Spiraling-Up Through Drought Responses in Colorado's Agricultural Communities

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Outline

- Motivation
- Outline
 - Context & Literature
 - Research Questions & Methods
 - Quantitative Results
 - Qualitative Results
 - What have we learned?

Key Points

- Drought is a community-level phenomenon that requires communitylevel responses
- Local assets play a vital role in facilitating community-level drought adaptation
- Actions addressing drought and agricultural uncertainty can initiate processes of spiraling-up. Community resilience and community development are interconnected in the context of drought adaptation.



It is Not Enough to Survive... Our Aim is to Thrive

Resiliency is about learning the lessons of disaster events and building back in a way that moves us forward. Why not survive and thrive? Why not do both?

Colorado's Resiliency Framework sets this dialogue in motion and creates a structure for the State to do both: to create a vibrant community while overcoming challenges in ways that support Colorado's continued growth, recreation, beauty, and quality of life.





TOWN OF MILLIKEN COMPREHENSIVE PLAN



A DISTINCT COMMUNITY IDENTITY THAT REFLECTS MILLIKEN'S CULTURAL, ARCHAEOLOGICAL, HISTORIC AND AGRICULTURAL RESOURCES

Milliken residents, both long-time residents and recent transplants, value its small town character and distinct community identity. This identity has traditionally been and will continue to be—defined by the area's rich agricultural heritage, lands and operations. As the community grows, the Town will work with area landowners to support traditional agricultural operations as

well as to embrace opportunities for smaller, specialized agricultural enterprise. Milliken's unique historic, archaeological, and cultural resources further define the community's identity, and will continue to be supported through the efforts of the Milliken Historical Society, the Town, and other community advocates.

Research Questions

- What local assets do Colorado's agricultural communities possess that could be mobilized for climate adaptation?
- How have Kit Carson and Conejos County communities leveraged local assets in responding to recent drought?
- In what ways have capacity-building processes emerged from community-level responses to drought?

Methods

- Index adaptive capacity in Colorado's 15 farming-dependent counties: Sedgewick, Phillips, Yuma, Washington, Kit Carson, Cheyenne, Kiowa, Bent, Baca, Elbert, Jackson, Dolores, Conejos, Costilla, and Saguache
- Conduct in-depth qualitative interviews with community leaders in Kit Carson County and Conejos County (n = 17)



Social Capital Economic Capital Natural Capital	 Penn State social capital index (+) unemployment rate (-) median household income (+) average annual job growth rate (+) county GDP/capita (+) real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Economic Capital Natural Capital	 unemployment rate (-) median household income (+) average annual job growth rate (+) county GDP/capita (+) real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Capital Natural Capital	 median household income (+) average annual job growth rate (+) county GDP/capita (+) real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Natural	 average annual job growth rate (+) county GDP/capita (+) real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Natural	 county GDP/capita (+) real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Natural	 real growth in county GDP/capita ratio of 80th to 20th household income percentile (-) 			
Natural	• ratio of 80^{th} to 20^{th} household income percentile (-)			
Natural Capital				
Canital	 proportion of agricultural producers under 35 (+) 			
Cupital	 proportion of farms in primary product (-) 			
Human	• proportion of population that is working age (+)			
Capital	 net migration rate (+) 			
	 high school completion rate (+) 			
	• proportion of population that is college educated (+)			
1	 proportion of agricultural producers with off-farm income (+) 			
Built Capital	• licensed mental health professionals/1,000 residents (+)			
	 licensed physicians/1,000 residents (+) 			
	 county health uninsurance rate (-) 			
Cultural	Percentage of county's residents who believe climate			
Capital	change will affect them personally (+)			

Emery & Flora, 2006

County				
Baca				
Bent				
Cheyenne				
Conejos				
Costilla				
Dolores				
Elbert				
Jackson				
Kiowa				
Kit Carson				
Phillips				
Saguache				
Sedgwick				
Washington				
Yuma				

Strength Social Natural Social Cultural Cultural Cultural Human Social Social Social Social Cultural Social Social Natural



Community Capital	Median: All (n = 64)	Median: Non-metro (n = 47)	Median: Farming- Dependent (n = 15)
Social	.40	.54	.62
Financial	.53	.46	.42
Human	.43	.39	.27
Cultural	.42	.46	.48
Natural	.47	.47	.45
Built	.45	.41	.41



Conejos County Kit Carson County Social Social 1.0 0.9 0.8 0.7 1.0 0.9 0.8 0.7 0.6 0.6 Cultural Cultural Natural Natural 0.5 0.5 0.4 0.4 03 0 0.2 0.1 0.0 Built Financial Built Financial Human Human

"Drought is absolutely devastating to an agricultural community. In so many ways, not just financially, but it's social, emotional, physical — the whole nine yards. And so, our role in public health is to have prevention services in place to be able to address all of those medical, physical manifestations that come from the effect of long-term drought." (Director, Kit Carson County Department of Public Health and Environment) "You have 2, 3, 4, 5 big farmers handling most of the acreage, and your whole cultural lifestyle is different. There's not this same country-lifestyle upbringing where the family is working together as they once did... there's a lot of value to understanding the work ethic and chores that go into making an operation profitable. That's faded and gone, now." (Farmer, Conejos County)



















"For example, rafting in Browns Canyon National Monument. Our funding came from the Bureau of Land Management. Conservation Lands Foundation paid for me to go. Great Outdoors Colorado; we took out a fund from them for [our Outdoor Programs Director] to go, so we could have the staff. It was Wilderness Aware Rafting who came and picked us up, and took us with the outfitters. It was Friends of Browns Canyon that initially introduced us to the whole idea... For eight of our kids to go rafting it took all those resources, all those partnerships."







COLORADO

Department of Local Affairs

Community Development Block Grant — Disaster Recovery



Drought Resilience



Partnerships, resourcesharing, data-sharing, and joint grant writing across community groups Community groups are able to present need in grant applications, are flexible in responding to immediate crises, and can expand programming. Labor costs and infrastructural barriers reduced. Partnerships help educational programs reach a wider audience; for new organizations, they lend credibility. Communication builds community buy-in.



Takeaways

- Community regeneration in Kit Carson & Conejos Counties hinges on agricultural sustainability, which requires drought resilience
- Grant \$ + participatory planning + social, cultural, & natural capitals
 → successful community initiatives
- Community development is an effective approach to resiliencebuilding and a complementary goal.

Questions?

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