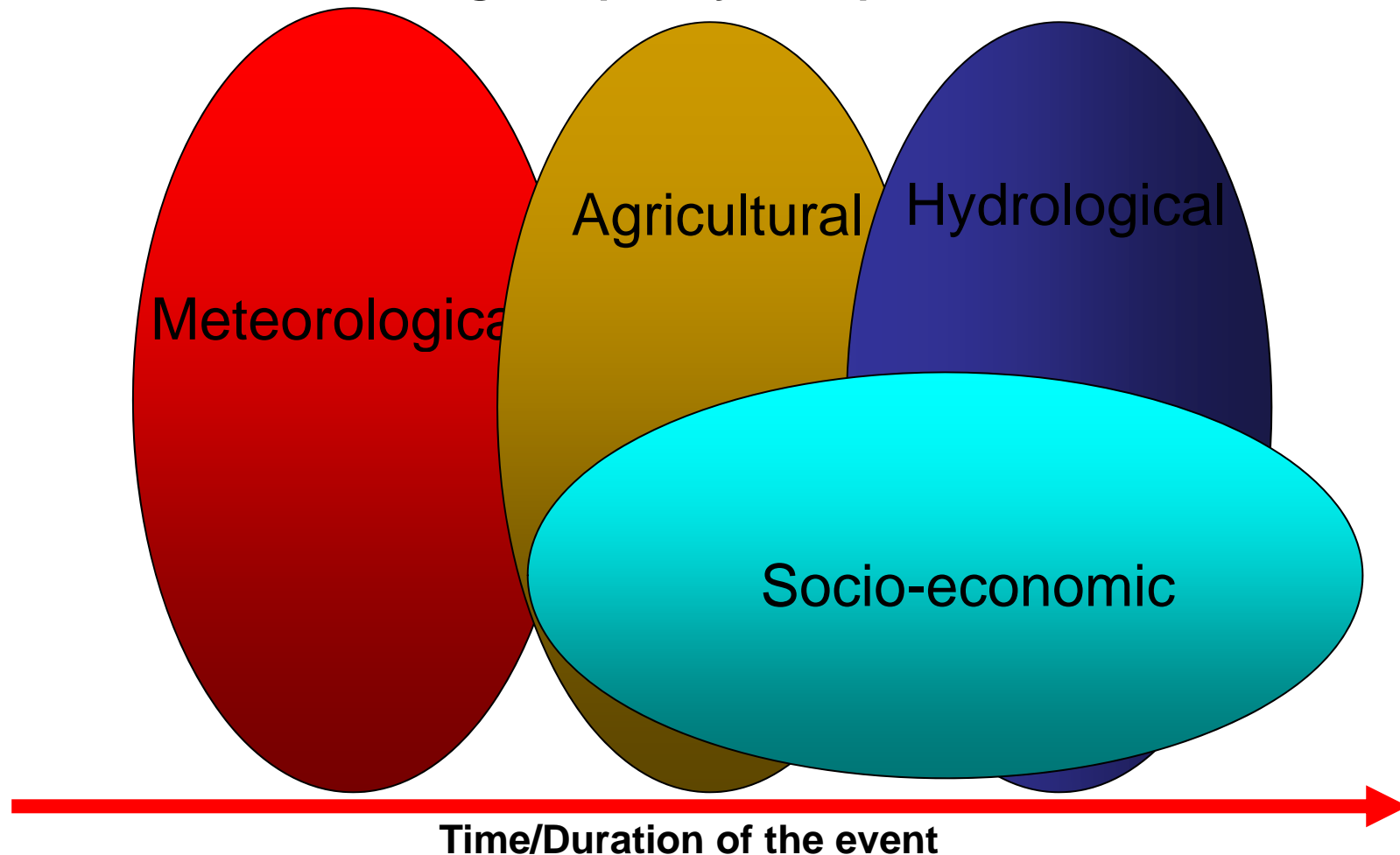
- **Global Framework for Climate Services;**
- **Aviation meteorological services;**
- **Capacity-building for the developing and least developed countries;**
- **Implementation of the WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS);**
- **Disaster risk reduction - Drought**

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





WMO Supports Developing Countries Through National and Regional Projects

- **Modernization of NMHSs and observing networks.**
- **Implementation of national operational multi-hazard early warning systems.**
- **Strengthening of hazard analysis and hydro-meteorological risk assessment tools.**
- **Strengthening NMHSs cooperation with civil protection and disaster risk management agencies.**
- **Coordinated training and public outreach programmes.**



DMCSEE

*Drought Management Centre
for Southeastern Europe*



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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



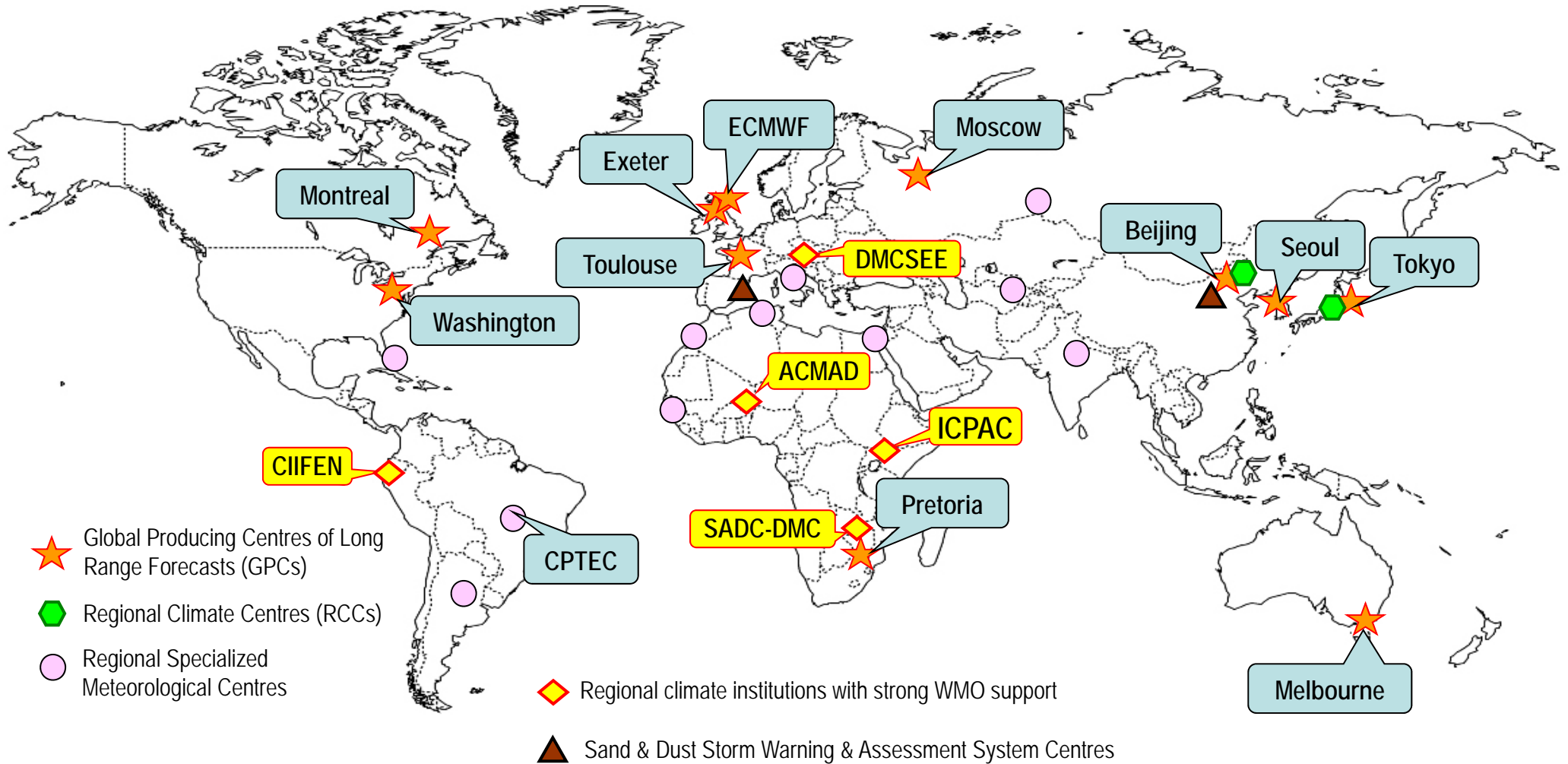
WMO working on establishing Drought Management Center for Central Asia (DMCCA)

- 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 i.e., Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan in November 2009 to consult with relevant organizations and institutions and prepare project proposal.





WMO network of institutions





WMO Publications on Drought

Drought monitoring and early warning:
concepts, progress and future challenges

World Meteorological Organization
Weather and climate information for sustainable agricultural development
WMO - No. 1001

Early Warning Systems, Preparedness and Drought Management

World Meteorological Organization

AGRICULTURAL DROUGHT INDICES
PROCEEDINGS OF AN EXPERT MEETING

2-4 JUNE 2010, MURCIA, SPAIN

WMO
United States Department of Agriculture World Agricultural Outlook Board
UNIVERSITY OF Nebraska Lincoln
United Nations International Strategy for Disaster Reduction
Government of Spain Ministry for Environmental, Rural and Marine Affairs Hydrographic Confederation of Segura



Drought Indices



Lincoln Workshop

- **Inter-Regional Workshop on Indices and Early Warning Systems for Drought held in Lincoln, Nebraska, USA from 8 to 11 December 2009**
- **Co-Sponsors:**
 - National Drought Mitigation Center (NDMC)
 - United States Department of Agriculture (USDA)
 - United States National Oceanic and Atmospheric Administration (NOAA)
 - United Nations Convention to Combat Desertification (UNCCD)
 - University of Nebraska-Lincoln, School of Natural Resources
 - World Meteorological Organization

http://www.wmo.int/pages/prog/wcp/agm/meetings/wies09/index_en.html



Workshop Objectives

- To review and assess drought indices currently used around the world for the three types of drought (**meteorological, agricultural, and hydrological**);
- To review and assess the **strengths, weaknesses and limitations** of existing drought indices and early warning systems;
- To develop a **consensus standard index** for each of the three types of drought;
- To develop guidelines for WMO Members in implementing and improving drought early warning systems.



Lincoln Declaration - Recommendations

- **The National Meteorological and Hydrological Services (NMHSs) around the world are encouraged to use the Standard Precipitation Index (SPI) to characterize meteorological droughts and provide this information on their websites, in addition to the indices currently in use.**
- **A comprehensive user manual for the SPI should be developed that will provide a description of the index, the computation methods, specific examples of where it is currently being used, the strengths and limitations, mapping capabilities, and how it can be used.**



Current Actions

- The recommendation on the SPI was approved by the **WMO Congress** in June 2011.
- A **SPI manual** is currently being prepared and should be released by early 2012.
- The **UN International Strategy for Disaster Risk Reduction (ISDR)** provided funding for the meetings of the working groups on agricultural (**June 2010 - Spain**) and hydrological (**Sept 2011 - Geneva**) drought indices.
- With these recommendations, WMO contributed to ISDR on chapter on drought risks for the **2011 UN Global Assessment Report on Disaster Risk Reduction**.



High-Level Meeting on National Drought Policies (HMNDP)



Why a HMNDP is needed ?

- **Despite repeated occurrences of droughts throughout history and large impacts on different socio-economic sectors, no concerted efforts have ever been made to initiate a dialogue on the formulation and adoption of national drought policies.**
- **HMNDP could ensure that government actions transcend far beyond the conventional reactive approaches.**
- **It has been demonstrated traditional drought assistance or relief programs actually result in less self-reliance and more dependence on governments, increasing the vulnerability of sectors to future drought events.**



Why a HMNDP is needed ? (2)

- **A high level meeting could help develop such a new approach through**
 - **developing a common understanding of the issues involved,**
 - **discussing the different approaches that could be incorporated into a national drought policy and**
 - **finally establishing a framework of a national drought policy that could help all the nations around the world.**



Suggested Steps for Organization of HMNDP

- WMO Congress approved this proposal (May 2011).
- Develop a comprehensive concept note on national drought policy through an Expert Meeting (July 2011) followed by meeting of the **HMNDP International Organizing Committee (HIOC)** (Dec 2011).
- Organize a Symposium on Integrated Drought Information System (SIDIS) and refine the concept note further (Oct 2011).
- Engage diplomatic missions in Geneva to seek their comments on the concept note (late 2011/early 2012).



Suggested Steps for Organization of HMNDP (2)

- Organize second meeting of HIOC to discuss and finalize programme for HMNDP (March 2012)
- Organize second meeting with missions (May 2012), get their final endorsement of the revised concept note and programme for HMNDP.
- Organize the HMNDP (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)
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Integrated Drought Management Programme (IDMP)



Proposed Integrated Drought Management Programme

- **WMO** and the **Global Water Partnership** are proposing an **Integrated Drought Management Programme**. Similar to APFM
- **Targeting intergovernmental, governmental and non-governmental organizations** involved in drought monitoring, prediction, drought risk reduction and management.
- Primary beneficiaries are expected to be **governmental institutions, agencies** responsible for developing **drought management policies** and/or implementing systems for **drought monitoring, prediction, preparedness and mitigation**.
- The principal approach to **develop global co-ordination** of efforts to **strengthen drought monitoring, risk identification, drought prediction and early warning services** and development of drought management knowledge base.



Proposed Integrated Drought Management Programme (cont)

- **The expected services to be provided are:**
 - **Regional coordination** of drought monitoring, prediction and early warning activities
 - **Inception of pilot projects** and coordination of regional projects to showcase best practices
 - **Collection and dissemination** of information and knowledge on good practices;
 - **Guidelines, methodologies, tools** and supporting documentation on policy development and management practices and procedures; and
 - **Capacity building** and advice on Integrated Drought Management.



Current Actions - IDMP

- **Draft Concept Note** is being revised. Final version will be sent to donors by end of 2011.
- **Ad-hoc Steering Committee** will be established Fall 2011.
- **Creation of IDMP and HMNDP webpages** will be created in Fall 2011.
- The IDMP concept will be promoted at various meetings (UNCCD COP-10, UNFCCC COP-17, AGU, etc)
- IDMP will **integrate and eventually incorporate** WMO efforts on drought indices and HMNDP

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.



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Thank You

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