

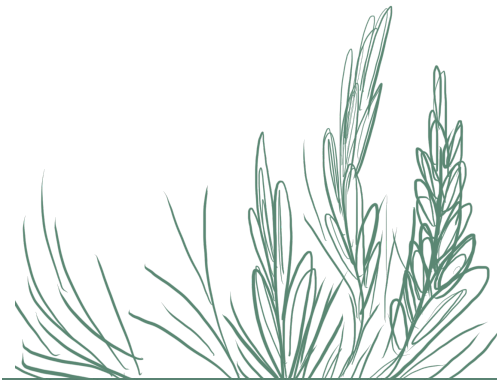
REGENERATIVE AGRICULTURE

EMBRACING REAL GROWTH
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**CATAMOUNT
FELLOWSHIP
2023**

LAND ACKNOWLEDGEMENT_

We are connected to the land that we live on. All research and work completed through the Catamount Fellowship was done so on the ancient lands of treaty 7; the ancient and hereditary lands of the Niitsitapi, Nakoda, Tsuut'ina and Métis Nations. I am honoured and privileged to learn and grow on this storied land.

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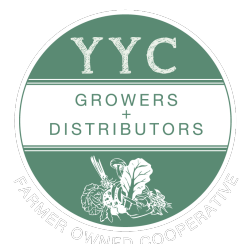
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Catamount Fellows



Institute for
Community Prosperity



CONTEXT_

Over the past eight months of participating in the Catamount Fellowship, I have embarked on a journey of changemaking. Collaborating with my community partner, YYC Growers, and my faculty mentor, I have sought not only to understand the ideas and goals behind regenerative agriculture, but to chart its overarching system. Tasked with researching the benefits and barriers associated with the topic of regenerative agriculture, a larger picture has been revealed.

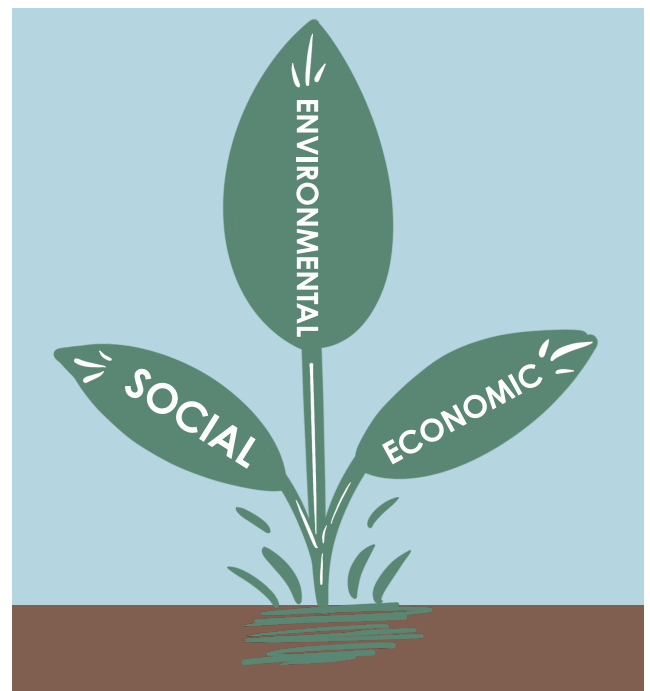
MY PARTNER_

Local to the Calgary, Alberta area, YYC Growers & Distributors connects communities and consumers to farmers and ultimately good food. As stated on their website:

YYC Growers “prides itself in being not just sustainable but even more importantly, regenerative. Regenerative farming is a dynamic state-of-being. A regenerative farmer is guided by this question, ‘Is my soil better this season than last?’”

REGENERATIVE AGRICULTURE_

Regenerative agriculture is a concept that encompasses sustainable farming and ethical food production approaches and thought processes (see for example, Giller et al., 2021). And as explored by the Rodale Institute (2019), the concept of regenerative agriculture originates from the idea of an “organic” system or “sustainable” system of food production. In the 1980’s, Robert Rodale — a publisher and promoter of regenerative agriculture — re-examined these ideas and suggested a more specific definition: regenerative agriculture as a holistic approach to farming that embraces social, economic, and environmental improvements (Rodale Institute., 2019). Moreover, as Newton et al., (2020) note the term has evolved over the years to now encapsulate multiple areas of agriculture including land management and improving ecological health.



THE WHY_

Why talk about regenerative agriculture? How does it fit into environmental conversations, conversations about our future? Broadly speaking, regenerative agriculture has sparked many discussions relating to the current/widely accepted understanding and relationship that humans have with the land.

MY RESEARCH QUESTION_

Near the start of my data collection journey, I realized that a large obstacle for regenerative agriculture focused on awareness. While experts, scientists, and researchers within the field of ethical food production have been exploring and writing about the possibilities of regenerative agriculture more frequently, the term and concept of regenerative agriculture still remains generally unknown by the larger public. Taking this into account, I wanted to ensure that my research question had awareness at its core, leading me to refine it to the following:

How might we broaden awareness of the social, economic and environmental benefits of regenerative agriculture for a sustainable future?

BUILDING BLOCKS OF REGENERATIVE AGRICULTURE_

1_ENVIRONMENTAL BENEFITS

Regenerative agriculture provides many environmental benefits and new possibilities. As stated by Lal (2020):

...how can [regenerative agriculture] be adapted to produce enough food, be a negative emission technology, and advance Sustainable Development Goals of the United Nations (2015)?... less land area, less input of chemicals, less use of water, less emission of greenhouse gases, less risk of soil degradation, and less use of energy-based inputs. The strategy is to spare land and resources for nature. (p. 123)

Much research on regenerative agriculture points to these methods having the potential to reduce the force of climate change. The findings of Newton et al. (2020) suggest that regenerative agriculture has the “core intention” of improving soil health. With the restoration of degraded soil, a symbiotic chain of events occurs, one where the water-quality, plant-life, and general land productivity is enhanced. Newton et al. (2020) further note there are active groups dedicated to further developing conservation agriculture. Groups such as Project Drawdown (2020) defines their regenerative agriculture practices as any:

annual cropping system (excluding rice production) that includes at least four of the following six regenerative practices: compost application, cover crops, crop rotation, green manures, no-till or reduced tillage, and/or organic production. These practices sequester carbon in soils and reduce emissions at modest rates, but have wide adoption potential and thus impressive mitigation potential (para 2).

2_IMPACT ON WATER CONDITIONS

In relation to soil health, regenerative agriculture is also connected to balanced water conditions. Elevitch et al. (2018) note that regenerative practices are known to “increase water percolation, water retention, and clean and safe water runoff” (p. 21). As a result, biodiversity and eco-resiliency are better promoted.

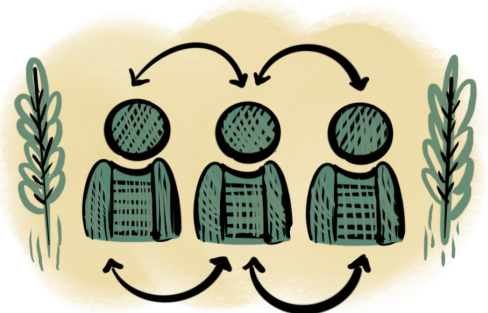
3_IMPACT ON ENERGY USE

In addition to soil health and increased water quality, regenerative agriculture can also promote more sustainable energy use. According to Hellwinckel & De La Torre Ugarte (2009), “As energy becomes scarce in the coming decades, agriculture must transition to practices that run on solar energy, regenerate soil fertility and produce in abundance... increased grassland productivity and the

regenerative capabilities of the grasses take a considerable burden of energy intensive feedlot production” (pp. 5-6).

4_SOCIAL IMPACT

Many of the principles and ideologies behind regenerative agriculture also push for a more relational approach to interacting with the environment. Brown et al. (2021) highlight research that suggests regenerative farming can positively affect a farmer’s wellbeing by increasing their adaptive abilities and social connectedness. Within a study focusing on a group of land managers, farmers participating in regenerative farming were compared to farmers engaging in conventional practices. Brown et al. reference the work of de Villiers et al., (2014) and outlined that the farmers employing regenerative agriculture had a “higher adaptive capacity” and were more likely to participate in social learning groups compared to conventional farmers (Brown et al., 2021). Overall, they demonstrate how regenerative agriculture has shown to increase an atmosphere of interconnectedness, especially between like-minded farmers and participating communities (Brown et al., 2021).



5_LOCAL ECONOMY BENEFITS

Regenerative agriculture attempts to decrease the environmental strain and revitalize soil health. As such, urban farming can also contribute to lowering the pressure on an ecosystem by encouraging balanced food production versus mass food production. According to Murdad et al. (2022) urban farming can be broken into categories such as, “community gardens, private gardens, easement gardens, roof-top gardens, and urban orchards...where urban buildings are utilised for agricultural activities” (p. 10). Murdad et al. (2022) further summarize the economic benefits of urban farming as: “cash-free nutrients, lowering expenditure, income generator, green innovation, employment creation, and local food production” (p. 11). Another advantage overlooked in this list is the “reduced transportation costs” (National Agricultural Library, 2022).

A core principle of regenerative agriculture follows the idea of urban food production where the use of city's resources are repurposed to minimize waste and promote a more regenerative process. This urban food system would be enacted with the overall goal of decreasing the input of fuels, water and fertilizers. As Rhodes (2017) outlines with this type of local food system in place, that involves a large number of committed

individuals, a stronger community with higher connectivity and resiliency could result.

6_RECONNECTION

It is important to note that the detachment between humans and nature is not a universal concept. Many indigenous cultures have both practiced and promoted a more interconnected approach to agriculture long before terms such as “organic,” “sustainable,” and “regenerative” existed. For example, the Regenerative Songlines group— an Australian Indigenous led initiative encouraging “continent wide connections” and the reframing of agricultural understanding— demonstrates how much of the findings and understandings of regenerative agriculture are not newly discovered. A quote from their website describes this knowledge that has long been taught:

Regeneration recognises that human and planetary health are deeply interwoven, and actively seeks to enable the flourishing of human and non-human life, on an ongoing basis, forever...In the Dreaming, as in Country, there is no separation between the animate and inanimate. Everything is living – people, animals, plants, earth, water and air. We speak of Sea, Land and Sky country. Creator ancestors

created the Country and its interface, the Dreaming. (Regenerative Songlines Australia, para 4-5)

As it is described by the observations of Gordon et al. (2021) it is important to acknowledge how many of the founding principles of regenerative agriculture borrow practices from indigenous communities while simultaneously ignoring their cultural worldviews. Gordon et al. (2021) reference Romero-Briones et al. (2020), who suggest, “both systems should be acknowledged and can work together” (p. 9).

A primary point of regenerative agriculture— that has long been understood by many indigenous cultures— is that when humans treat nature as their teacher, there is more room for harmony and social connectedness.

REGENERATIVE AGRICULTURE_

UNDERSTANDING REAL GROWTH_

With agriculture playing a large role in climate change and ecosystem health, it is important for consumers to understand the difference between buzzwords and what “green” practices will truly benefit the planet. As Orange & Cohen (2010) conclude, “[t]oday, with our growing awareness and understanding of the environment, design becomes critical. When designers utilize the intelligence of

natural systems, they can create products, industrial systems, and buildings that allow nature and commerce to successfully coexist” (p. 32).

An environmental term that has seen an increase in use is the term “sustainable.” In regard to food systems, the title “sustainable farming” is often used as a synonym for regenerative agriculture. However, many question if “sustainable” is an appropriate frame. As Rhodes (2012) suggests:

Agriculture needs to be made sustainable, and yet the term “sustainable agriculture”, in its current industrialised context, might be considered an oxymoron. Modern farming practices are based almost entirely on fossil fuels and natural gas. Liquid fuels, refined from crude oil, are used to run tractors and other kinds of farm machinery, while methane, from natural gas, is cracked in a thermal catalytic process, called “steam reforming”, to make hydrogen, which is combined with nitrogen to form ammonia, using the Haber–Bosch process. (p. 378)

With the influx of buzzwords and a deeper analysis of the term “sustainable,” it is important to ask if these words are being used appropriately.

THE GRIP OF MONOPOLIES

In addition to the loose usage of buzzwords, there exists a heavy reliance on monopolies within consumerism. As with any facet of food production in Canada, the majority of consumers usually buy from larger corporations as stated by Ahsan Moghul (2022), "In Canada we have numerous examples of monopolistic and oligopolistic hegemony in many of our industries...Sobeys, Loblaw's, Metro, Costco, and Walmart command over 60 per cent of the grocery market (para. 4). In continuation, Jake Edmiston (2020) also demonstrates the negative influence these monopolies can have:

Outbreaks of COVID-19 at Canada's two largest meat-packing plants have reverberated across the beef industry, causing a backlog of roughly 100,000 cattle, all of them now stuck on farms and costing ranchers hundreds of millions in extra feed and lost revenues. The backlog has also renewed concerns about the lack of diversification in Canadian beef processing...the vast majority of all Canadian-raised cattle are slaughtered and processed by a few massive plants owned by two multinationals: Cargill Inc. and JBS SA (para 1-3).

With monopolies dominating Canadian grocery stores, it becomes harder for local

farmers and non-traditional growers who utilize regenerative agriculture to compete and gain traction.

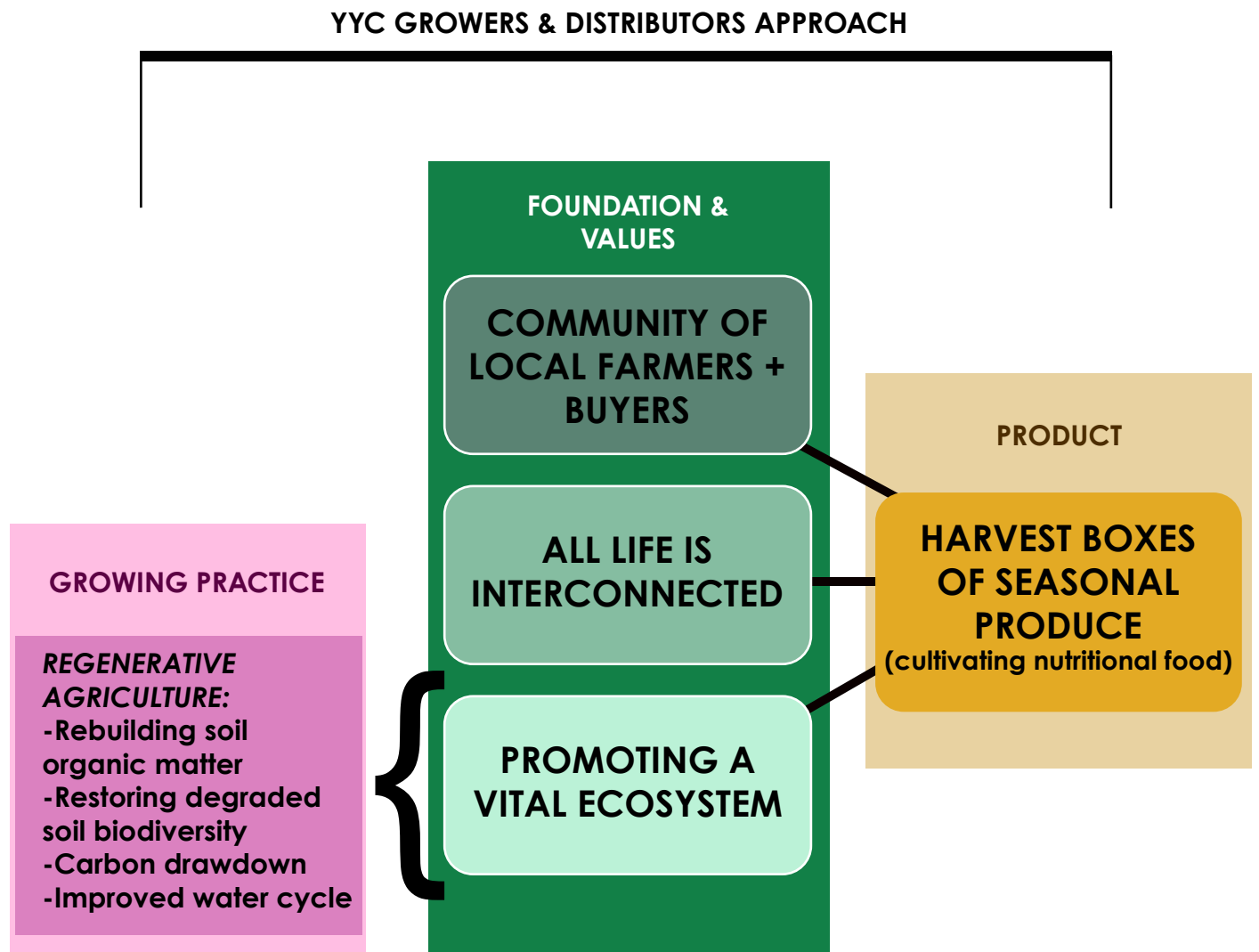


OVER 60% OF THE GROCERY MARKET IS DOMINATED BY ONLY 5 BRANDS



YYC GROWERS: EMBRACING REGENERATIVE AGRICULTURE_

While misconstrued words and the power of monopolies may, at times, overshadow regenerative agriculture, awareness for this practice is rising on a more local level. As showcased by YYC Growers & Distributors, community connection can help elevate regenerative agriculture.



By building a strong network of farmers who practice regenerative agriculture, YYC Growers & Distributors deliver seasonal harvest boxes of nutrition-rich food to the local community, exemplifying a shift in the traditional pattern of food production.

CONCLUSION & REFLECTION_

Regenerative agriculture is a method and a mindset of food production that promotes not only soil health, but social strength, eco-harmony, reduced environmental damage, and many economic benefits. The goals and objectives of regenerative agriculture draw inspiration from indigenous beliefs of balance and the idea that agricultural practitioners should utilize the natural processes of an ecosystem as their teacher. In addition, the broader sphere of industrial agriculture is populated with buzzwords such as “green” or “sustainable” and is often controlled by the influence of larger monopolies, all which can undermine the status of regenerative farming. However, despite perceived barriers associated with this concept, there exist many solutions that could not only enhance the system but propel it forward. As demonstrated by YYC Growers & Distributors, a change in pattern is often nurtured on a local scale and perpetuated through the dedication of a community. While complex, the notion of regenerative agriculture provides a more interconnected lens for investigating food security, offering a more stable approach for the future ahead.



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