AXTEN FARMS

This is part of a series of case studies about the transformational work happening in Canada's agriculture and food sectors and is designed to inform investment in the space. A closer look at Axten Farms, provides insights into the opportunities and roadblocks at the foundation of Canadian food systems transformation: farmers.

AT A GLANCE

Axten Farms is a multi-generational farm in Saskatchewan dedicated to growing healthy grains and producing healthy flours. They are regenerating the soils and working to bring life back to the soil, farm, and community.

Farm Name: Axten Farms

Operation Type: Grain farm, vertically integrated to sell branded product

Location: Saskatchewan

Products: Grains and Flour

Acres Managed: 12,000 (10,000 are crop, 2,000 are native prairie and tame seeded pasture)

Farming History: 100+ years old, multi-generational, family farm

Certification: RegenifiedTM Certified

Regenerative Practices Used (sample): Cover crops, intercropping, control traffic farming, low disturbance seeding, minimal synthetic input use, livestock integration, pollinator strips with perennials.

FINANCE SNAP SHOT

Business Model: Vertically integrated grain farm

Funding: Self-funded + debt with traditional bank loans and Farm Credit Canada

Leading business lines: Ancient grains, including cover crop seeds, and flour

Future investment needed:
"I don't know - I'd need to hear the terms."

THE PROBLEM: CONVENTIONAL PRODUCTION SYSTEMS DEGRADE SOIL HEALTH

A staggering 52% of the world's agricultural soils are degraded, according to the UNCCD (United Nations Convention to Combat Desertification) and the FAO (Food and Agriculture Organization). Farming practices - especially many of those encouraged in conventional farming systems - can degrade soil health through various methods including: excessive tillage, mono-cropping, over reliance on chemical fertilizers and pesticides, poor irrigation management, overgrazing, and deforestation, which all contribute to soil erosion, nutrient depletion, disruption of soil structure, and damage to beneficial soil organisms, ultimately reducing soil fertility and productivity.

Agricultural Practices & Impacts on Soil

Type	Physical Degradation	Chemical Degradation	Biological Degradation
Causes	• Use of heavy farm machinery • Repeated tillage	• Misuse of fertilizer • Pesticide use • Water quality and management	• Depletion in organic matter • Reduced biodiversity
Impacts	• Structural deterioration • Restricted root growth • Reduced water retention	• Reduced water availability • Toxic salt levels • Environmental pollution • Structural deterioration	• Carbon cycling • Processes of water & nutrient regulation • Increased vulnerability to physical degradation

Source: RFSI, adapted from www.conserrveagri.com

This degradation can also have negative repercussions beyond the soil, including: water and environmental pollution, biodiversity loss, decreased soil sequestration that can contribute to climate change, and decreased quality and nutritional value in crops.

PROBLEM #2: A GAP IN DEMAND FOR QUALITY PRODUCTS

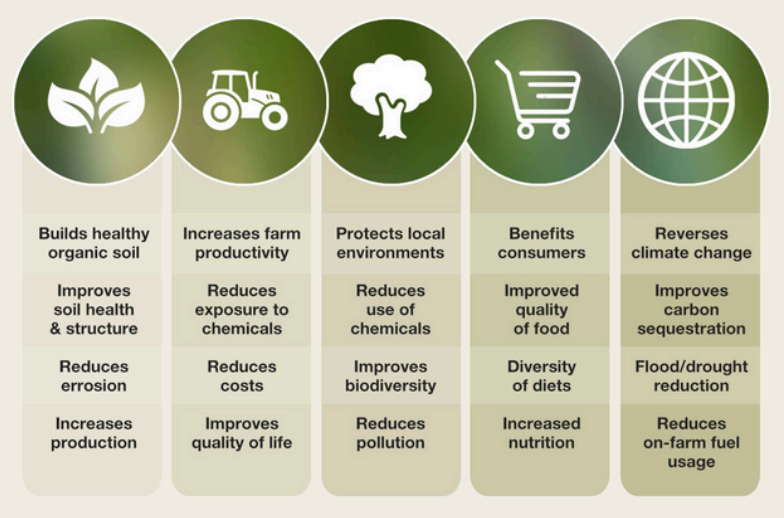
There are farmers who are willing to shift production strategies in order to solve for Problem #1 but demand for high quality, environmentally sustainable products is lagging behind supply, making it harder to get product to consumers and get these. farmers paid for the benefits they create in their new practices.

SOLUTION #1: HEALTHY SOILS AS A FOUNDATION

Maintaining healthy soils can have positive impacts for the farm, environment, climate, as well as community and human health. Increased soil health and other beneficial outcomes can lead to more resilient soil and farm operations, as well as improved nutritional quality of the crops that go into the food system.

The chart to the right shows a diverse sample of the benefits of regenerative agriculture practices that align with five key soil health principles: limit soil disturbance, protect the soil surface, build biodiversity, always keep a living root, and integrate animals. The Axtens bring these benefits to the systems via their production of grains and flours.

Benefits of Regenerative Agriculture Practices



Source: Springfield Agri

MEET THE AXTENS: FARMING FOR SOIL & HUMAN HEALTH

Derek Axten's great grandfather came to Canada from England and built the family homestead in Saskatchewan in 1916. Almost 85 years later, in 2002, Derek and Tannis Axten were married and took over the farm operation. By 2006 the couple realized how fragile and dry their soils were. They set out to build up their soils and, in particular, learn how to better maintain soil moisture.

Among the first solutions for them was to minimize soil disturbance, prompting Derek to buy a disc drill - which enables precise seed placement, minimizes soil disturbance and improves moisture conservation, among other benefits. Derek started attending on-farm field days and at one particular event, Derek met well-known regenerative farming pioneer Gabe Brown - in line for a hot dog. This set the Axtens on a journey to learn how soil functions and ignited their experimentation with new strategies on the farm. It transformed the way they think about and run their operation - for starters, they had never thought about biology before. There was an entire below-ground ecosystem that they could nurture in order to create on-farm resilience to weather and produce higher quality crops.

Today, Axten Farms is a 12,000 acre, vertically integrated, multi-crop grain and flour operation that values soil health above all else. The grains and flours derived from their farm are all the product of many regenerative practices and are all Regenified TM certified as of 2023.

OUTCOMES TARGETTED

Axten Farms have the following expectations of their production systems and the products derived from them:

Build resilient soil and ecosystem

Produce more nutritious food

Build community capacity

ONE SOLUTION CREATES OTHER CHALLENGES TO OVERCOME

The way the Axtens farm creates a whole host of solutions for their farm as well as the community and ecosystem around them but it also presents new challenges - particularly when the rest of the supply chain is not as developed for regenerative crops and products. Let's take a closer look...

WHAT SETS AXTEN FARMS APART: VERTICAL INTEGRATION

Beyond applying many regenerative practices to their crop production, Axten Farms also harvests, cleans, and mills everything on the farm. They built a large, food grade HACCP-certified facility capable of milling 12,000 pounds of flour a day. This provides full traceability for all grain and flour sold by Axten Farms. It's something Tannis and Derek are proud of and something they hope will be a compelling story for buyers of their grain. This offers them potential to capitalize on growing demand for traceable, high quality food grade, but to date there hasn't been enough market demand to operate at full capacity.

BUSINESS LINES

The Axten Farms business lines include:

Grains: Flax, Camelina, Mustard, Khorasan, Red Fife, Spelt, Rye, Desi Chickpeas, Winter Peas, Oats, Buckwheat and Einkorn

Flours: Eight varieties of flours from the grains grown above and milled in their food grade facility, right on the farm.

Livestock Grazing: Although they stopped raising livestock themselves in 2007, the farm is still set up for it. Today, they earn a little extra income from a per day rate for their neighbors' cows to graze. While not a huge revenue source, the livestock brings ecosystem benefits, including fertilizing the soil as they graze.

MARKETING THEIR PRODUCTS

To help secure markets for their grain and flour, the Axtens work with a broker. The majority of what they sell today is in the form of grains and because of the general quality - not necessarily the practices used in production. But slowly, they are seeing more companies that are looking to source regenerative or sustainable products starting to reach out and they are hoping that is the future.

They also sell a lot of their grain as a cover crop mix into the cover crop market. Seed prices are better than selling to commodity markets and the cleaning facility allows them to sell reliable, clean, pure seeds.

Despite being set up to produce literal tons of flour a day, only a relatively small proportion of their crops are sold in the form of flour.This is something they would like to see increase because this is where they can get their nutritious, high quality products into consumer's diets most directly - something that is key to their mission.

GREATEST NEEDS: MARKET ACCESS & DEMAND FOR FLOUR

The markets that are currently most successful for the Axtens - cover crop seeds and other grains - get them through, but it's not their passion, says Tannis. They would much prefer that their grains and flours go to like-minded buyers and reach consumers who value quality food ingredients and the practices used to get there.

What's holding them back? Demand for high quality, environmentally sustainable products is lagging behind supply. This presents several challenges:

- Finding off takers that value quality can be difficult
- Many buyers are hesitant to take on risk and cost of new quality ingredients
- Off taker demands can change as ingredient mixes change or other grains gain popularity
- There can be misaligned expectations for supply capabilities when buyers want something immediately but producers are working on annual growing cycles

Unfortunately, Tannis explains, the market just doesn't care enough yet about the way crops are grown to support this. There is some interest and they are in several conversations about market opportunities but these move slowly. They had expected things to progress faster and that those who purchased their flour would then use their story to sell their products. They believe the slow pace of change falls back on consumers. Food preferences are so deeply ingrained in individuals, making shifts to new ingredients a slow process. From conversations with commercial bakeries and other enterprises, the Axtens understand this to be because consumers aren't demanding it, so the businesses have little incentive to take on the additional risk and cost of new, higher quality ingredients.

To build on the success they have already enjoyed, serve as an example for other farmers transitioning, and solve these challenges, the Axtens ultimately need two key things things:

- Easier access to markets that value high quality regeneratively produced whole grains and flours.
- Increased consumer demand for these same products

In the meantime, they have built a flexible operation able to pivot production based on market demand - something that is ever-changing. These changes are not ideal, but the Axtens work hard to be set up to react and shift production as the market shifts as best they can. This has allowed them to stay resilient, while maintaining a high degree of diversity. For the most part this works, but it does mean that sometimes, like right now, that the Axtens have to sit on grain that they haven't found a market for.

FINANCING AND THE BEST INVESTMENT THEY'VE EVER MADE

The Axtens have made a lot of investments into their farming operation - from improving the quality of the soil, to building the infrastructure for seed cleaning and milling, to purchasing additional land to expand the operation. They have self-financed all this with their own capital and traditional debt from both their local bank and Farm Credit Canada (FCC). They use both "to keep both honest." Why debt and not other forms of outside investment? Simple - despite that paying interest isn't "fun" (as Tannis describes), by not taking on any outside investors or third party partners, they get to maintain all decision-making.

While their hearts lie in the potential that their vertically integrated operation holds to feed others with nutritious flours, Tannis does not hesitate to explain that land is, by far, their best investment. The asset is alway growing in value and with their farm management, they can further improve the long-term value and viability of the asset.

At present, they have no need for further investment in their operation, although they admit, Derek is never short on ideas. And when asked if they need further investment, he replies, "I'd have to see the terms." Something that has piqued their interest of late: how can they continue to use their farm and work to build community capacity and help it thrive? In that, one day, there may be potential for further investment.

OTHER KEY CHALLENGES:

Beyond finding markets, the Axtens have identified the following challenges:

Early on, their biggest challenge was **access to education and information** about the on-farm transition to more resilient practices. They found themselves traveling to conferences and field days in the U.S., which seemed to be ahead in this arena. After that, it came down to a lot of trial and error. Today, while they are always learning, they are among those farmers on the leading edge of transition knowledge.

Today, their biggest barrier is **weather** and they find it's just getting more dramatic. This past spring, it was not only dry (which they are used to) but they also faced two weeks of unseasonably high temperatures, followed by a frost in June and August! This seemingly growing risk is a leading reason that they farm the way they do - to be more resilient to weather. It's one thing they can try to control in the face of uncontrollable weather.

LESSONS LEARNED

After more than two decades farming and 15 years working on transition, the Axtens have learned a few things along the way to inform others' journeys and investments into the space:

- Investing in our soil and farm is a long-term investment that pays off in resiliency (and reduced risk).
- Soil takes time to change, so don't look for instant results.
- Venturing down a new path is not for the faint of heart. Building our own seed cleaning plant and flour mill has been a huge learning curve and investment.
- Don't grow specialty grains on speculation, it is best to get commitment from companies first.
- Be adaptable and know your context.
- Never say never

SYSTEMIC NEEDS

Farmers like the Axtens are answering the call for the systemic benefits that better production practices can bring, but they are early adopters and there remains a lot of ecosystem building to be done to close the current gaps. Their case also reinforces that to build new systems requires a holistic approach, one where investment in and building of different points in the system is done in lock-step as a coordinated effort.

The case also prompts further exploration into:

- Where can investment and policy play a role in helping the system mature... and do so faster?
- What kind of funding can catalyze the demand side?
- Are more resources needed across the system to play a match-making role for supply with off-takers in Canada and beyond?
- Who can step into the role of coordinating systems development in Canada and the funding needed to drive it?

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