

Strategic Analysis Paper

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Growing Our Future – How Regenerative Agriculture Can Achieve Economies of Scale

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Key Points

- Agriculture sits at the nexus of some of the most pressing challenges facing the world today: climate change, food security and nutrition, water quality, biodiversity and livelihoods.
- We are currently experiencing a public health crisis that has revealed the fragility of our agriculture system.
- To secure the future of a resilient agriculture industry, the goals of the economic system need to shift towards long-term resilience for farmers.
- Agricultural policy heavily influences farming systems, covering aspects such as crop insurance, land conversion, trade, nutrition and the research agenda.
- Across the industry, stakeholders need proof that regenerative agriculture can improve business resilience and financial performance.
- Purchasing habits influence brands, merchandising and marketing strategies.
- We need to bridge the divide between healthy, nutritious diets and conventional agriculture and recognise the socio-economic benefits of focusing on a 'sustainable nutrition' approach which addresses both regenerative farming and sustainable healthy consumption for all.

Summary

Agriculture sits at the nexus of some of the most pressing challenges facing the world today: climate change, food security and nutrition, water quality, biodiversity and livelihoods. Agricultural systems emit eight to ten per cent of greenhouse gas emissions in the developed world, while climate change could reduce the yield

and protein value of staple crops. The status quo simply does not work for smallholders, the number of farmers filing for bankruptcy rose by 20 per cent in 2019, the highest level in a decade.

The COVID-19 crisis is exacerbating existing pressures across the agriculture supply chain, causing deep disruption and revealing the fragility of the food system. At the same time, it has shone light on core societal values of health and nutrition and recalibrated the importance of essential food system workers. Beyond this immediate crisis, a need exists to reframe how we produce and consume food and ensure that it can restore resilience and productivity while protecting our natural assets. A transition toward regenerative practices could bring a huge win-win for farmers, food companies and the environment and a foundation for a truly future-fit agricultural system.

Regenerative agriculture could accelerate progress towards the [United Nations Sustainable Development Goals](#) by improving livelihoods, enhancing food security and improving water quality. Critically, it can help restore the health of our soil, a vitally important outcome given that soil stores more carbon than the world's biomass and atmosphere combined. Re-carbonising our soils could represent the most powerful shift in farming practice since the introduction of intensive farming systems in the 1950s and 1960s.

Acknowledgement

The content of this paper is drawn almost exclusively from a report titled [Growing Our Future: Scaling Regenerative Agriculture in the United States of America](#), 2020. It was produced by the [Forum for the Future](#). While the original Report was based on the agricultural and food production system of the United States, its content and findings are equally relevant to Australia.

Analysis

Introduction

Today's agricultural system is not broken. In fact, it works extremely well to deliver the outcomes it has been designed to achieve. The last forty years of agriculture have been incredibly successful in growing productivity. Other costs, however, such as soil degradation and biodiversity loss have been experienced. At the same time, farmer incomes have fallen in real terms. A Shift to regenerative agriculture, therefore, requires a fundamental transformation in the goals of our agriculture system, from one focused exclusively on maximising yield and efficiency to one that pursues economic, environmental and social outcomes alongside productivity.

We need to think about how the goals of a regenerative agriculture system might differ from the current agriculture system today. Researchers are endeavouring to provide insights that articulate the goals of the current system and provide a vision for what a regenerative agriculture system should be designed to achieve.

We are currently experiencing a public health crisis that has revealed the fragility of our agriculture system. This crisis, however, provides a unique and urgent opportunity to guide how the agriculture system grows so that we emerge from the COVID-19 crisis in a better place than where we started.

It is becoming clear that, with the collaborative action of stakeholders across the agriculture system, we can reimagine, reconfigure and regenerate our agriculture system. We can enable resilient supply chains, restore the health of our lands and enable farmers and businesses to thrive. A road map is required for that journey to transformation, a set of interlinked areas of action to deliver a truly regenerative agriculture system.

Our agriculture system as it exists today is incredibly successful at achieving its current goals, maximising profit and driving efficiency from productive land over the short-term. This comes, however, at the cost of soil health, the nutritious quality of our food, high carbon emissions and declining farmer livelihoods. The agriculture system could be a powerful force in addressing our most pressing global challenges by restoring ecosystem services, including soil health, water quality and biodiversity; diversifying production systems to meet our nutritional needs; focusing on nutrition quality; and building resilience and distributing value equitably. As we build towards a better agriculture system, this transition is an essential, if monumental, feat. It can only be accomplished through the collective effort of actors and stakeholders from every corner of our agriculture system, working together to address the greatest societal challenges of the coming decade: climate change, public health crises and growing economic inequality.

Work toward regenerative agriculture has accelerated, particularly in the last five years. This acceleration, however, is fragmented with duplication of effort alongside gaps in existing approaches and a lack of connection and coordination between initiatives.

Create financial mechanisms and market structures that support regenerative outcomes.

A critical area for action revolves around shifting market structures towards regeneration. The current economic system rewards short-term financial gain, focuses on economies of scale to maximise yield and efficiency, commoditises crops and externalises environmental and social costs. The current business model works very well for a small number of powerful players but externalises environmental impacts and does not ensure decent livelihoods for farmers. To secure the future of a resilient agriculture industry, the goals of the economic system need to shift towards long-term resilience for farmers, livelihoods and communities, ensuring fairer distribution of value and risk between stakeholders and the regeneration of land and resources. This shift will impact all aspects of financial models for agriculture, from investment in innovation to underpinning risk through crop insurance.

The agricultural system needs to radically transform to meet the needs of people while operating within planetary boundaries. Changing the economic paradigm is a complex and multifaceted issue.

Empower farmers to enable grassroots coalition building.

Farmers are essential workers within all economies and yet they often feel under-valued and unsupported, especially those invested in environmentally and socially responsible practices. The community needs to sow the seeds of a culture that gives agency to farmers and elevates those who embrace regenerative practices. Empowering farmers will strengthen the economy, revitalise the sector and create more equitable power dynamics within the agriculture system.

Stakeholders from across the system recognise the need to shift more power back into small farms and regional agricultural hubs. Raising the profile and increasing the influence of farmers can empower grassroots farmer movements to play a more prominent role in shaping policy, engaging consumers and creating better financing mechanisms.

Investment into regional farmer-led initiatives and coalitions will help fuel a regenerative agriculture movement by providing platforms for farmers to engage proactively with industry and government, as well as with each other, through farmer-trusted knowledge exchange.

Shape policy to build a resilient agricultural economy.

Agricultural policy heavily influences farming systems, covering aspects such as crop insurance, land conversion, trade, nutrition and the research agenda. The current regulatory regime incentivises the status quo; rethinking how to structure future policy, stimulus packages and rural economic development plans will be key to creating an agriculture system that works for people and planet.

Stakeholders highlight the importance of passing progressive policy and coordinated federal, state and local legislation reform. As a pragmatic first step, funding mechanisms, such as the Land Care Programme, should engage policy makers while providing increased subsidies for regenerative practices. Policies also need to focus on committing government funding towards research on regenerative agriculture practices, improving land tenure and access and addressing entrenched equity issues by supporting historically underserved farmers. Policy frameworks across key areas from public health, climate and food security need to be integrated, to deliver the scale of benefits possible from regenerative practices.

Research has highlighted the gap of activity aimed at addressing integrated, comprehensive policy reform. This indicates that this is an untapped area of leverage with tremendous potential for the advancement of regenerative agriculture.

Build and demonstrate the business case.

For many, the relationship between regenerative agriculture and an organisation's financial performance remains unclear. Stakeholders need proof that regenerative agriculture can improve business resilience and financial performance across the value chain. The business case needs to be especially clear, firstly farmers potentially transitioning to regenerative practices and secondly, brands and retailers exploring more sustainable procurement and merchandising strategies.

Regenerative agriculture offers farmers an approach that holds promise for increased profitability, diverse revenue streams, more stable markets and an increased likelihood of successful farm transfer to the next generation. For many farmers, however, seeing is believing. Farmers need confidence that regenerative agriculture will financially benefit them, based on positive results within relevant regions and markets. Critical success factors include working with local champions, facilitating peer learning, providing technical support on implementation strategy as well as robust data on expected investment and returns in both financial and ecological terms.

Brands and retailers also need positive signals to invest in regenerative products. Many see the need for signals of strong consumer demand and willingness to pay premiums for regenerative products. Brands can have significant influence and power within their supply chains and wider industry, but their behaviour is very much influenced by consumers. Increasing consumer engagement will require demonstrating the value of regenerative approaches through education and awareness programs as well as effective communication strategies that empower individuals to advocate for more regenerative systems to improve the state of the planet and their communities.

Engage with consumers to increase demand for regenerative products.

Consumers hold significant power within the supply chain and wider industry. Purchasing habits influence brands, merchandising and marketing strategies. Consumers acting as engaged constituents can also lend power in support of new policy and legislation. While consumer interest and demand for sustainability has generally grown, understanding of and demand for "regenerative" remains very light, compared with other niche movements such as "organic".

What might it look like to communicate regenerative agriculture to consumers? While stakeholders agree on the importance of increasing consumer engagement, they lack consensus around best tactics. The most successful approaches to date include creative uses of media, conveying health and nutritional benefits and creating links back to local and community-based supply chains. Consistent language and aligned messages with consumers' motivations will drive demand. Researchers should further study the psychology behind the consumption of sustainable products and what drives mainstream behaviour change, such as concern for safety, the need to nurture, or egocentric fulfillment.

Prioritise nutritional benefits to enable healthy diets.

Malnourishment and undernutrition impact a significant proportion of the world's population. The costs of poor diets are considered to count in trillions of dollars globally, with research estimating healthcare costs of \$50 billion a year in the United States and \$11.8 billion in Australia. Poor diets implicated in almost a half of all cardiometabolic deaths and nearly a fifth of the costs of strokes and type-two diabetes. Impacts of climate change have the potential to further decrease the nutritional value of important food crops globally.

Experts recognise the nutritional benefits of a diverse and balanced diet. The general shift from traditional food crops towards more specialised, high-value cash crops is one factor that has contributed to a food system where some communities are unable to access sufficient nutrition. Regenerative agricultural systems typically incorporate an increased number of crop rotations and species selections that have high nutritional value, while pasture-fed livestock can provide more nutritious, healthier outputs.

Many of these benefits, however, are not well understood and the food system tends to prioritise yields and production efficiencies over the nutrition provided per hectare. We need to bridge the divide between healthy, nutritious diets and conventional agriculture and recognise the socio-economic benefits of focusing on a 'sustainable nutrition' approach which addresses both regenerative farming and sustainable healthy consumption for all. Additional peer reviewed research and publication of data to show conclusive evidence that regenerative agriculture leads to better nutrition will benefit this transformation.

Mobilise landowners to enable regenerative practices to mainstream.

The relationships around land ownership play a key role in determining the environmental impacts of farming and uptake of environmental conservation. In many regions, farmers rent cropland and pasture. Since the benefits of implementing regenerative agriculture approaches can take several years to realise, scaling regenerative agriculture will require creating positive and supportive relationships between landowners and farmers towards shared goals. Farmers need secure, longer-term leases to justify their investments.

In Australia, young and aspiring farmers who embrace regenerative agriculture approaches often encounter challenges accessing land due to the lack of consistent long-term lease structures and the increasing cost of land driven by competition with developers. A potential 'opening' to engage landowners will occur as the generational shift coincides with ownership transition. Programs that enable, empower and connect influential landowners and investors back to the land can help build their capacity to understand regenerative agriculture and influence landowners to work with farmers. Institutional and non-traditional landowner relationships offer interesting opportunities and could play an influential role.

Conclusion

The current health crisis has brought the fault lines in our agricultural system into stark view. In the short-term, it has exacerbated the existing pressure on the physical, mental and financial health of growers and workers in grocery stores, processing plants and in the fields and pasture. Underlying this are even greater

challenges as land and soil degrades and environmental challenges and altered weather patterns increase volatility in food and fibre production. The transition to regenerative agriculture will need to shift the underlying structures towards a way of thinking that fosters resilience in the agriculture system and delivers positive and restorative social and environmental outcomes. While navigating this time of crisis, our society is revisiting the role of local communities and how business and governments can partner more effectively and recognise what is needed for farming and business models to meet this challenge and help farming communities thrive now and in the future.

Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.

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