Drought Risk Management: the Three Pillars of Drought Preparedness

Michael Hayes
School of Natural Resources
Origin of the 3 “Pillars” Concept

- March 2013
- Geneva
- Attended by more than 90 countries
Handbook of Drought Indicators and Indices

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

Integrated Drought Management HelpDesk
10-step process for preparing a national drought policy

1. Appoint a national drought management policy commission
2. State the goals and objectives
3. Establish stakeholder participation & resolve conflicts
4. Inventory resources & identify vulnerabilities
5. Implement the 3 key pillars
6. Identify research needs and fill institutional gaps
7. Integrate science and policy
8. Publicize the policy and build awareness and consensus
9. Develop education programmes
10. Evaluate and revise the policy

10-Step Process for Preparing Drought Policies

Regional Workshops for Capacity Development to Support National Drought Management Policies
Integrated Drought Management Programme (IDMP)

3 Key “Pillars” of a National Drought Policy

- Monitoring & Early Warning
- Vulnerability & Impact Assessment
- Mitigation & Response

Overall purpose: preparedness planning based on these pillars of risk reduction.
3 Key “Pillars” of a National Drought Policy

- Monitoring/Early Warning & Info. Delivery
  - Drought status (Met., Agric., Hydro., & Socio-economic)

- Vulnerability and Impact Assessment
  - Who/What is at RISK & Why?
    - Prioritization/Ranking

- Mitigation and Response
  - Actions and measures to mitigate drought impacts and respond to drought emergencies (short-, medium- & long-term)

Linkages connect the three pillars, indicating interactions and dependencies.
**U.S. Drought Monitor**

October 17, 2017
(Released Thursday, Oct. 19, 2017)
Valid 8 a.m. EDT

**Drought Impact Types:**
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g., agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g., hydrology, ecology)

**Intensity:**
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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NCEI/NOAA

http://droughtmonitor.unl.edu/
August 3, 1999

Experimental U.S. Drought Monitor

“Drought” means moisture shortages leading to damaged crops or pastures, high wildfire risk, or water shortages. The map is based on information from many sources, including both satellite and surface data, and it focuses on widespread drought. Local conditions may vary.

Yellow (D0) = Drought Watch Area (abnormally dry but not full drought status)

Red (D1–D4) = Current drought ranging in severity from standard (D1) to severe (D2–D3) to extreme (D4)

Crosshatching (X) = Overlapping drought type areas

Drought type: Used when impacts differ
- Ag = agricultural (crops, grasslands)
- Fire = forestry (wildfire potential)
- Hydro = hydrological (rivers, wells, reservoirs)

Plus (+) = Forecast to intensify
Minus (-) = Forecast to diminish
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Monitoring/Early Warning & Info. Delivery

Drought status (Met., Agric., Hydro. & Socio-economic)

Linkages

Vulnerability and Impact Assessment

Who/What is at RISK & Why?
Prioritization/Ranking

Linkages

Mitigation and Response

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

Linkages

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Drought Impact Types:
- D: Drought
- S: Severe Drought
- M: Moderate Drought
- P: Parched

Author:
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Vegetation Drought Response Index
Rangelands

Vegetation Condition
- Unusually Drought
- Severe Drought
- Moderate Drought
- Pre-drought stress
- Near Normal
- Unusually Moist
- Very Moist
- Extreme Moist
- Out of Season
- Water
- Other Landcover

August 5, 2012
Drought Risk Management
Successful Drought Policy

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Mitigation and Response
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Linkages

Monitoring & Early Warning

Vulnerability & Impact Assessment

Mitigation & Response

School of Natural Resources