ENTREPRENEURIAL ECOSYSTEMS

Natural Resources Development

A Likely Entrepreneurial Development Opportunity Strategy Guide

By Don Macke with Kimberlee Spillers

October 2021

Our 40 years of rural community economic development work in North America is a rich learning experience. At e2, we have worked in nearly every rural region in the continental United States and many of the Canadian provinces. Our Development Opportunity Profile analysis has surfaced reoccurring likely entrepreneurial development opportunities universally available to most rural communities.

Strategy Defined

Oxford Languages defines strategy as "***a plan of action or policy designed to achieve a major or overall aim***…" Any strategy is a point-in-time plan for action. Just as startup entrepreneurs are encouraged to develop a venture plan, communities exploring entrepreneurial development should do the same. Your community's development strategy will change and evolve over time as new opportunities, priorities, and challenges emerge.

About our e2 Strategy Papers. At e2, we have been conducting opportunity analysis for rural communities and regions throughout North America for decades. This field-rooted work has identified and led e2 to create our 10 common and ***Likely Entrepreneurial Development Opportunities,*** for many rural communities.

This strategy paper focuses on **Natural Resources Development,** organized into the following sections:

- Likely Entrepreneurial Development Opportunities
- Natural Resource Sectors
- Natural Resource Value Chains
- Renewable to nonrenewable Natural Resources
- Entrepreneurial Development Opportunities
- Diversity Within and Beyond Natural Resources

Remember Regional Development. While regional development is not one of our top 10 likely entrepreneurial development opportunities, we strongly recommend every rural community embrace, with other communities in their region of America, larger-scale regional development. When more communities in a region are thriving, opportunities are created for your community and your entrepreneurs. For more information, check out our paper, ***Regional Development***.[1]

Additionally, growing entrepreneurial ecosystems is best done regionally, hopefully with state-level support. We recommend a top-down and bottom-up entrepreneurship strategy as outlined in our paper, ***Entrepreneurial Ecosystem Building in Rural America, Four Decades of Learning[2].***

[1] Located in our website's resource library.
[2] Ibid.

e2's Likely Entrepreneurial Development Opportunities

Too many rural economies and societies are failing because of their narrow economies rooted in one to two changing economic sectors. Our paper, *Economic Crashes, Mini-Case Studies,* illustrates the consequences of undiversified economies. Conversely, our story, *Ord, Nebraska, An Entrepreneurial Community,* illustrates when a community diversifies its economy, it drives transformative change. Our likely entrepreneurial development opportunities can create genuine and robust strategies to grow a more diversified economy.

The following table provides brief descriptions of each of the top 10 development opportunities, with links to relevant strategy papers, as available.

	**Natural Resources.** Much of rural America depends upon single natural resource industry economies (e.g., farming, mining, forestry, energy, etc.). While there are limited entrepreneurial development opportunities related to these international market industries, there are opportunities rooted in diversifying within these sectors and increasing sector related spending capture.
	**Transportation Corridors.** Urban America is connected by transportation corridors that run through rural America. Services are required to support those traveling these corridors, creating entrepreneurial development opportunities.
	**Tourism.** While the vast majority of Americans live and work in urban America, rural America provides important places to play. For a wide range of rural communities and regions, tourism represents a way to diversify area economies.
	**Retirees**. When thinking of new residents, keep in mind the tidal wave of retiring Boomers. This group represents a significant likely entrepreneurial development opportunity for most rural communities, from high amenity places to rural villages adjacent to metro centers.
	**Commuters.** Upward of 50 percent of rural workers live in one community and work in another community. These outbound commuters have embedded entrepreneurial development opportunities in creating bedroom community-related development and entrepreneurial opportunities when they end their commuting.

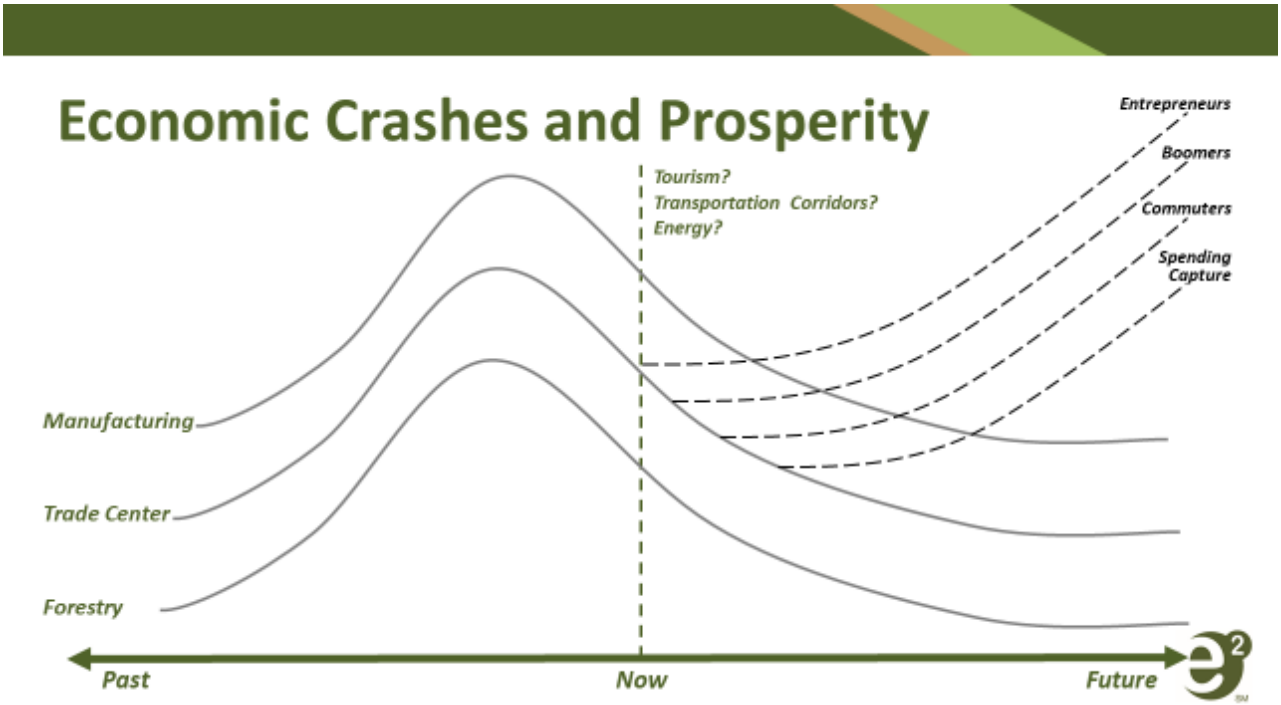
	**Hub Cities**. America's landscape is still defined by a hierarchy of places based on size. In rural America, there are regional and area hub cities and towns that provide critical services like healthcare, shopping, and entertainment to rural areas. These communities are the "downtowns" of vast rural regions to smaller areas.
	**Larger Employer Retention and Expansion.** Many rural communities are home to large manufacturing plants, fulfillment centers and institutions including hospitals, regional universities, and parks. Ensuring the future of these larger employers is an entrepreneurial opportunity.
	**Growth-Oriented Entrepreneurs.** Nearly every rural community has growth-oriented entrepreneurs with the motivation and capacity to reach external markets with their products and services. Electronic commerce empowers this kind of entrepreneurship.
	**Area Spending Capture.** Competition is intense from box stores, franchise, and electronic commerce, but opportunities exist to increase local venture competitiveness and recapture some of these spending leakages. In doing so, rural communities can empower growth-oriented entrepreneurs.
	**New Residents.** Since the 1900s, the primary migration pattern has been from rural to urban. Today, there are counter (e.g., urban-to-rural) migration trends among 30-year-olds, retiring Boomers and others. These new residents represent a huge opportunity to energize area entrepreneurial talent.

To learn more about these top 10 Likely Entrepreneurial Development Opportunities and our evolving collection of associated strategy papers, please visit our website's resource section.

Humankind has evolved through various economic stages, beginning with hunter-gatherer cultures to farming-dependent societies, then to the first and second industrial revolutions and now emerging new phases, rooted in knowledge-based economies. Central to these transformations is that earlier economic activities typically do not disappear, they simply change and become less important. For example, there are still hunter-gatherer communities in Alaska and Siberia. Production agriculture continues to be foundational, but with commodities and automation, we no longer need communities every 10 miles in farming country to support today's production agriculture.

At e2, we have employed Figure 1 extensively in our work with rural communities and regions. It explores America's development beginning with natural resource industries like farming and forestry as foundational, enabling European-American and Spanish-American settlement. As these industries took root in rural areas, villages, towns, and cities were created to support area residents and ventures. For much of rural America, particularly larger rural communities, manufacturing came, during and following, World War II as industry moved from the coasts and bigger cities into rural America.

Figure 1. e2's Economic Rural Transformation Illustration



These foundational rural development opportunities largely continue to exist, but, because of structural changes like automation, they no longer require the workers and resident populations they once did. This has stranded many rural communities lacking sufficient resident populations to remain viable, let alone vibrant. Diversifying within and beyond natural resource industries by employing entrepreneurial development opportunities, is foundational to ensure sustainable rural community relevance and prosperity.

Based on e2's typology, there are seven primary natural resource sectors relevant to rural community development. There is also an allied natural resource sector associated with corridor development. Within these sectors there are subsectors. For example, with respect to energy natural resource development, there are fossil fuel subsectors like oil, natural gas and coal, and renewable sources like wind and solar.

Natural Resource Sectors

America's first residents were indigenous communities organized around linguistic tribal communities. As these communities were marginalized and displaced by European-American, Spanish-American, and Russian-American settlers, the foundational economies were rooted in natural resource industries. In the following segments, we explore each of the seven primary natural resource sectors that form the basis for most rural communities, their economies, and societies.

Production Agriculture. Production agriculture, including farming and ranching, is possibly the most universal natural resource sector in rural America. Over time, production agriculture has embraced larger-scale commodity agriculture, employed automation, and increased output, while reducing labor needs. An important countertrend is farm-to-table agriculture, reducing farm and ranch size and increasing workforce needs, creating entrepreneurial opportunities in peri-urban America.

Mining. Minerals are foundational to a modern economy, ranging from iron ore and copper mining to newer mining operations that extract trace minerals essential for smart devices like cell phones to new battery technologies. Throughout rural America, there are ghost towns that were once thriving communities when mining operations were active and died when mineral resources were depleted. In some cases, mines come back to life when new technologies make it possible to extract more minerals not possible with older technologies. Later in this paper, we provide some powerful examples, further illustrating mining landscape-related entrepreneurial development.

Water. The survival information indicates that human beings can survive maybe a month without food, but only a few days without water. Water is a foundational resource employed in so many ways from irrigated agriculture, enabling water-based transportation systems to meeting the domestic water needs of communities. For some parts of rural America, water supplies have become a "tradable" resource, where water from one part of rural America can be sold and transported to another part of America. Major western cities like Los Angeles could not exist without this arrangement, where water comes from the rural Sierra Nevada Mountains and the Colorado River.

Tourism. Tourism is often, but not always (e.g., think Disney World, Branson, Atlantic City, or Las Vegas) dependent on natural resources like seashores, lakes, rivers, forests, deserts, and mountains. Natural resource-dependent tourism is generally located in rural areas, creating economic activity and opportunities for rural communities. Where there are major resources like national parks, (e.g., Estes Park and Rocky Mountain National Park), there are gateway rural communities highly dependent on these destinations for their existence.

Fisheries. Historically, humans lived near water and fish were a foundational food source. Fisheries continue to be an important component of human and livestock food. Like agriculture, fisheries have automated, creating commercial fishing operations. But as the case with production agriculture, there is now a growing fishing line-to-table sector. Smaller operators catch fish and other seafood, delivering these fresh to consumers, restaurants, and groceries. Commercial (versus wild) fish and seafood farming is increasingly important to meet growing consumer demand.

Forest Products. Forest products have long been essential for human settlement, providing timber for homes, bridges, and other widely- employed uses. Timber production and processing, generally done closer to harvesting areas, continues to be very important to our economy. However, there are parts of the country where timber harvesting is no longer economically feasible. There is also the development, particularly in the southeastern United States, where commercial timber farms are important, producing both dimensional lumber and feedstocks for things like paper products.

Energy Production. Our industrialized and modern economies need energy. There are nonrenewable fossil fuels like oil, natural gas, coal, and uranium, along with an older generation of hydropower, and now a new generation of renewable energy resources like solar, wind, and geothermal energy. Potentially the world, driven by the adverse effects of climate change, is moving from carbon energy sources to non-carbon renewable and nuclear energy sources that will create winners (e.g., wind farms in western Texas) and losers (e.g., coal mines in central Appalachia).

Transportation Corridors. Later in this strategy paper, we dig deeper into the typical value chain of a natural resource industry to highlight entrepreneurial development opportunities from extraction to delivery, to end consumers. Transportation corridors, enabling pipelines, highways, airports, and the list goes on, are core to natural resource industries. One cannot visit Yellowstone without an airplane ticket and/or motor car.

Headwaters Economics Resources

Headwaters Economics based in Bozeman, Montana, provides more detailed profiles of a number of natural resource industries, including:

Land Use – Federal Land Payments Living Near Public Lands
Agriculture – Mining, Oil & Gas – Timber – Tourism

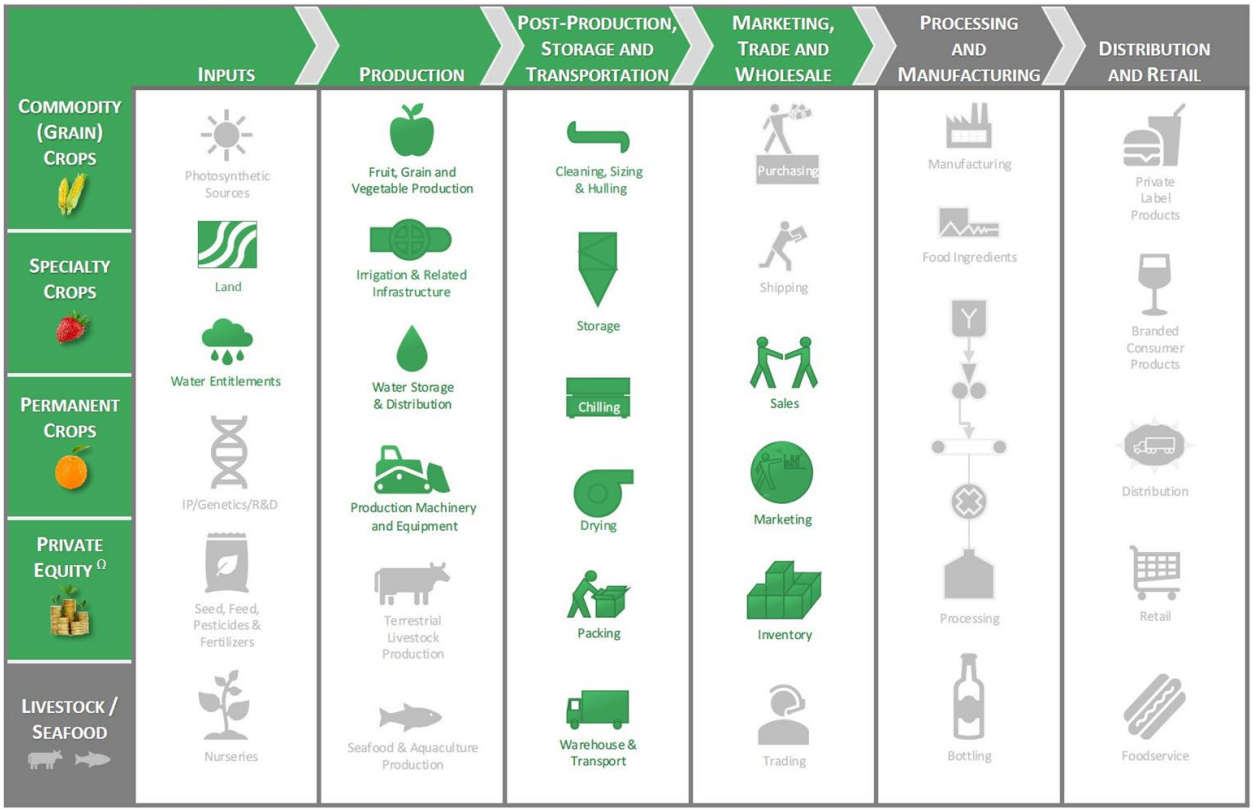
Profiles can be generated for each and every county or census area in the United State through this free research group, supported by a collaboration of federal agencies and partner organizations. Headwaters is an amazing resource, and we strongly recommend its use with this strategy paper.

Except for tourism, most natural resource industries have a complex value chain from extraction to end-use consumers. On the following page, Figure 2 provides a value chain for production agriculture to illustrate what we mean by value chains. In understanding value chains, there are opportunities for rural communities and their entrepreneurs to tap into both upstream and downstream activities.

Natural Resource Value Chains

Every natural resource industry has a value chain, including upstream and downstream activities. As our rural communities better-understand the value chains of the natural resource industries that are part of their economies, it is possible to build intentional and impactful development game plans at both the venture and community levels.

Figure 2. Production Agriculture's Value Chain Illustrated



AgVictus Food and Agriculture Value Chain

In our story capture work of Ord, Nebraska[3], we begin in the 1970s with a two-dimensional economy: farming and ranching, with Ord as an area hub community. The agricultural sector largely produced corn and cattle as commodities, selling them with little or no value-added activities. Even upstream inputs like fertilizer, seed, power, and technology (e.g., tractors, combined, pickup trucks, etc.) came from outside the community. Hopefully, some of these inputs were sold to farmers and ranchers through

[3] For more information on our Ord, Nebraska work, please visit our website's resource library.

local providers representing seed companies, for example. In the 1970s and 1980s (e.g., farm crisis) the only downstream activities were trucking crops and livestock to markets and possibly the local elevator. Beginning in the 2000s, Ord became host to an ethanol plant (now Green Plains Energy), that converted the area commodity, corn (purchased at a somewhat higher price), into ethanol, distillers' grains, and other products. Over time, a cluster of upstream and downstream spending capture and value-adding activities appeared, including farmers producing grain, livestock producers buying distillers' grain for feed, cubing, and allied activities like trucking, truck stops, and services for truckers. Today, Ord has a much more diversified, seven-sector economy (read *Defining Ord and Its Economy* in our resource library.) Ord has not only diversified beyond commodity agriculture but has diversified within production agriculture with this value chain cluster.


Typical ethanol plant complex

Most natural resources produced in rural America are governed by national and international markets. The vast majority of timber, mining, agricultural, energy, fisheries, and energy production is extracted locally, but transported to other communities to be processed. But, as illustrated in our story from Ord, it is possible to bring value to raw commodities, creating additional and higher-value economic activity, strengthening area economies. With local ownership of some of these activities, like the cubing plant, trucking companies, truck stops, and allied activities, income from these economic activities translates to rooted wealth, contributing to community prosperity.

Boom-and-Bust Cycles

Commodities, whether crude oil or corn, are governed by regional, national, and international markets. Prices are set in these larger geographies based on world supply and demand. Producers of these commodities are price takers regardless of their costs. Given dynamic international markets, these industries are subject to regular boom and bust cycles, often more severe than normal regional and national business cycles. Boom and bust cycles are damaging to the rural communities in these regions. Diversifying beyond and within these natural resource industries moderates the adverse impacts of boom-and-bust cycles.

As we wrap up this part of our strategy paper, we consider a powerful story from the forests of northeastern Arizona. Snowflake, with a 2019 population of about 6,000, is a hub city in this very rural region that anchors a forest products cluster. This part of Arizona is home to mountains and forests that have supported a logging and milling industry for decades. Following a particularly devastating wildfire, the U.S. Forest Service and local interests collaborated to develop not only a forest management plan, but a strategy to revitalize this industry. I personally visited this area as a keynote speaker at a rural development conference based in Snowflake.


Forest Scene near Snowflake, Arizona

One day, we loaded on school buses and toured a number of the timber-based, value-adding ventures. It was a remarkable day and illustrates what is possible when civic, governmental, development, and entrepreneurs work together. The following are some ventures visited:

Livestock Bedding. By-products from lumber milling was used to produce high-quality livestock bedding, particularly for horse hobby farms.

Pellets for Stoves. Very fine sawdust was captured and used by another firm to produce pellets for America's growing pellet stove consumer market.

Garden Mulch. Lower grade waste from milling was converted into garden mulch for both the area and the booming city markets of Tucson, Phoenix, and national markets.

Value Chain Waste Reduction and Value-Adding

America's Plains Indians, dependent on bison, were known to use every part of a bison in practical ways; there was no waste to speak of. In the same vein, the forestry value chain in northeastern Arizona was fixed on using every part of the tree. Larger trees produced dimension lumber and poles. Bark and larger waste was burned to generate electricity, produce mulch and bedding, and value-added products such as pellets for wood stove. One firm's waste was another firm's input to produce yet another product. This articulated value chain created year-round versus seasonal employment for local truckers and allied businesses like machine shops, cafés, and other ventures.

Electric Power Production. Some waste was employed by another firm to produce electricity for the regional grid.

Dimensional Lumber. Once the predominate market for this region's timber, larger trees supported traditional dimensional lumber and pole, fence post and natural beam products.

Composite Beams. One of the most interesting ventures I visited was a company owned by a team of brothers. Employing very sophisticated laminating technology, their technique used small-diameter logs and waste to produce composite beams, like those found in high school gyms.

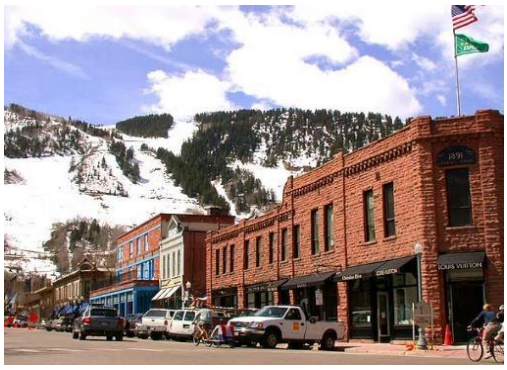
Another neat aspect of this entrepreneurial venture was its partnership with a regional prison, where nearly all the employees were either work-release or out-of-prison inmates. I was there the day two of these inmates graduated from prison garb to normal Carhartt work wear, making a very neat experience and a win-win situation!

Loggers. Demand for raw forest products (e.g., logs) coupled with planned and sustainable harvesting access from the U.S. Forest Service, re-energized logging activities in this region.

Truckers. Truckers were needed to haul logs, waste used in other value-adding activities, and to transport final products to markets.

Allied Activities. When you have a high level of primary activities, as described in this section of our strategy paper, allied activities are made possible from mechanics, machine shops, parts stores, cafés, and the list goes on and on.

Aspen, located in the heart of the Colorado Rocky Mountains, has a remarkable history. Aspen's first census recorded population was 5,108 residents in 1890. But its origins are earlier as a mining camp founded in the late 1870s and early 1880s, during Colorado's Silver Boom. In a matter of two decades, this mining camp became a city first peaking in population in 1890, before silver prices crashed and the mining boom waned. By 1930 and the Great Depression, Aspen's population had dropped to 705 residents. As the mines closed, residents simply abandoned Aspen and moved on. The same can be said of mill and cannery towns, as well as rural villages once supporting farms on every quarter section. Following World War II, the seeds of renewal for Aspen were planted, not in the silver mines, but on the emerging ski slopes and a whole new industry: snow skiing. By 2019, Aspen was being re-invented as a world-class resort community for the world's billion and millionaires. In 2019, the permanent resident population reached 7,401 residents. The community's population is actually larger, as many working-class families cannot afford to live in Aspen and live down-valley.



Renewable to Nonrenewable Natural Resource Industries

The extraction of minerals, most fossil fuels, and uranium are clearly nonrenewable, as it takes geological time to produce these resources. Other natural resource industries have the potential to be renewable, including agriculture, forestry, fisheries, and water, when properly managed. However, during the previous centuries, these resources have not been sustainably managed, resulting in their loss. While farming continues in the Great Plains, for example, loss of topsoil (e.g., essential for production agriculture) is like oil – once it is lost it takes a very long time to renew. Even tourism, dependent upon natural resources like mountains and forests, should be renewable. But when climate change-driven wildfires and tree loss occurs, the attractiveness of these locations is diminished. Wild weather is a threat to a large part of destination tourism from the resorts on the Caribbean Sea in Mexico to coastal communities and snowmobiling in northern Minnesota, Wisconsin, and Michigan.

Advice for Nonrenewable Resource-Dependent Communities. Communities dependent upon nonrenewable natural resources must embrace a two-part strategy. First, provide a supportive environment when economic activity is active, and second, diversify the economy with some wealth being created.

We share two stories. The first is a story of tragic consequences, rooted in the Tri-State Mining District of Kansas, Oklahoma, and Missouri. The second, from Minnesota's Iron Range, where visionary leaders set aside some iron ore wealth into a trust fund to support the future of this region, understanding the day would come when this industry could not sustain this region and communities.

Tri-State Mining District – A Tragic Lesson

The Tri-State Mining District, located in southeast Kansas, northeast Oklahoma, and southwest Missouri, produced lead and zinc for more than 100 years, beginning in the 1850s and continuing until the last mine near Baxter Springs, Kansas, closed in the early 1970s. Today, this part of the Tri-State Region, estimated at 2,500 square miles of area, is a wasteland and superfund site, due to mine-related pollution.

In David Robertson's book, Hard as the Rock Itself: Place and Identity in the American Mining Town, he tells the story of this once-thriving region, directly employing thousands of workers, which dried up. This catastrophic community decline and failure as the mines closed, area residents saw economic activity recede and the realities of a toxic landscape become apparent. During its hay day, this region produced hundreds of millions of dollars (in today's terms) of wealth. This region was called the "Arsenal of Democracy," as it supplied lead and zinc in World I and World War II for the munitions industry.

While the good times rolled, little thought was given to the future of the communities so dependent on this non-renewable resource. As has been the case in so many communities, once the resource is non-economical or played out, these non-diversified regional economies collapse.

Next is a story of vision, hope, and transformative change.

Minnesota's Mesabi Iron Range – A Story of Vision and Hope

The Mesabi Iron Range is located west of Duluth in northeastern Minnesota. In the 1860s, it emerged as one of America's major iron ore-producing regions. Vast wealth was produced as this region supplied a growing and industrializing economy. Iron ore is foundational to the production of steel and steel is foundational to an industrial economy.

The **Iron Range Resources and Rehabilitation Advisory Board (IRRRB)** https://mn.gov/irrrb/ was created by Minnesota law in 1941. A severance tax was applied to the gross value of taconite to fund the board and create a trust fund to support three basic futuristic purposes:

Support innovation in the iron ore industry to sustain its operations.
Provide quality of life funding for area communities, including education.
Provide funding and support for non-sector economic diversification.

The IRRRB was visionary in 1941 and there are, unfortunately, few other examples of this kind of policy and development with respect to nonrenewable natural resource-dependent regions.

In our extensive work in western North Dakota associated with the Bakken oil boom, we recommended that a portion of the state's severance taxes be placed into a trust fund for similar purposes as embedded in the IRRRB. As North Dakota has a strong Norwegian heritage, we even enlisted the Norwegian Sovereign Wealth Fund (https://www.nbim.no/) to provide technical assistance to North Dakota's governor and state legislature. Billions of dollars are being extracted from western North

Dakota as part of the Bakken play. At the time we were working with this region and its communities, the State of North Dakota already had a 9 percent of gross value severance tax in place. We proposed that 3 percent of this existing tax capitalize a regional trust fund. Our collaboration advocating for this policy has been unsuccessful. Even our use of both the Tri-State Mining District and Iron Range stories failed to move North Dakota's policymakers, even as communities serving this region were overwhelmed with housing, public safety, healthcare, and infrastructure challenges. Rural communities, dependent upon nonrenewable natural resources, should advocate for regionally controlled trust funds similar to the IRRRB model.

Advice for Renewable Resource-Dependent Communities. Rural communities and regions dependent upon theoretically renewable natural resource industries should first work with Land Grant Universities to assess just how sustainable these industries really are, given management practices (e.g., depletion of topsoil in production agriculture regions) and international trends (e.g., movement of forest products from the Northwest to Canada). Next, rural regions should then explore public policies to foster charitable giving to endowments and public trust funds.

The annual value of commodity agriculture in my home state consistently exceeds $20 billion per year. The value of agricultural land in Nebraska is a remarkable $350 billion. If just 1 percent of the value of agricultural land was gifted to community philanthropic endowments, an estimated $3.5 billion could capitalize for communities, schools, and other rural purposes. Assuming conservative management with a 4 percent annual payout, this $3.5 billion collection of endowments could generate $140 million in annual funding forever.

We will release a story about the Nebraska Community Foundation and how it is realizing this vision in the Cornhusker State. We are also curating a story about the Ford Family Foundation, with assets of more than $800 million, and its entrepreneurial ecosystem building strategy in Oregon.

To illustrate the power of long-term thinking and investment ahead, if just one percent of the annual value of agricultural sales was captured into a public trust fund for these regions, more than $2 billion, over a decade, could be captured and used for regional and community economic development. With a four percent conservative payout, a $2 billion trust fund could generate $80 million per year, forever.

Every year, rural regions, and communities struggle to find sustainable and robust funding for community economic development, grossly under-funded in rural America. Rethinking how to create regional trust funds and community/regional philanthropic endowments, derived from the wealth of natural resource industries, would transform the capacity for development.

Before moving on to our next topic, remember,

Always diversify within and beyond natural resource industries.
Diversity contributes to sustainable prosperity and resilience.

Next are more **specific entrepreneurial development opportunities** associated with rural natural resource industries.

Natural resource industries operate in a global marketplace. Often, these industries are operated by larger regional, national, and international firms. Rural communities may feel lost in what to do to support these industries, given these realities. We may also perceive there are limited related entrepreneurial development opportunities. While perhaps more limited, these types of opportunities do exist.

Entrepreneurial Development Opportunities

Figure 3 identifies four specific entrepreneurial development opportunities related to natural resource industries.

Figure 3. Natural Resource Industry-Related Entrepreneurship Development Opportunity

Supportive Environment	If a particular natural resource industry is important to your community, like agriculture, providing a supportive environment, with good communication, for that industry is important. For larger employers like a mine, check our resource library for our strategy paper focusing on ***Larger Employer Retention and Expansion***. We provide an example below of a Nebraska program focused on creating a "friendly" environment for livestock production.
Increased Spending Capture	The trend is buying inputs outside the community, but, for many, natural resources is rising, accompanied by opportunities for area entrepreneurs to capture some of this spending. Check our resource library for our strategy guide on **Spending Capture** to find a more detailed game plan and information.
Diversification Within Natural Resource Industry	In this Natural Resources Development strategy paper, we shared two quick stories: one from Ord, Nebraska and its ethanol cluster, and another from the Iron Range of northern Minnesota. Both focus on how communities and regions have worked with natural resource industries to diversify them and support increased competitiveness.
Diversification Beyond Natural Resource Industry	For rural communities totally dependent on one or two industries, with one being a natural resource industry prone to boom-and-bust cycles, diversifying beyond this base is critically important. Our stories from Ord, Nebraska and how, through entrepreneur-led development, has grown from a two- to seven-sector economy, speaks to both the value and potential of diversifying beyond a natural resource industry like commodity agriculture. Check out our paper, ***Looking Back at America's Farm Crisis***, located in our resource library, for more information about the ag industry.

Most rural communities are actually peri-urban in character, where there are small cities, towns, and villages with surrounding rural countryside, where natural resource industries can be found. Even for smaller rural communities, there can be challenges between urban residents and these industries. Two quick examples highlight our point:

Pickaway County, Ohio. Pickaway County is a historically rural county, with a 2019 population of 58,457. While rooted in both commodity agriculture and manufacturing, it is changing. This county and its lead community of Circleville is located directly south of the Columbus Metropolitan Area. The northern part of the county is experiencing small city, suburban, and exurban (e.g., acreages) development, driven by

growth in the Columbus metro. Newly minted subdivisions are surrounded by larger-scale corn farms. In situations like this, there are tensions between suburban residents and farmers tied to farm equipment on rural roads, noise at night, and farm-related smells. Farmers and these urban residents must find common ground to co-exist. There is also a deeper challenge, as the economics of suburban development are stronger with respect to land purchases, denying area farmers the ability to cost-effectively expand.

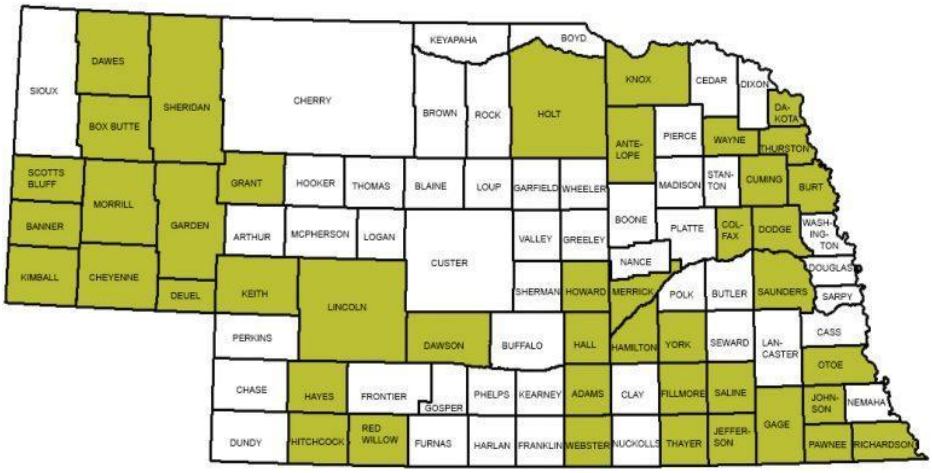
Custer County, Nebraska. Even in smaller and more rural areas, where agriculture continues to be king, part of the culture there can face challenges between farmers and rural residents. Custer County has a 2019 population of 10,826, with its lead community, Broken Bow, at 4,104. It has faced challenges between a world-class feedlot important to the region's economy and odor and truck traffic issues. In our quick story about Nebraska's Livestock Friendly Program, you will note that Custer County has not adopted it.

Nebraska's Livestock Friendly County Program

Many agricultural states have adopted "farm and/or livestock friendly" programs to address the peri-urban tensions between town and farm interests. Nebraska has such a program, described here from the Nebraska Department of Agriculture's website:

"The Nebraska Livestock Friendly County (LFC) program is a voluntary program that recognizes counties that actively support the livestock industry. Directed by the Nebraska Legislature, the Nebraska Department of Agriculture uses the LFC program to assist counties and agricultural producers promote the livestock industry. Interested in becoming a Livestock Friendly County? Looking to contact an LFC about livestock development? Call 800-422-6692," https://nda.nebraska.gov/promotion/livestock_friendly/index.html

Currently, 50 of Nebraska's 93 counties have formally adopted the Livestock Friendly label with its program elements. We encourage your community to explore similar programs in your state related to natural resource industries.



Central to the rise of the United States as a premiere industrial and modern economy in the world, are its rich endowments of natural resources. The U.S. is the second-largest land mass country in the world, with nearly 3.8 million square miles (msm) (e.g., Russia: 6.6 msm, China: 3.7 msm, Brazil: 3.3 msm). The natural resources found in rural America create the foundational economies for the vast majority of rural communities and regions.

Diversity Within and Beyond Natural Resources

On page 3 of this strategy paper, Figure 1 illustrates that natural resource industries were foundational in creating the first non-native economies in rural America. Over the decades, structural changes, and particularly automation, have reduced employment associated with these industries, undermining the stability of many rural communities. See Figure 4, below.

Based on our work throughout North America, we recommend a basic three-part development strategy. First, do what you can to support industries in your region to remain vibrant. Second, when possible, work with these industries to help them diversify, contributing to continuing competitiveness. Finally, employ entrepreneurial development to diversify beyond these industries. If you need help, look to e2's other likely entrepreneurial development opportunities for guidance.

Figure 4. Causes of Natural Resource Industry Activity Decline

Resource Exhaustion	**Non-Economical**	**Automation**
As was the case with silver mining in Aspen, Colorado, resource exhaustion can create a local collapse of an industry. Nonrenewable natural resources are vulnerable to eventual resource exhaustion.	Most natural resources are commodities operating in a global economy. Production may shift from one location to the next, based on economics. These resources are very price sensitive.	Even natural resources that are thriving, like production agriculture in the central U.S., automation has greatly reduced workforce needs, undermining population bases for many rural communities.
Environmental, Labor Law, Regulations, and Community Preferences There is considerable and long-standing debate regarding the impact of environmental, labor, health, and safety regulations on the competitiveness of America's natural resource industries. Higher standards, focusing on resource sustainability, fair labor, and strong health and safety requirements, do drive up costs when compared to parts of the world where these standards are lower. International trade that fails to create a robust and fair playing field in these areas can distort the viability of these industries in rural America.		

It is our hope this strategy paper focusing on **Natural Resource Development** can help your community envision and stand up a more impactful natural resource development game plan.

We want to hear from you. Send us your questions, comments, and insights by sharing with Don Macke at **don@e2mail.org**.

How e2 Can Help

e2 Entrepreneurial Ecosystems helps communities increase prosperity through entrepreneur-focused economic development and ecosystem building. Led by **Don Macke**, e2 has a national team of practitioners who bring research, coaching, incubation, market intelligence and other expertise to this work.

What We Do

- **Mentoring.** We mentor and coach new practitioners seeking to pursue entrepreneur-led development. We provide advice and support for building eEcosystem strategies that work.

- **Analytics Support.** e2 helps communities and regions understand their entrepreneurial potential through research and data. Explore some of our research tools and reports **here**.

- **e2 University (e2U)** is our platform for sharing more than 1,000 guides, papers, stories, tools, and resources with communities wanting a deep dive into eEcosystem building. Don Macke leads the e2U team with analytics support from **Cathy Kottwitz** and report preparation from **Ann Chaffin.** Special recognition for their e2U legacy contributions goes to **Dana Williams** and **Deb Markley,** LOCUS Impacting Investing.

- **Fostering the eMovement.** We support the national entrepreneurship movement along with our partners including the **Federal Reserve Bank of Kansas City**, **SourceLink**, **Edward Lowe Foundation**, **Kauffman Foundation**, and **NetWork Kansas**. We are a founding member of **Start Us Up: America's New Business Plan**, a coalition dedicated to strengthening entrepreneurship across America. Together, we continue to advance the foundational ideas of building entrepreneurial ecosystems and entrepreneurship-led economic development.

Contact Us

don@e2mail.org
(402) 323-7336
www.energizingentrepreneurs.org

NetWork Kansas, a 501(c)(3) nonprofit organization dedicated to developing an entrepreneurial ecosystem in Kansas, is the home for e2 Entrepreneurial Ecosystems. NetWork Kansas connects aspiring entrepreneurs, emerging and established businesses, to a deep network of business building resource organizations across the state.