Managing the Enigma of Drought: It's Not About our Toolsets, It's About our Mindset!

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Geneva, Switzerland September 30 – October 2, 2024





Rationale for HMNDP

Breaking the HYDRO-ILLOGICAL CYCLE: An Institutional Challenge for Integrated Drought Management

Related Actions:

- ✓ reactive, post-impact
- \checkmark poorly coordinated
- ✓ poorly targeted
- \checkmark untimely
- ✓ ineffective





Visionary Progress: "If I have seen further, it is by standing on the shoulders of giants." (Sir Isaac Newton)



Adopted from Wilhite (1991, 1997, 2000)



Wilhite and Sivakumar (2000)









HIGH-LEVEL MEETING ON NATIONAL DROUGHT POLICY

(HMNDP) TOWARDS MORE DROUGHT RESILIENT SOCIETIES

11-15 March 2013 CICG, Geneva

Final Report







HMNDP: Objective

Geneva, March 2013

HMNDP: Objective

The objective of the HMNDP was to provide practical insight into useful, science-based actions to address the key drought issues being considered by governments and the private sector under the UNCCD and the various strategies to cope with drought.



Consultation meetings were held prior in Boulder, CO and Geneva in 2010 and at the World Water Week in Stockholm



GWP IN ACTION + News and Activities

Making a difference on the ground

International Year of Water Cooperation 2013

+ Events

+ Caribbean + Central Africa + Central America + Central and Eastern Europe

+ Central Asia and Caucasus

+ Eastern Africa

+ China

+ Mediterranean

+ South America + South Asia

+ Southeast Asia + Southern Africa + West Africa

Consultation Meeting on the Proposed Integrated Drought Management Programme



Posted: 2010-09-27

The successes of the WMO/GWP Associated Programme on Flood Management over the last 10 years illustrate the integrated approach to flood management.

The lessons learned and the experiences of this joint programme will inform the development of a proposed new Programme on Integrated Drought Management. Potential Partners in this new programme are invited to an initial Consultation Meeting to discuss its concept and structure on 15-16 November 2010 in Geneva, Switzerland.

GWP Publications

Read more about this event in the invitation (pdf).



External Links







HMNDP: Outcomes

A few examples that were catalysts for moving from MANAGING DISASTERS TO MANAGING RISKS

Geneva, March 2013



IDMP Background

IDMP was launched by WMO and GWP in 2013 at the High-Level Meeting on National Drought Policies (HMNDP) to support implementation of the HMNDP outcomes

[Excerpt of HMNDP final declaration, emphasis added]

- Develop proactive drought impact mitigation, preventive and planning measures, risk management, fostering of science, appropriate technology and innovation, public outreach and resource management as key elements of effective national drought policy
- Promote greater collaboration to enhance the quality of local/national/regional/global observation networks and delivery systems
- **Improve public awareness of drought risk and preparedness for drought**
- Consider, where possible [...]risk reduction, risk sharing and risk transfer tools in drought management plans
- Link drought management plans to local/national development policies



IDMP Partners

FAO Food and Agriculture Organization of the United Nations

UNCCD United Nations Convention to Combat Desertification

UN CBD UN Convention on Biological Diversity

IAEMET Spanish Meteorological Agency

Australian Bureau of Meteorology

CONAGUA Mexico's National Water Commission

FEWS NET Famine Early Warning Systems Network

George Mason University Global Environment and Natural Resources Institute

ICARDA International Center for Agricultural Research in the Dry Areas

ICID International Commission for and Drainage

IMTA Mexican Institute of Water Technology

IWMI International Water Management Institute

JRC Joint Research Centre

SEI Stockholm Environment Institute

NDMC U.S. National Drought Mitigation Center

NIDIS U.S. National Integrated Drought Information System

UNDP Cap-Net

UNDP United Nations Development

Progamme

UNESCO United Nations Educational, Scientific and Cultural Organization

UNEP United Nations Environment Programme

UNISDR United Nations Office for Disaster Risk Reduction

University of Nebraska Daugherty Water for Food Institute

University of Southern Queensland

UNU Flores

Irrigation

World Bank

A series of 6 workshops were sponsored and conducted by the WMO, FAO, **UNCCD, UN-Water** and the Convention on Biological **Diversity** (Eastern Europe, Latin America, Africa and Asia)

Timeline of the Workshops

6 workshops were undertaken between 2013-2015







The IDMP supports governments and other stakeholders at all levels on implementing Integrated Drought Management by providing policy, technical and management guidance and by sharing scientific knowledge and best practices.

News IDMP Helpdesk



There are a number of efforts at the national level supported by the IDMP. Click on the dots on the map to find out more.

About Drought Pillars





www.DroughtManagement.info



Drought Risk Management: The Three Pillars

 Overall purpose: preparedness planning based on these *pillars of risk reduction* leads to successful drought policy and increased resilience







http://www.droughtmanagement.info

Setting the Stage: Changing our Mindset

Context: Terms Related to Conditions of Low Water Availability

	Short/Mid Time Scale or Temporary	Long Time Scale or Quasi-Permanent	
Natural	Drought	Aridity	
Man-made	Water Scarcity	Desertification	

Pereira et al. 2002, Van Loon and Van Lanen 2013



Flash Drought: Changing our Mindset...droughts are "only" slow onset disasters?"

Droughts span an enormous range of temporal and spatial scales....not at all unlike the anticipated behavior of climate change...but on the shorter scale, flash droughts reinforce the need to address drought as a systemic risk given the implications of rapid drought intensification. (Otkin et al. 2022, BAMS)



Source: The Conversation; Image: Ailie Gallant, author-provided



The complexity of drought, drought impacts, drought response, and systemic risks

UN Office for Disaster Risk Reduction (UNDRR)

G∀R

Global Assessment Report on Disaster Risk Reduction

Special Report on

016





Due to the widespread & cascading impacts – often not explicitly attributed to drought – damage & costs are usually seriously underestimated

Major categories from the Baseline Assessment of Drought Impact Collection & Monitoring Efforts

Organized by the U.S. National Drought Mitigation Center, University of Nebraska-Lincoln

for the Integrated Drought Management Program, in press, 2024

- Develop a baseline
- You can't measure what you don't monitor!
- We need to collect impact data in the same way we collect rainfall and temperature
- Event-driven databases
- In-situ condition & impact monitoring
- Media monitoring
- Food and water security monitoring
- Data that may show a drought signal (tying impacts to indicators)



Impacts: The Face of Drought



🧻 sucho snižuje výnos

l výnos

sucho zásadně snižuje

kukuřice

萨 vinná réva

😪 ovocné stromy

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INVENTORYING HAZARDS & DISASTERS

WORLDWIDE SINCE 1988

EM-DAT contains data on the occurrence and impacts of over 26,000 mass disasters worldwide from 1900 to the present day. The database is compiled from various sources, including UN agencies, non-governmental organizations, reinsurance companies, research institutes, and press adencies. The Centre for Research on the Enidemiology of Disaster



půda mírně vlhká, možné zformovat, ale nízká soudržnost

půda vlhká, dobře tvarovatelná

nelze hodnotit

půda velmi vlhká, ulpívá na prstech



https://droughtimpacts.unl.edu/Tools.aspx





Convergence of Evidence: The Combined Drought Indicator Decade

Combined Drought Indicator (CDI) EAST AFRICA DROUGHT WATCH FACTSHEET

















UNCCD Drought Activities



The Drought Initiative focuses on:

Land & life Our work & impact Science News & stories Events Convention







- •Setting up drought preparedness systems, particularly national drought plans
- •Working together at the **regional level** to reduce drought vulnerability and risk
- •Providing a **toolbox** that stakeholders can use to boost the drought resilience of both people and ecosystems



In addition:

- Science Policy Interface (including Drought Working Group)
- Intergovernmental Working Groups (1 + 2) on Drought

International Drought Resilience Alliance (IDRA)

What you need to know about drought...

85% 1 in

People affected by drought People affected by drought globally in 2022-2023

who live in low- and middleincome countries

Increase in droughts since the year 2000

29%

Extent to which global Sand and dust storms driven freshwater demand is by human activity, including projected to outstrip supply by human-made droughts

25%

... and drought resilience

10x

3x For every USD 1 spent in building Drought resilience investments have an up to tenfold retum on investmentt resilience there are up to USD 3 in

benefits from avoided losses reduced

need for humanitarian aid.

23k **5%**

40%

2030

Improving early warning systems could save 23,000 lives and up to USD 2 billion assistance for disasters that was in developing countries every year.

Percentage of official development allocated to preparedness in the past decade

Sign up for the Drought Resilience in Focus Newsletter



Get quarterly updates on drought and the ways IDRA members and partners are proactively tackling it.





International Drought Resilience Alliance

The global coalition for a drought-resilient future.

IDRA mobilizes political, technical and financial capital to enhance drought resilience in countries, cities, and communities.

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Organizations

ADB Asian Development Basis	Association for Indigenous Version and People al Deal	Convention on Biological Diversity	COVE Development Data at Later America	European Bank Encounter Bank for Restantisement Consistential	Food and Agriculture Organization of the Usahed Mattern
Giobal Water Partnership Gastal Water Partnership	Greater Chivatte Ford	Inter-American Development Bart	International Fund for Agricultural Development	Determinational Design for Conservations of Refaces	Internet seel fisher Management meth.re Venemod-snak Water Heragement hastbude
Permanent interstate Committee for drought control. In the Solid	The Certiful American Historization System	The Commonwealth	The Decision Service of the Climate Commission for the Climate Commission for the Safet Region	gef	The Nature Conservancy
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OCHA United Valion Office for the Coordination of Humanitation Affain	Wind Veherological Ogenization	World Window Fund			



FAO Drought **Initiatives**

WASAG – The Global Framework on Water Scarcity in Agriculture



Water and migration Drought preparedness Financing mechanisms Water and nutrition Sustainable agricultural water use Saline agriculture

Food and Agriculture Organization of the United Nations

Guidelines on

institutional

coordination

for drought

management

WASAG has established the six following thematic working groups, which are led by its partners: DROUGHT FINANCING MIGRATION PREPAREDNESS

Key Documents

- WASAG Flyer
- WASAG Strategy for 2021-2024
- The Praia Commitments
- The Rome Statement on Water Scarcity in Agriculture

COAG Resolution (27th session)

COAG Resolution (26th Session)

1st WASAG International Forum – Executive summary







DROUGHT: Future Challenges and Opportunities

- 3-Pillars are indeed the *umbrella of resilience!*
 - We are all talking the same language now
 - Proactive vs. reactive paradigm shift is in place
- Focus is now on *building resilience* to drought through integrated risk management
 - Mitigation *applications* at the national/sub-national levels
 - Planning
 - Decision support
 - Improved drought monitoring and early warning information systems
- Increased *collaboration and coordination* around the world by a variety of partners



DROUGHT: Future Challenges and Opportunities

- Finish: *Implementation*
 - better risk management/governance/innovative
 - inclusive collaborations (e.g. indigenous and local knowledge, gender, youth)
- Climate change/*flash/eco droughts*
- Public *health* issues
- Predictions across the *subseasonal-to-seasonal* (S2S) spectrum
- Trans-boundary issues
- Food and water (in)security
 - climate shocks



DROUGHT: Future Challenges and Opportunities

It's not about our toolsets, it's about our MINDSET!







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