Drought impacts to socio-economic systems

Symposium:
Coping with Drought on Rangelands

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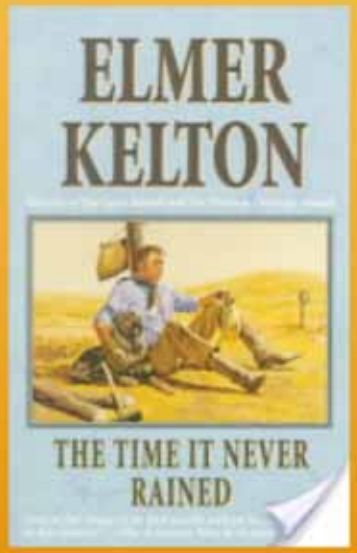
Everything I ever needed to know about drought I learned from Charlie Flagg



- Kelton's definition of ranchers:
  - "[Q]uiet but determined men and women who *stand their ground* year after year in a fight they can never finally win, against an unforgiving enemy they know will return to challenge them again and again as long as they live."
- Charlie Flagg's struggle in TTINR involved:
  - Six-year drought
  - Corporatization of agriculture and banking
  - Changes in societal and family dynamics

All droughts are not created equal

- Thurow & Taylor (1999) identified four perspectives on drought:
  - Meteorological
  - Agricultural
  - Hydrologic
  - Socio-economic

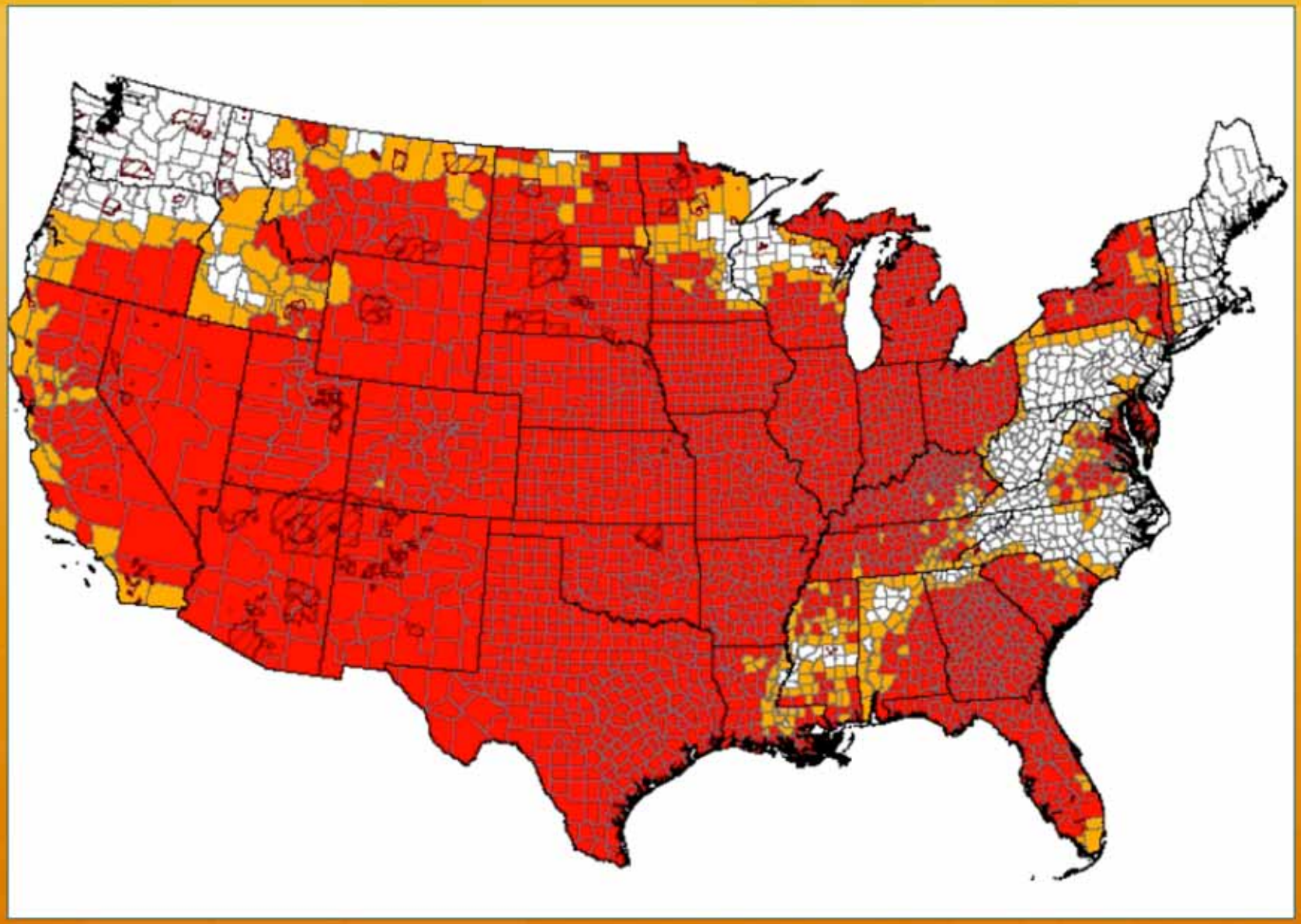
    "Not all water shortages are manifest in ways that impact people. A socio-economic perspective does not recognize drought until it tangibly affects people's behavior and options (e.g., water rationing, increased prices, or lost recreational opportunities) or depressed earning power …."

2012: a persistent socio-economic drought

- Cargill closed its Plainview, TX, beef processing plant last Friday due to "tight cattle supply brought about by years of drought in Texas and Southern Plains states."
- U.S. cattle numbers at 60-year low, according to a report Friday from USDA-NASS.
- USDA-ERS predicts 2013 grocery inflation at 3%-4% (normal = 2.5%-3%) "centralized in animal products – eggs, meat, and dairy."

What about impacts to rural employment in rangeland-dominated counties?

2012 Secretarial Drought Designations



What triggers a secretarial drought disaster designation?

- Streamlined process – designation is nearly automatic if a county experiences:
  - D2 (Severe Drought) drought intensity conditions for eight consecutive weeks; or
  - a portion of its area is D3 (Extreme Drought) or higher at any time during the growing season.
- Up to 2/3 of all U.S. counties have been declared disaster areas in each of the past several years … does declaration have meaning?

Why might rangeland drought not be taken seriously?

- Sustainability in *drylands* (mainly rangeland) is driven by 5 key features of "drylands syndrome"
  1. Precipitation is scarce and typically more-or-less unpredictable
  2. Dryland soils exposed to high potential ET, usually low in organic matter and aggregate strength
  3. Sparser human population than in wetter zones
  4. Often greater rates of seasonal migration because income sources & markets are usually distant
  5. Due to #3 & #4, drylands are remote from decision centers.

Source: Reynolds et al. (2002, 2007)

A multiple whammy?

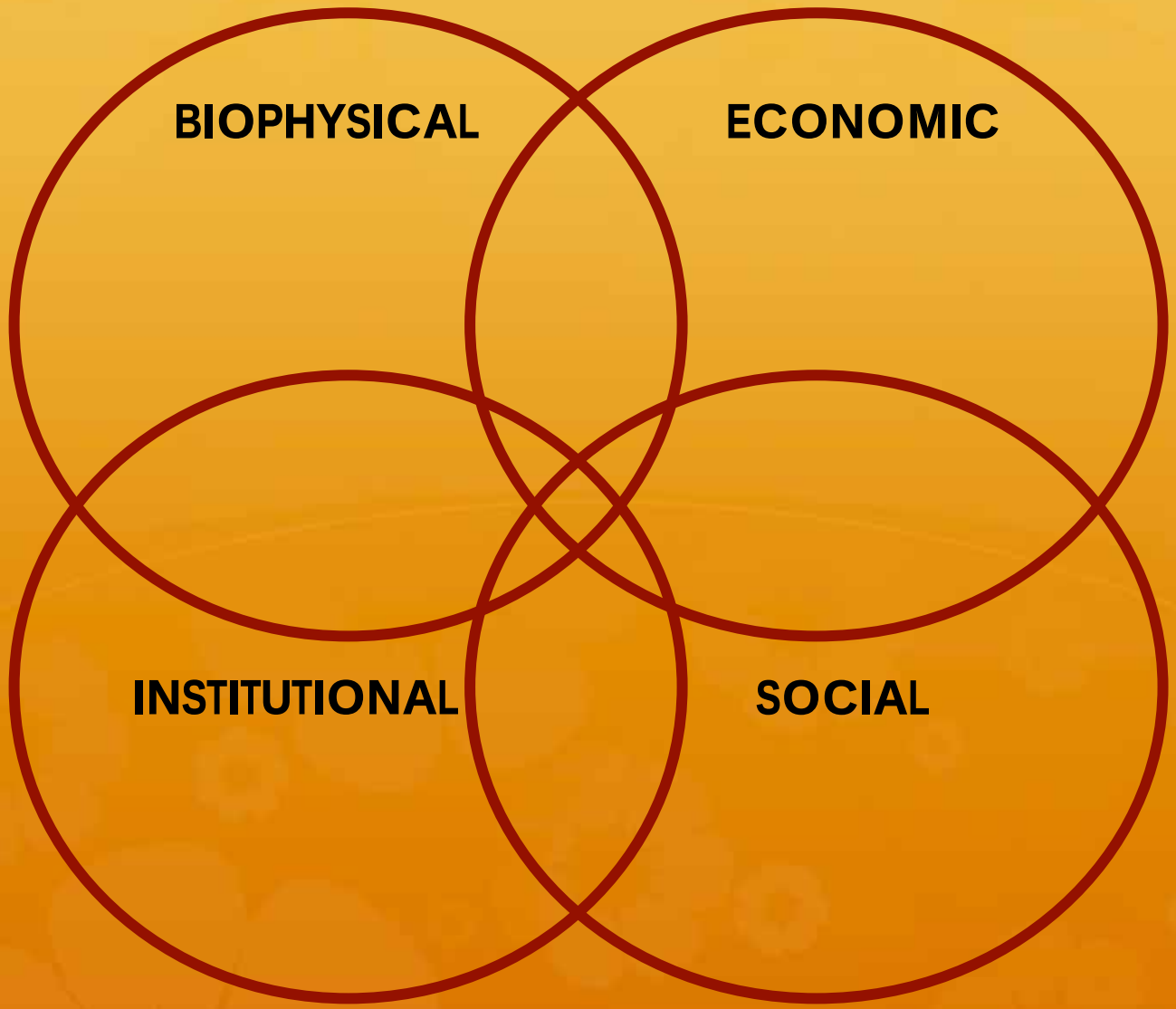
- Let's review a few ideas I've advanced so far:
  - Drought often occurs alongside other stressors facing households and communities.
  - For various reasons, top-down (policy) solutions are likely to be slow to come, low priorities nationally
  - Significant proportions of range communities are mobile, seasonal, or otherwise socially disconnected
- If national attention is slow to emerge, mitigating impact is left to bottom-up action ("neighboring up"). This happens best in socially cohesive places.

Coping with drought: Advice from our profession

- Rachel Frost (MSU Extension) offers six options for livestock producers to consider
  1. Rotate pastures more frequently
  2. Delay turnout
  3. Alter season of use
  4. Wean early
  5. Reduce livestock numbers → Cargill situation
  6. Lease additional 'tame' pasture

Relatively little economic impact

Four spheres govern rural decisions & interactions



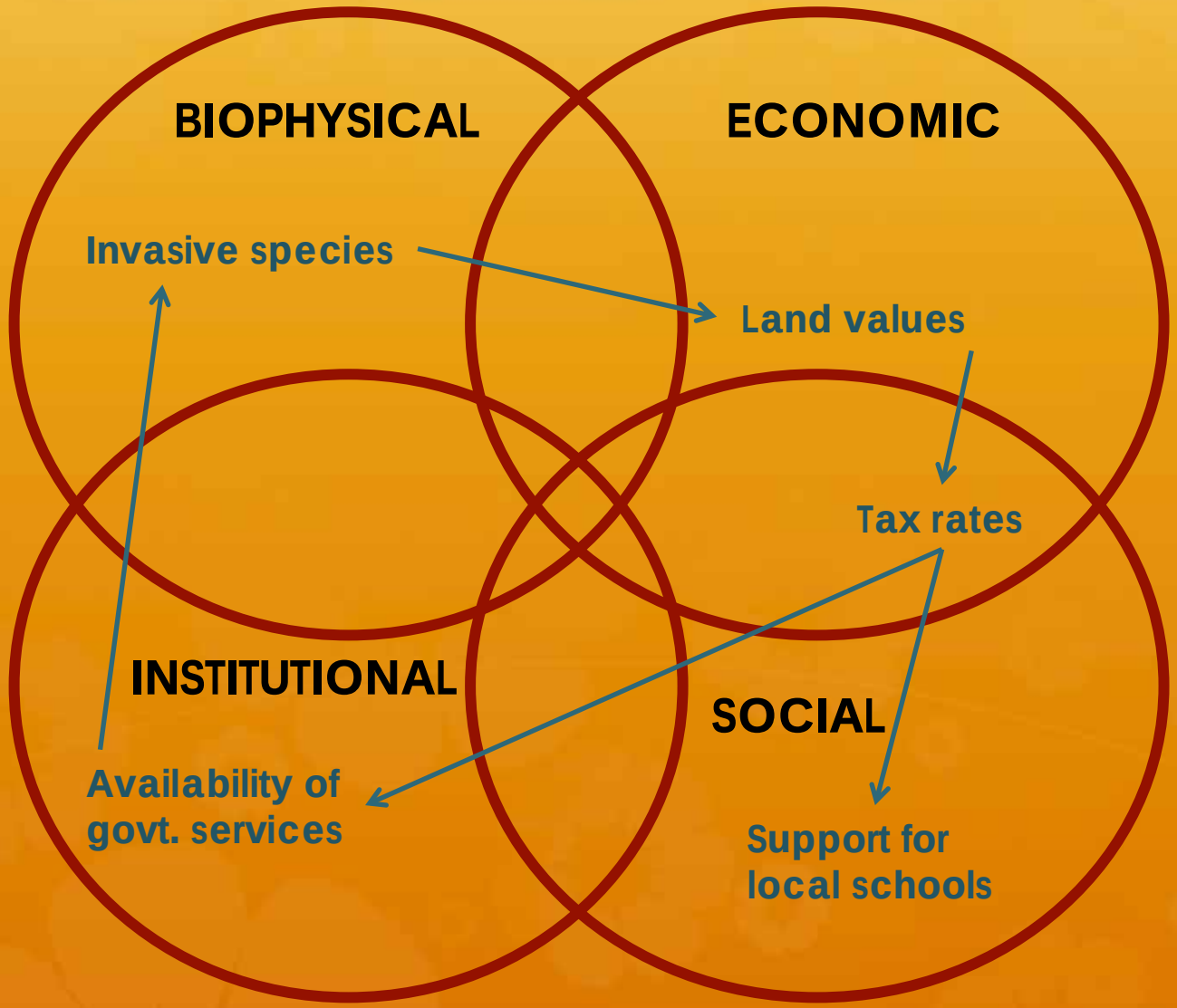
- Soil fertility
- Forage sp.
- Native vs. non-native
- Climate
- Terrain
- Predators

- Livestock & hay prices
- Proximity to markets
- Land & loan availability
- Tax rates

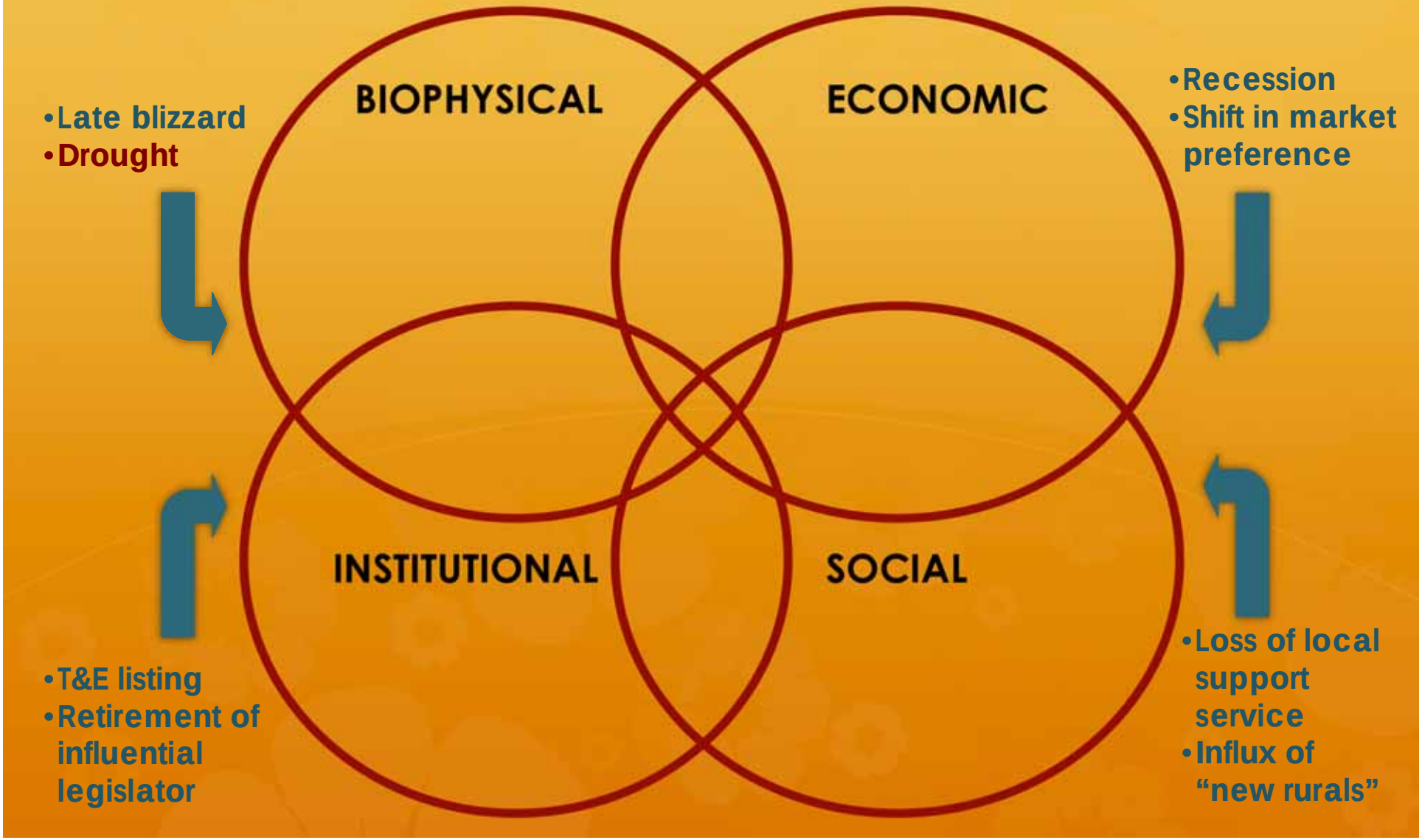
- Laws
- Incentive programs
- Adjacent zoning
- Disaster relief

- Health care availability
- Schools & churches
- Local support networks

Interconnections among spheres



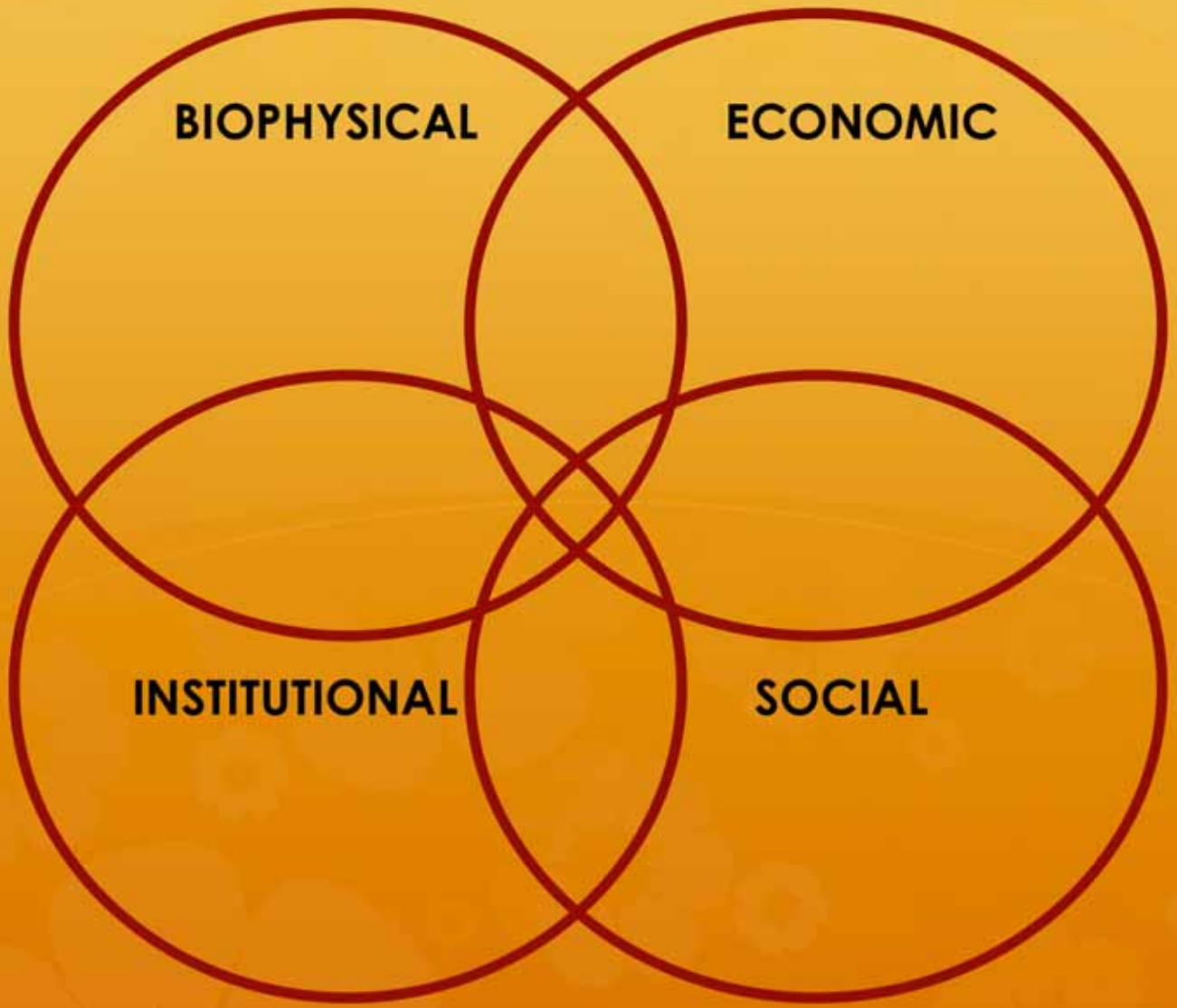
Systems are subject to stressors & perturbations



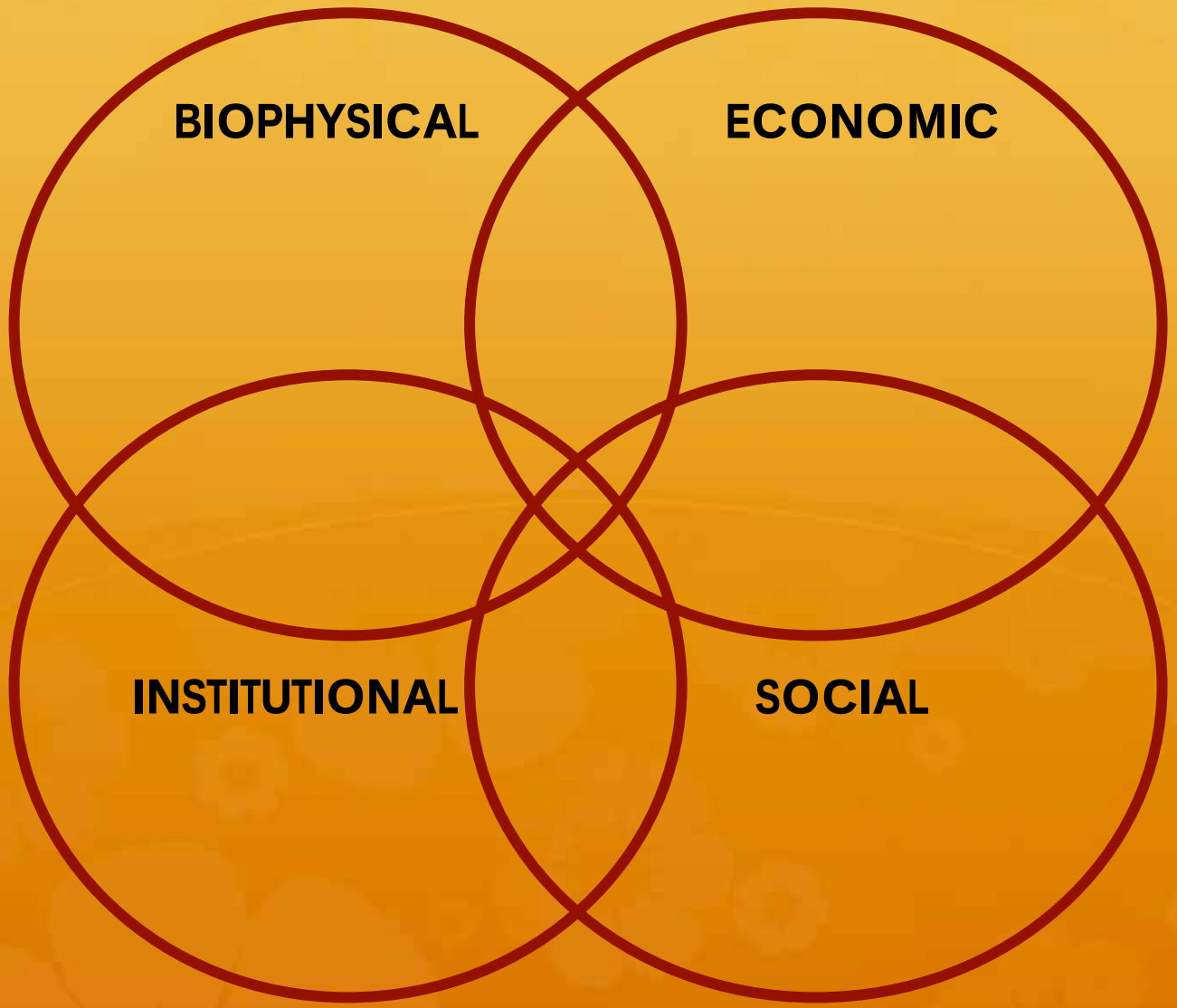
Coping with systems stress

- It's more difficult, but not uncommon, to face simultaneous stress in more than one system
- Agricultural communities traditionally have had frequent exposure to **biophysical** or **economic** stressors while other systems remained stable
- Communities have developed coping strategies for biophysical or economic stress but not others
  - Neighbors helping neighbors
  - Traditional USDA programs administered by home-grown officials
- ***What happens when 2+ systems are under stress?***

Restructure → new equilibrium



Community disintegration

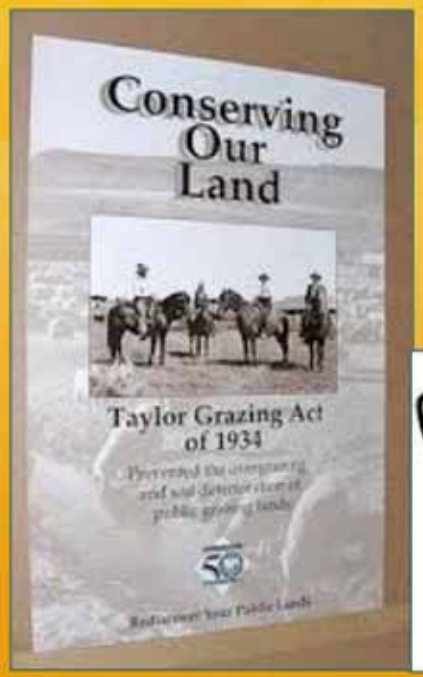


Systems stress, perturbed rangelands & the 2012 drought

- The 2012 drought was **socio-economic drought**, i.e., it perturbed more than one system
- Almost all of the U.S. was already stressed by larger-scale perturbations to economic systems
- Political realities threaten loss of reliable institutions
- Many rangeland communities also face novel stresses in social systems
  - Mobility + information technology make moving away seem more attractive than ever before
  - Influx of seasonal residents, "new rural" neighbors

A perfect storm … but perfect for what?

- Opportunities for positive change exist if people are stressed, but not too much & think they have options. Program flexibility helps (e.g., relaxed CRP restrictions)
- New arrivals often bring ideas and experiences from elsewhere that can lead to new institutions (usually in nonprofit sector)
- Non-agricultural landowners may be valued source of leased forage … forcing cooperation among neighbors who often don't interact


Conserving
Our
Land
Taylor Grazing Act
of 1934

Questions, comments, arguments?