Jefferson Drought Committee Meeting 1/9/2018
Identifying areas of Interest from Climate/Speaker Information

Risk assessment= vulnerabilities + exposure

Identify principal activities, groups, regions most at risk and develop mitigation actions and programs that combat vulnerabilities and drought impacts.

- -Can be based in agriculture, industry, municipalities, wildlife, tourism, recreation, health.

Drought needs defined for social, economic and environmental sectors.

- -Economics, technology, social relations, demographics and health, individual perception, decision making in industry.

Interest groups for drought can be driven by sector type:

- -Natural resource:
  - -Water (location, accessibility, quantity, quality)
- -Biological resource:
  - -Quantity & quality of rangeland/grasslands, forests, wildlife
- -Human resource:
  - -Labor needed to develop water resources, lay pipeline, haul water and livestock feed, process citizen complaints, provide technical assistance, and direct citizens to available services.

Drought impact assessments can be defined and identified by

- -Direct outcomes: reduced crop yields, livestock losses.
- -Secondary outcomes: Sale of land/goods, dislocation, physical and emotional stress.

Seasonal vulnerabilities can change drastically, important to avoid static drought documents and make adaptable.

Consider:

Historical impacts of drought and response to drought, vulnerable economic and social sectors, role of vulnerability assessment in resolving conflict, current trends of land/water use/population, government resource availability, legal/social implications, environmental concerns caused by drought.

Impacts and Vulnerabilities:

- -Direct impacts: precipitation low, crop yields low.
- -Vulnerability caused by non-drought resilient seeds because of costs or commitment to cultural beliefs.

-Limitations to adaptive management include cost and technical feasibility (impracticability), effectiveness, equity and cultural perspectives.

-SES (social-ecological system) resilience has been defined as “the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks” (Walker et al., 2004).

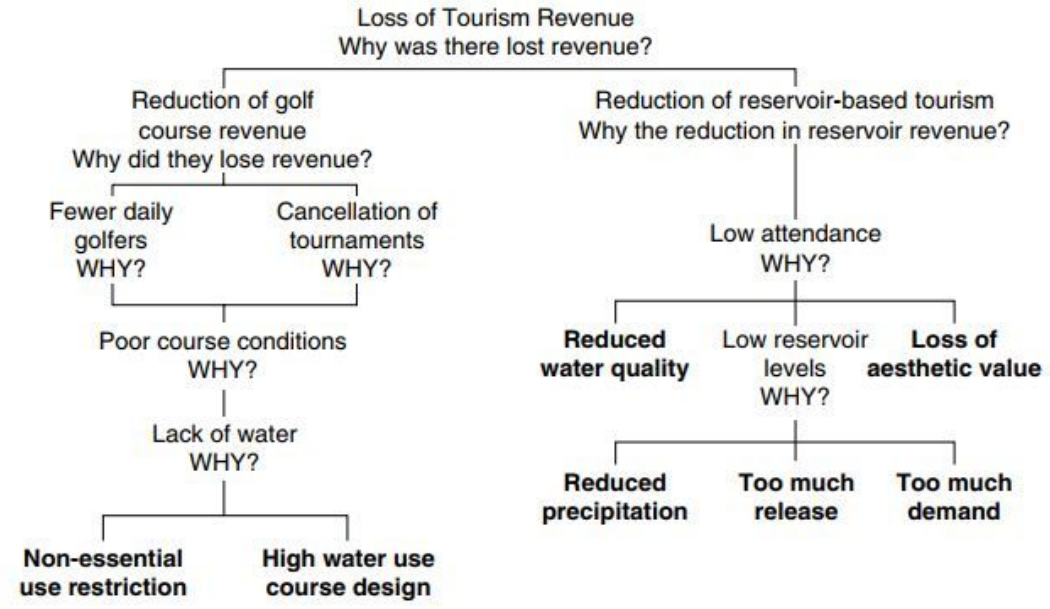
-Resilience assessment framework: “[is] an approach to managing natural resource systems that takes into account social and ecological influences at multiple scales, incorporates continuous change, and acknowledges a level of uncertainty has the potential to increase a system’s resilience to disturbance and its capacity to adapt to change” (Resilience Alliance, 2010, p. 4).

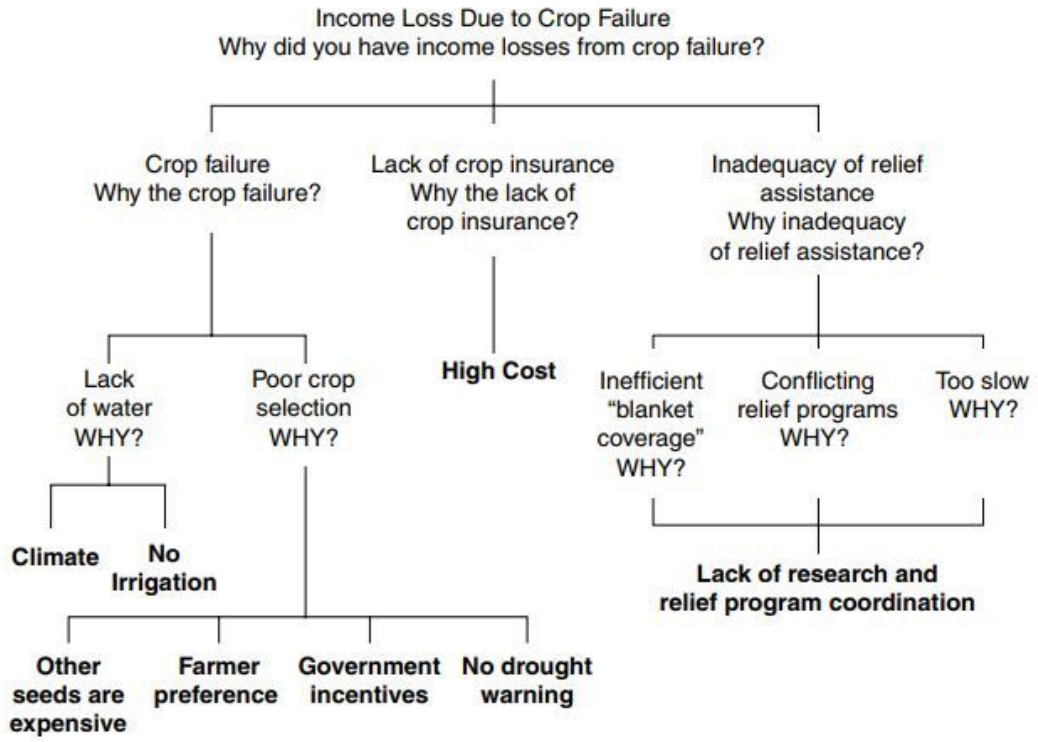
-What can change quickly on the landscape, what can change over long term? How quickly can those issues or activities be reversed and mitigated?

Case study: Hopi Tribe a reservation in NE Arizona

- Identified 4 areas of vulnerability concern:
  - Range and livestock, agriculture, village water supplies, environmental health.
- Mitigation plans for village water supplies:
  - Identifies the responsible agencies, provides a timeline to complete the actions, and proposes a cost estimate for these actions. For example, a cost of $12 million is estimated to upgrade the water supply systems of 12 tribal villages by improving pumping capacity, storage tank size, and pipe capacity.
- Mitigation plans for range and livestock:
  - To facilitate rotations and proper use of rangelands, the Hopi range management plan also includes fencing and water development projects for the unit range management plans. Water availability in these units will be improved through a combination of rehabilitating surface water impoundments, additional wells at key locations, improved water distribution from the supply point to multiple stock watering troughs, and other conjunctive uses.

Example vulnerabilities at top of each of the tree diagrams- Ask, can they be mitigated? (modified before a drought), responded to? (modified during or after a drought) or accepted that it is an unavoidable drought-related risk for the activity or area?





(Figure source: National Drought Mitigation Center, University of Nebraska, Lincoln, Nebraska, USA.)