

# The Challenges of Drought Preparedness: Lessons Learned and the Path Forward

Dr. Donald A. Wilhite  
Professor and Director Emeritus  
School of Natural Resources  
University of Nebraska-Lincoln

*Benefits of Action/Costs of Inaction Workshop  
Sponsored by the World Bank, NOAA and IDMP  
April 26-27, 2017*



# Current/Future Drought Management Concerns

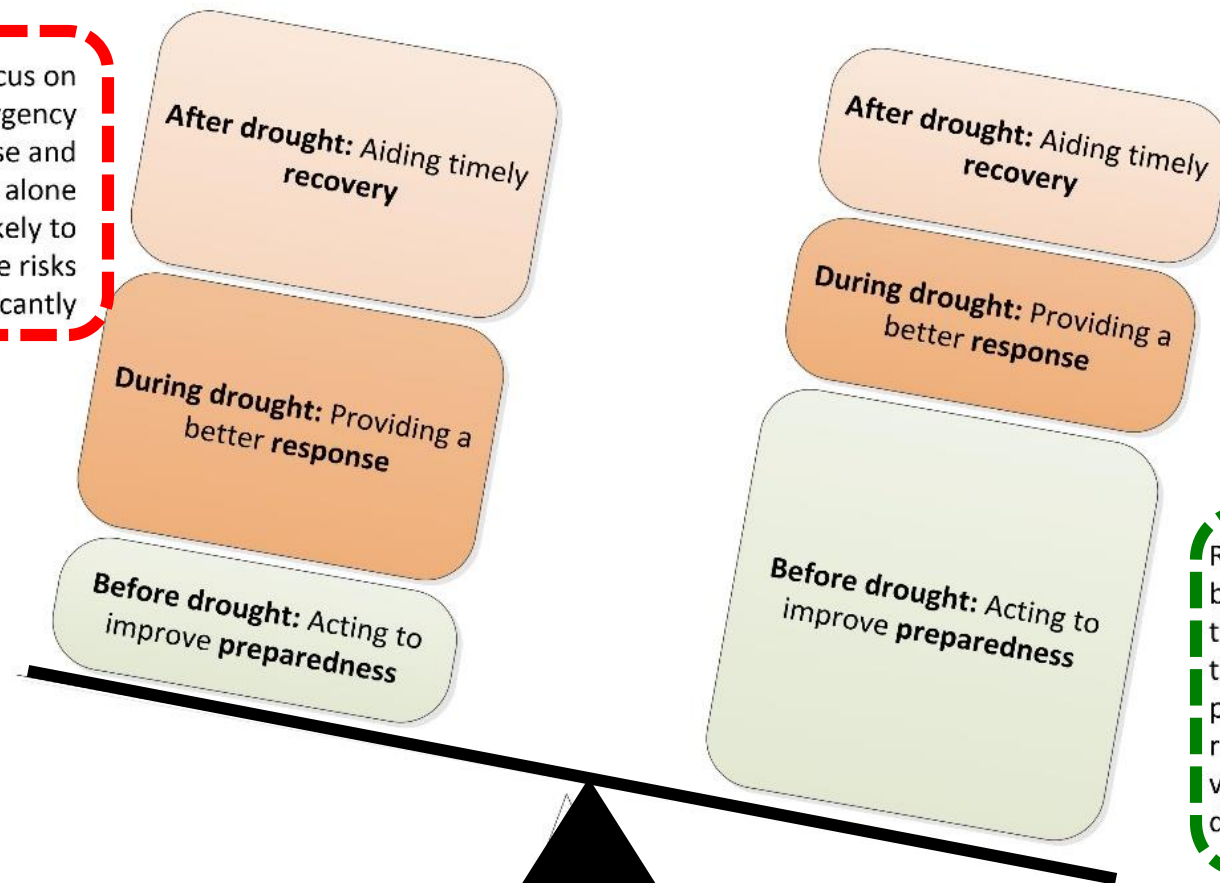
- Past drought management efforts have been reactive (costly, untimely, ineffective & poorly coordinated).
- Impacts are increasing and becoming increasingly complex across sectors, demonstrating increasing vulnerabilities.
- Impact assessments are lacking, no consistent methodology. Costs/losses not well documented.
- Drought impacts retard/set back development efforts.
- Climate change is and will continue to alter the frequency, severity and duration of droughts for many regions—increasing costs and reducing recovery times.
- Given increased drought incidence and upward spiraling impacts, **how can we convince policy makers that drought preparedness and the application of the principles of risk management are worthy of upfront investments?**



# Strategic Risk-based Approach for Building Drought Resilience

Determining the right balance of measures:  
A portfolio approach

A focus on emergency response and recovery alone is unlikely to reduce risks significantly



Risks tend to be best managed through a portfolio that is bias towards preparedness and reducing the vulnerability to drought



# Crisis vs. Risk Management: Characteristics, costs and benefits

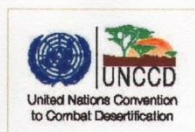
## Crisis Management

- Expensive
  - Costs + costs of inaction
  - Repeats past mistakes
- Post-impact
  - Drought relief/emergency assistance
- Rewards poor resource management
- Treats the symptoms of vulnerability, i.e., impacts
- Increases vulnerability, reliance on assistance from government & donors

## Risk Management

- Investment
  - Short-term—EWS, building networks, collaborations, institutional capacity
  - Long-term—structural adjustments, policy shifts
- Pre-impact
  - Risk assessments, mitigation
- Identifies and addresses the root causes of vulnerability
- Promotes improved stewardship of natural resources
- Reduces vulnerability, builds self-reliance, reduces need for gov't. & donor interventions
- Assists climate change adaptation





# HIGH-LEVEL MEETING ON NATIONAL DROUGHT POLICY

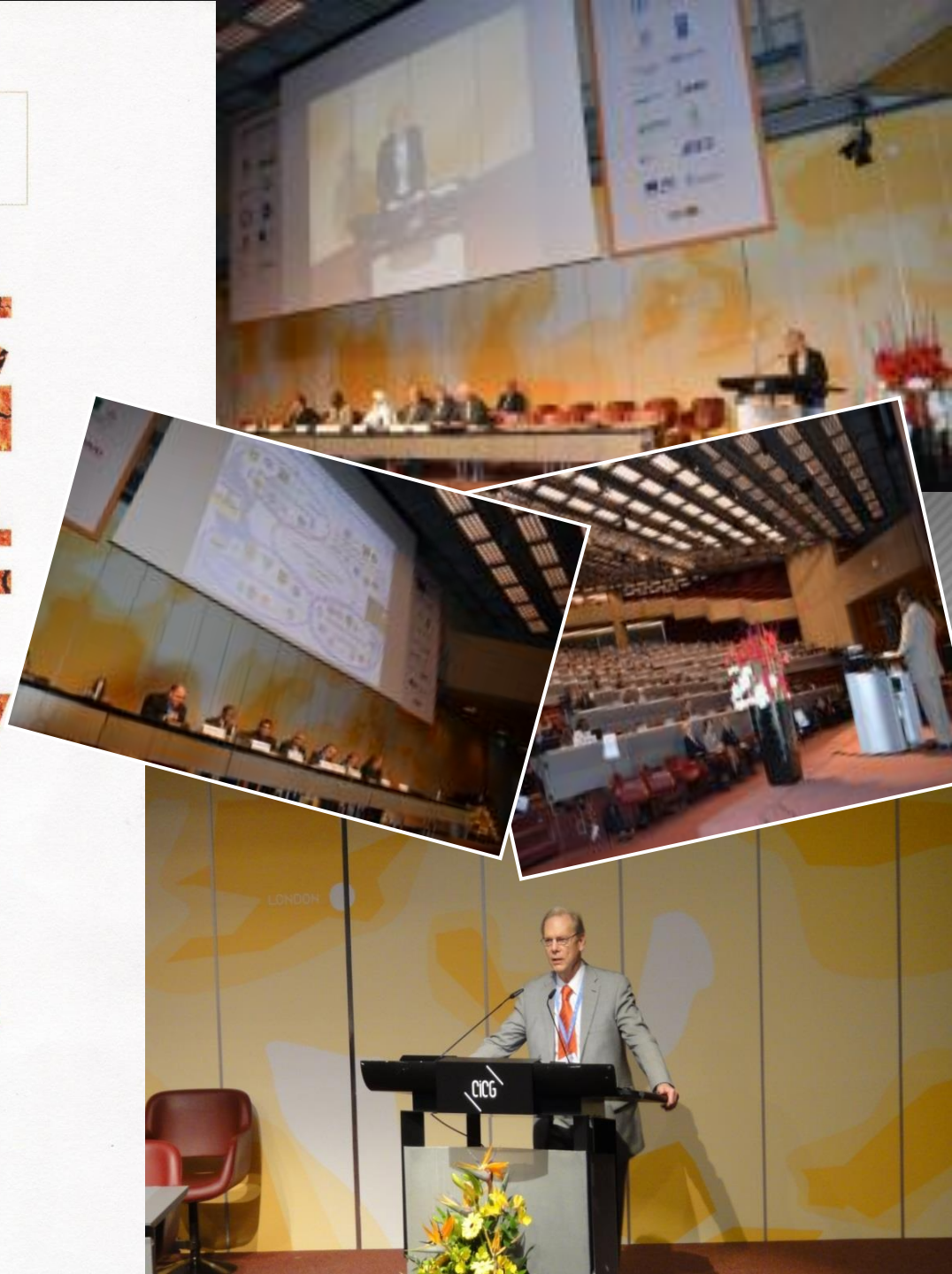
(HMNDP)

TOWARDS MORE DROUGHT RESILIENT SOCIETIES

11-15 March 2013

CICG, Geneva

**Final Report**







## National Drought Policy

Preparedness Plans developed and implemented based on the principles of risk reduction



# 3 Pillars of Drought Policy & Preparedness with Linkages

## Monitoring/Early Warning and Information Delivery

*Drought Status - Meteorological,  
Agricultural, Hydrological, and  
Socio-economic drought*

Feedback

Drought characterization studies

## Vulnerability and Impact Assessment

*Who/What is at Risk and Why?  
Prioritization/Ranking*

## Integrated Drought Management



Feedback

Feedback

## Mitigation and Response

*Actions and measures to mitigate  
drought impacts and respond to  
drought emergencies  
(short, medium and long term)*



# National Drought Management Policy Guidelines

A Template for Action



Available in Arabic, Chinese, English, French, Russian and Spanish

Integrated Drought Management Programme (IDMP)

<http://www.droughtmanagement.info/about-idmp/guidelines/>



# Timeline for the Regional Capacity Building Workshops

## International Kick-Off Workshop

March 12, 2013  
Geneva, Switzerland

## 1<sup>st</sup> WS Eastern European Region

July 9-11, 2013  
Bucharest, Romania

## 2<sup>nd</sup> WS Latin America and the Caribbean Region

December 4-6, 2013  
Fortaleza, Brazil

## 3<sup>rd</sup> WS Asia-Pacific Region

May 6-9, 2014  
Hanoi, Vietnam

## 4<sup>th</sup> WS Eastern & Southern Africa Region

August 5-8, 2014  
Addis Abeba, Ethiopia

## 5<sup>th</sup> WS Near East & North Africa Region

November 17-20, 2014  
Cairo, Egypt

## 6<sup>th</sup> WS West & Central Africa Region

May 4-7, 2015  
Accra, Ghana

Six regional workshops have engaged 75 developing countries.

WMO, FAO, UNCCD, UN-Water and CBD



# Integrated Drought Management Programme (IDMP)

**IDMP**

Integrated Drought Management Programme



<http://www.droughtmanagement.info/>

HOME

ABOUT

FIND

CONNECT-ACTIVITIES

Search



Handbook of  
Drought Indicators and Indices

Handbook of  
Drought Indicators and Indices

Now available in Arabic, Chinese, English,  
French, Russian and Spanish



WORLD  
METEOROLOGICAL  
ORGANIZATION

WMO-No. 1175  
ISSUE 1.0 (2010/11)



Global Water  
Partnership

Towards a water secure world



# Regional Capacity Building Workshops

## Key Lessons

- Deficiencies in data networks, data sharing, understanding of indicators and indices
- Impact assessment/risk assessment methodology and no archive of impact data
- Lack of collaboration between critical ministries on all aspects of the 3 Pillar approach
- **Benefits of action vs. costs of inaction**
- Political will is lacking



# Monitoring, Early Warning & Information Delivery Systems

| Indicators/Indices                                                                                                                                                                                                                                                                                                                                                                                                                                        | Agencies/Ministries/Organizations                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Precipitation</li><li>• Temperature</li><li>• Surface water supplies<ul style="list-style-type: none"><li>– Stream flow</li><li>– Soil Moisture</li><li>– Reservoir levels</li><li>– Snow pack</li><li>– Water use</li></ul></li><li>• Ground water</li><li>• Remotely-sensed data (e.g., plant water stress)</li><li>• <b>Impacts</b><ul style="list-style-type: none"><li>– By sector, area</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Water</li><li>• Meteorological &amp; Hydrological Services</li><li>• Agriculture, Forestry &amp; Fisheries</li><li>• Environment</li><li>• Health</li><li>• Energy</li><li>• Transportation</li><li>• Commerce</li><li>• Social Services</li><li>• NGOs</li><li>• Others</li></ul> |



# Vulnerability/Impact Assessment, Mitigation and Response

## Who and What is at RISK and WHY?

| By Sector                                                                                                                                                                                                    | Agencies, Organizations & Stakeholder Groups                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Agriculture</li><li>• Energy</li><li>• Environment, Recreation &amp; Tourism</li><li>• Transportation</li><li>• Health</li><li>• Commerce</li><li>• Others</li></ul> |                                                                                                                                                                                                                                            |
| By Area/Region                                                                                                                                                                                               |                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"><li>• Drought management areas (provinces, river basins)</li><li>• Communities (rural, urban)</li><li>• Indigenous population</li></ul>                                    | <ul style="list-style-type: none"><li>• Reps from Ministries and non-governmental organizations</li><li>• Communities &amp; regional organizations</li><li>• Stakeholder groups representing all impact sectors</li><li>• Others</li></ul> |



# Takeaway Messages

- Drought is a ***normal*** part of climate **BUT . . . . .**
  - **Changing precipitation** amounts, seasonal distribution, form
  - **Increasing temperatures** will increase ET and demand for water resources → drought severity, frequency and duration.
- Past drought management efforts have been ***reactive***—ineffective, untimely, poorly coordinated & poorly targeted (**crisis management**). ***It's time for a paradigm shift focused on integrated drought management!***
- Managing sector impacts—***increase resilience*** to drought.
- ***Integrated drought management*** requires a ***collaborative approach*** **within and between levels** of government and with the private sector.
- To be successful, we must develop methodologies and produce case studies that address the **benefits of action vs. costs of inaction!**
- Build political will for a **paradigm shift** to risk management.





# Thanks for your attention!

**"Disasters seek out the poor  
and bind them in their poverty!"**

## **Contact Information:**

Donald Wilhite  
University of Nebraska-Lincoln  
[dwilhite2@unl.edu](mailto:dwilhite2@unl.edu)