IDMP
Integrated Drought Management Programme

WORLD METEOROLOGICAL ORGANIZATION

Global Water Partnership

Robert Stefanski
Applied Climate Services Division,
World Meteorological Organization

Valentin Aich
Senior Water and Climate Specialist,
Global Water Partnership

Overview of Drought Early Warning, Data Exchange, Monitoring for Transboundary Basins

February 26, 2024

Pillar 1: Monitoring and Early Warning Systems

- **Monitoring/early warning, prediction and information delivery systems**
  - **Integrated** monitoring of key indicators
  - Use of appropriate indices
  - **Used to trigger actions in drought plans**
  - Reliable seasonal forecasts
  - Development/delivery of information and sector-specific decision-support tools

Importance of Drought Indices

- ***Simplify*** complex relationships and provide a good communication tool for diverse audiences
- ***Quantitative*** assessment of anomalous climatic conditions
  - Intensity
  - Duration
  - Spatial extent
- ***Historical*** reference (probability of recurrence)
  - Planning and design applications

Source: Svoboda, 2009

Monitoring, Early Warning & Information Delivery Systems

Indicators/Indices	Agencies/Ministries/Organizations

• Precipitation
• Temperature
• Surface water supplies
  – Stream flow
  – Soil Moisture
  – Reservoir levels
  – Snow pack
  – Water use
• Ground water
• Remotely-sensed data (e.g., plant water stress)
• **Impacts**
  – By sector, area
	• Water
	• Meteorological & Hydrological Services
	• Agriculture, Forestry & Fisheries
	• Environment
	• Health
	• Energy
	• Transportation
	• Commerce
	• Social Services
	• NGOs
	• Others
	
	This is especially complicated when interacting with ministries across countries involved in transboundary basins.

Indicators & Triggers Definitions

- **Indicators: Variables to describe drought conditions.**

  Examples: precipitation, streamflows, groundwater, reservoir levels, soil moisture, Palmer indices, …

- **Triggers: Specific values of the indicator that initiate and terminate each level of a drought plan, and associated management responses.**

  Example: precipitation below the 5th percentile for two consecutive months is a Level 4 Drought.