

Drought Management Planning in Montana



Henry's Fork Watershed Council Dec. 13, 2016

*Ann Schwend
MT DNRC Upper Missouri Water Planner
aschwend@mt.gov
406-444-1806*



State Drought Response Planning History

1930s

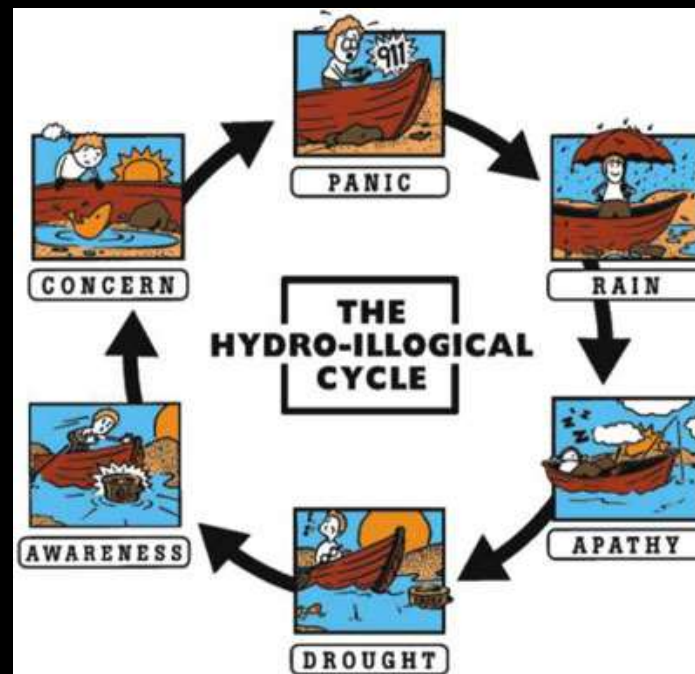
1950s

1980s

1990s

2000s

2010s



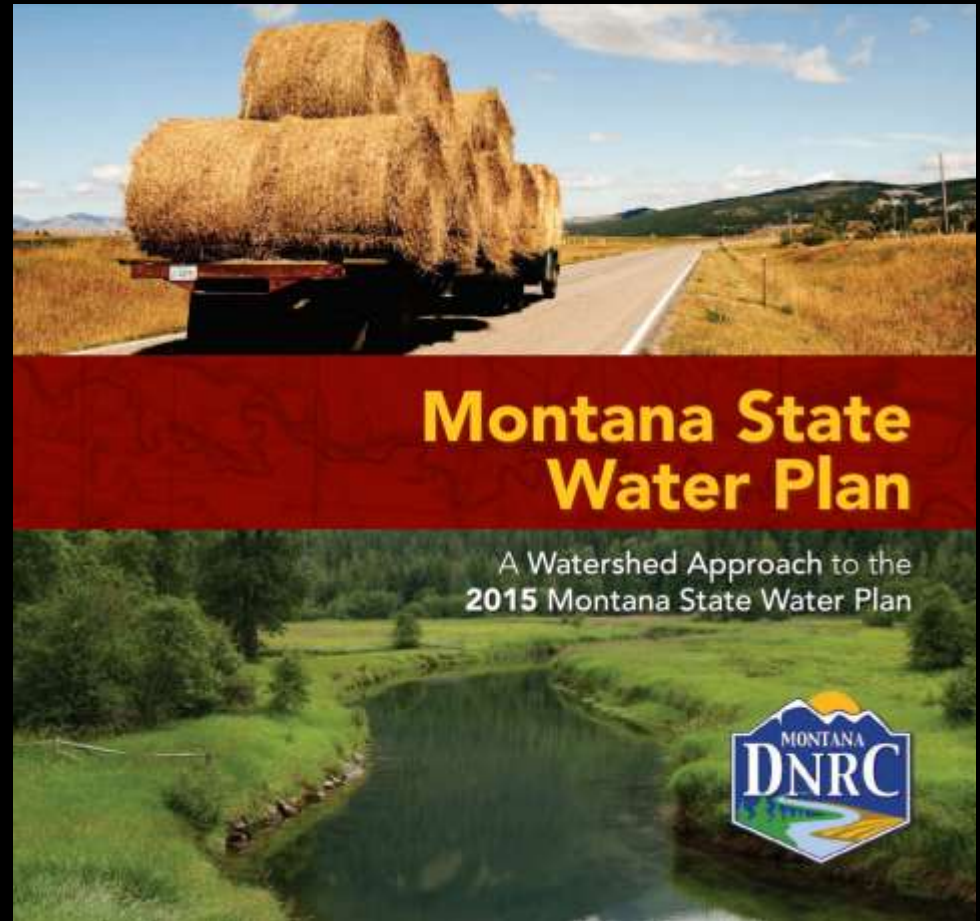
Drought Response Plan

- Montana Drought and Water Supply Advisory Committee (DWSAC)
 - *Data Support*
 - *Agency Coordination*
 - *Drought Declarations*
- Local Advisory Committees
- 2017 Update

**THE
MONTANA
DROUGHT
RESPONSE
PLAN**

Background

- Montana State Water Plan
- Montana's Climatic Diversity
- Nature of Drought



Connecting Local & State Efforts

How do we get there?



Montana Water Planning Basins

2015 Montana Water Supply Initiative Major Water Planning Basins



Map Prepared by:
State of Montana
Department of Natural Resources and Conservation
Water Resources Division- GIS
November 2012



Planning Jurisdictions

Montana Counties



Tribal Nations



MONTANA CONSERVATION DISTRICTS

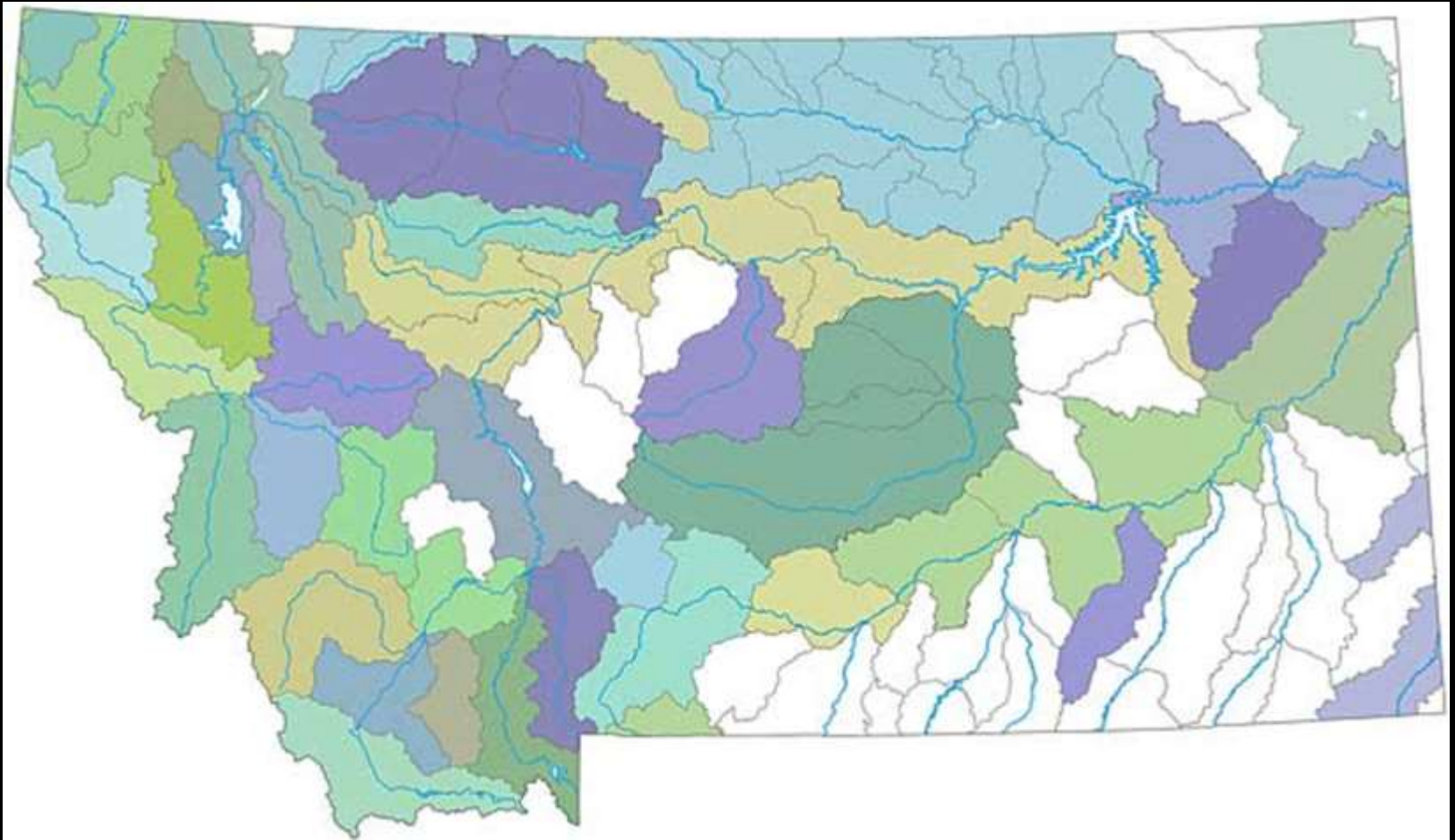


Conservation Districts



Extension Agents

Montana Watershed Groups



National Drought Resilience Partnership (NDRP)

Montana Demonstration Project

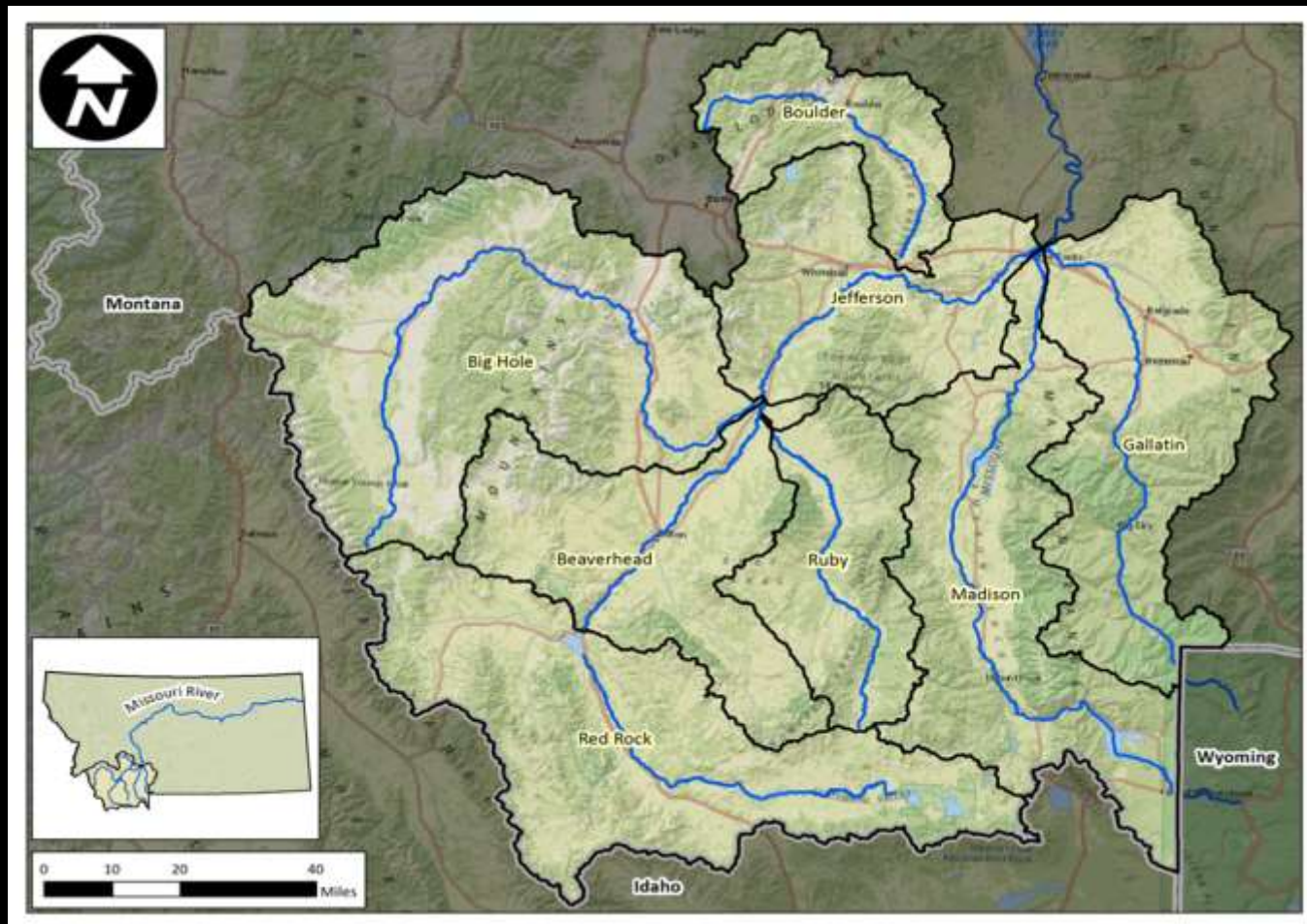
Whitehouse Initiative

Climate Action Plan

*“Enhancing
Community
Preparedness for
Drought”*



MT Demonstration Project: Missouri Headwaters Basin



MT Project Goals



Norwegian Creek, Wildlife Conservation Society

- **Leverage and deliver resources** (human, technical and financial) across the landscape
- **Engage communities** in drought preparedness planning and
- **Implement projects** that build ecologic and community resilience

NDRP

Federal Agencies

Montana State Agencies

Data

Partnerships

Tools

Funding

Governor's Office/DWSAC

Universities

Statewide Organizations

Other National Partners

Non-Profit Organizations

EPA

Partners

MT DNRC

Training

\$\$\$

Local Drought
Coordinators

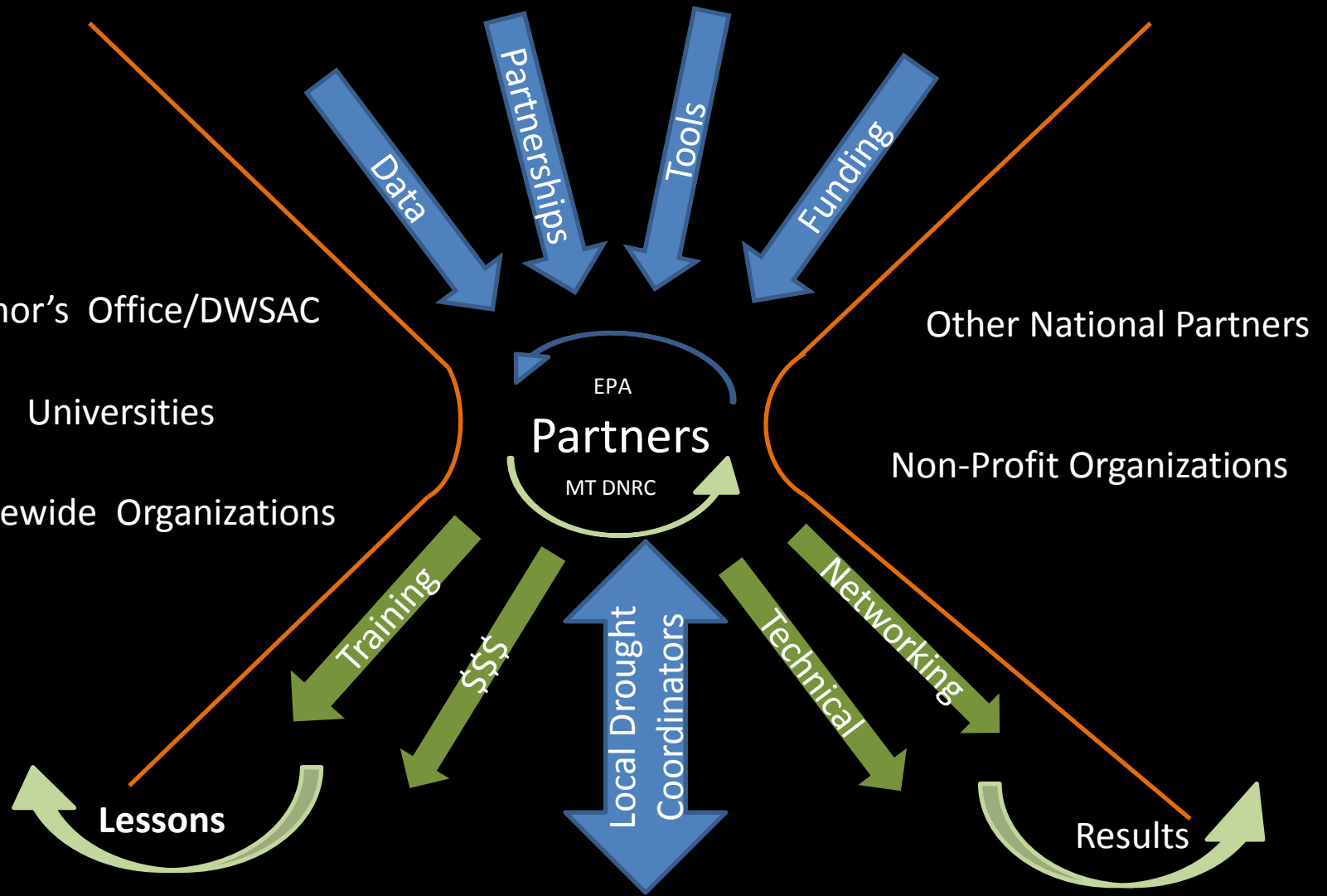
Technical

Networking

Lessons

Results

Watershed Communities



Missouri Headwaters Demonstration Project

- Local Drought Coordinators
 - Gallatin River Task Force
 - Greater Gallatin Watershed Council
 - Madison CD
 - Ruby Valley CD
 - Beaverhead CD
 - Centennial Valley Association
 - Big Hole Watershed Committee
 - Jefferson River Watershed Council
 - Broadwater CD
- Many Partners involved
- Leveraged \$2,400,000+ in project and capacity funding
- BOR/DNRC Drought Contingency Planning \$\$
 - Local Plans and Missouri Headwaters Basin Plan

Building Drought Resilient Communities



Travel MT photo credit

Community Drought Planning Framework

- **Develop Local Capacity to plan for drought**
- **Drought Planning Basics**
- **Understand Water, Climate and Drought in the Community**
- **Assess Vulnerabilities and Impacts**
- **Develop Response Plans (Immediate)**
- **Identify Mitigation Strategies (long term)**
- **Communication and Outreach in the Community**



Response Plans



- Identify drought indicators/triggers
- Develop immediate response actions

Mitigation or Adaptation Strategies

aka

Resilience and Pasta Salad



One way to confront adaptation planning challenges is by creating versatile, scalable “dishes” through a flexible framework for strategies that evolve and grow with new ingredients over time in response to long-term, uncertain changes - the planner’s equivalent of a pasta salad.

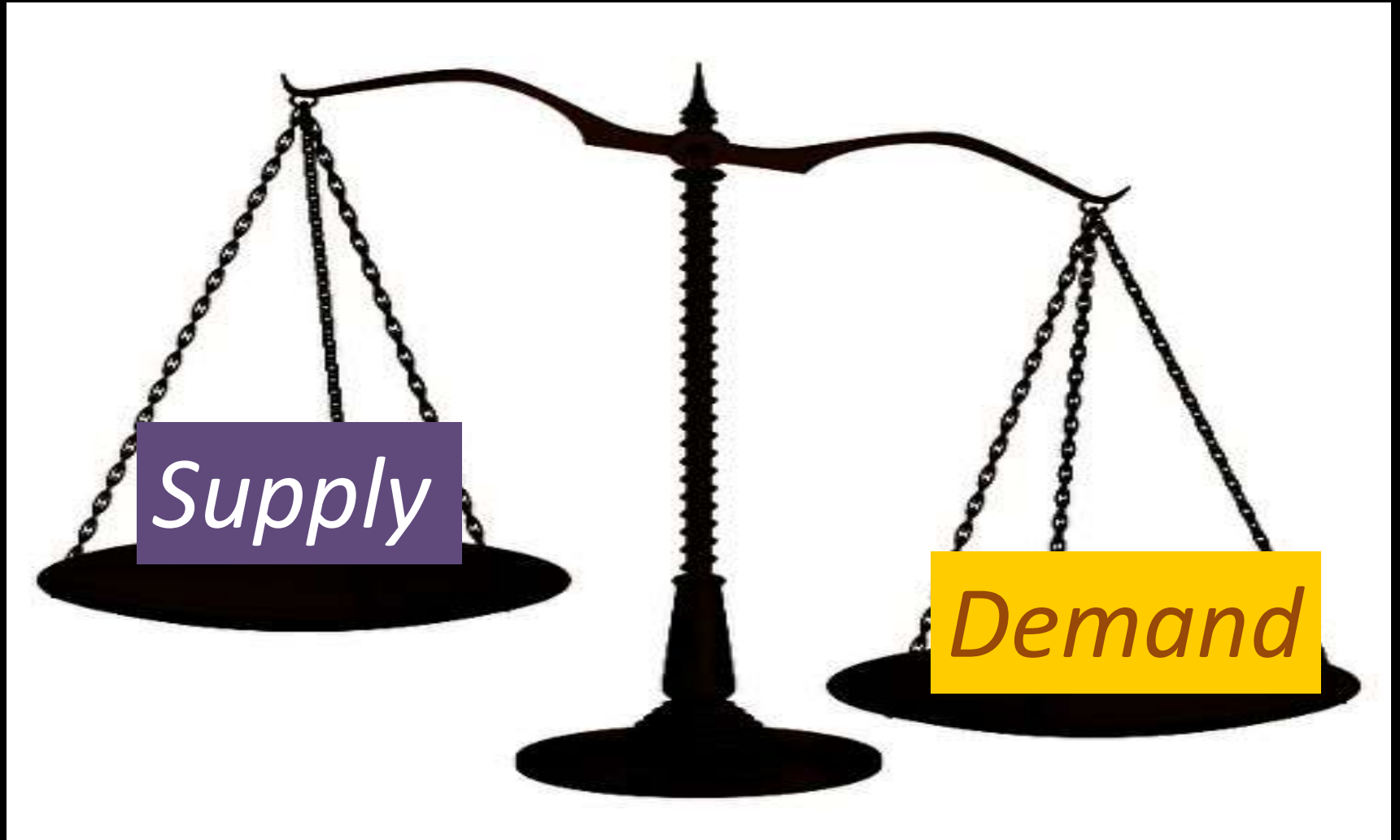
Excerpted from the American Society of Adaptation Professionals Newsletter, May 2016

MT Demonstration Project: Where Next?



- Expand to other watersheds
 - Streamline the process?
- Sub-basin plans
- Major River Basin Plans
- Integrate with State Plan
- Seek dedicated funding

Drought Resilience



Water Supply Strategies



- Increase Natural Storage Potential
- Capture and retain water in the headwaters
- Manage uplands (Forests and Rangelands) to consider water yield
- Improve Soil Health & Water holding capacity
- Improve Floodplain management, connectivity & riparian health

Demand Side Strategies

- Increase Public awareness and understanding
- Improve water conveyance and delivery systems
- Community-wide Water Conservation
- Drought Planning
- Voluntary agreements and shared sacrifice



Key Elements of Planning

- *Engage Community Leaders*
 - *Recruit Partners*
 - *Increase Awareness*
- *Coordinate Resources, Information & Efforts*
 - *Identify Vulnerabilities and Impacts*
 - *Implement Strategies*
 - *Link to larger efforts*
 - *Strengthen Capacity*

